Best Management Practices for Small Egg-Producing Flocks and "The Law"

Biographical Information:

David D. Frame
Utah State University

David D. Frame graduated from Utah State University in 1980 with a B.S. in Animal Science and attended veterinary school at Oregon State University. After graduation, he completed a residency at the University of California, Davis in avian medicine. He was subsequently employed as chief veterinarian for Moroni Feed Company, Moroni, Utah where he worked for 12 years before joining the Animal, Dairy, and Veterinary Sciences (ADVS) faculty at Utah State University in 1998.

Dr. Frame is an Associate Professor in the ADVS Department. He is the USU Extension Poultry Specialist and is board certified in the American College of Poultry Veterinarians.

Dr. Frame has been extensively involved in avian influenza field work and was asked to participate in a national task force to combat an outbreak of low pathogenicity avian influenza in Virginia and West Virginia in 2002. Since joining the faculty at USU, Dr. Frame has worked closely with the Utah turkey and egg industries.

Dr. Frame has served on various national boards, including the General Conference Committee of the National Poultry Improvement Plan, an advisory committee to the United States Secretary of Agriculture. He presently serves as editor for the Western Poultry Disease Conference, an internationally renowned poultry disease forum.

A life-long love of poultry hallmarks Dr. Frame's career. In earlier years he bred, raised, and showed many different breeds and varieties of exhibition chickens and has judged local poultry shows for a number of years.

Session Description:

This presentation will give an introduction of the current regulatory situation regarding food production, briefly describe the FDA Egg Rule, discuss key FAQs regarding egg production, and offer best management practices for small egg producers in order to provide a clean, safe commodity (i.e. table eggs).

FOOD SAFETY

On many people's mind. . . .
On government's mind. . . .
Food safety has been and continues to be an important concern of the egg industry.

NEW FDA FOOD SAFETY MODERNIZATION ACT

The FDA Food Safety Modernization Act (FSMA), the most sweeping reform of our food safety laws in more than 70 years, was signed into law by President Obama on January 4, 2011. It aims to ensure the U.S. food supply is safe by shifting the focus from responding to contamination to preventing it.

Two major proposed FSMA rules on January 4, 2013:

1) Preventive Controls for Human Food
2) Standards for Produce Safety

These two FSMA rules are part of an integrated reform effort that focuses on prevention and addresses the safety of foods produced domestically and imported, with additional rules to be published shortly.

FDA EGG RULE

Implementation began July 9, 2012 for farms of 3000 to 49,999 layers.

Components:

- *Salmonella* Enteritidis (SE) program for each farm
- Rodent control
- Fly control
- Cleaning and disinfection of SE (+) houses
- Biosecurity between flocks
- Refrigeration
- Testing of pullets and layers
- Plan for diversion of eggs to pasteurization if manure tests (+) for SE

STATE EGG QUALITY ASSURANCE PROGRAMS

State Egg Quality Assurance Programs (EQAPs) are voluntary programs based on Hazard Analysis Critical Control Point (HACCP) system principles and designed around production, management, and monitoring practices implemented to decrease the risk of *Salmonella* Enteritidis illness. EQAP's have been found to play a major role in the reduction of *Salmonella* illness in the U.S.

FAQs

Q: What are free-range eggs?
A: Free-range eggs are from hens that live outdoors or have access to the outdoors. Modifications for seasonal variations are acceptable. The nutrient content of eggs from free-range hens is the same as those from hens housed in production facilities with cages and without cages.

Q: Do egg laying hens receive hormones?
A: Egg laying hens are not given hormones. Some egg cartons say that the eggs are "hormone free"; however, this is true for all eggs in commercial egg production in the United States.
ALL eggs contain natural hormones.

Q: Where can I find information on organic eggs?
A: Eggs that are labeled organic and have the U.S. Department of Agriculture organic seal on the carton were produced following the USDA National Organic Program standards. To learn more, go to www.ams.usda.gov/nop.

Q: What does "Antibiotic Free" mean?
A: Some egg cartons say that the hens were not given antibiotics. This statement is true for all eggs produced in the United States, even if it is not specified on the carton. Hens may be given antibiotics for therapeutic purposes when ill; however, when they are ill, hens typically stop laying eggs.

BEST MANAGENT PRACTICES FOR SMALL EGG LAYING FLOCKS

Husbandry
- Minimize exposure to wild birds – especially waterfowl.
- Feed a balanced diet for optimum maturity and egg laying.
    - Higher protein during growth and development.
    - Sufficient calcium (3.5 to 4%) for hens in production.
- Provide more waterers than you think you'll need!

Rodent Control
- Rodent control found to be highly correlated to SE infection in layers.

Egg sanitation
- Gather eggs at least twice daily – more often in extremely hot weather.
- Supply sufficient quantity of nest boxes and keep full of clean dry bedding.
- Promptly remove broody hens from main flock.

Egg storage
- Wash eggs only if needed.
- Cool as soon as possible to 45°F; store at this temperature.
- Do not keep eggs in prolonged storage.

Abide by all local and state laws for public sales

Common sense business practices

Have records to show that you are doing what is in your operational plan.
Keys to passing inspections: "Say What You Do and Do What You Say."

FURTHER INFORMATION AND FACT SHEETS

http://www.fda.gov/Food/GuidanceComplianceRegulatoryInformation/GuidanceDocuments/FoodSafety/ucm285101.htm

http://www.americanhumane.org/animals/programs/farm-animal-welfare.html

http://extension.usu.edu/htm/publications/by=category/category=39

USDA – Farm Service Agency, "*Farm Loan Programs*"

Biographical Information:

Korry L. Soper
Farm Service Agency

Korry grew up in Panguitch, Utah. He owned and operated his own livestock operation consisting of sheep and hogs until he went to college in 1984. He liquidated his assets from that operation and used the funds to put himself through school. Korry graduated from Utah State University in 1989 with an Agribusiness Degree and a minor in Business Administration. He began his career with USDA working for the Farmers Home Administration in Blackfoot, Idaho and transferred to the Farm Service Agency in Manti, Utah in 1998. Currently, he is the Farm Loan Manager for the Sanpete County FSA office and the Sevier County FSA office. These offices provide farm loan assistance and guarantees to Sanpete, Sevier, Piute and Wayne county producers. Presently, he lives in Manti, UT.

Travis Cartright
Farm Loan Officer
Farm Service Agency

Travis Cartright is from Ephraim and currently resides in Ephraim. He is married and has 5 kids. Travis graduated from Snow College and from Utah State University with a dual major in Finance and Management. He currently raises hay on 30 acres of ground near Ephraim and has worked for the Farm Service Agency for 11+ years. He really enjoys helping beginning farmers and ranchers get their start in their own operations.

Session Description:

Information will be presented outlining the different types of farm loans offered by the Farm Service Agency.

- Microloans
- Youth Loans
- Direct Operating Loans
- Direct Farm Ownership Loans

- Bank Guarantees

FSA makes direct and guaranteed farm ownership and operating loans to family-size farmers and ranchers who cannot obtain commercial credit from a bank, Farm Credit System institution, or other lender. FSA loans can be used to purchase land, livestock, equipment, feed, seed, and supplies. Our loans can also be used to construct buildings or make farm improvements.

FSA loans are often provided to beginning farmers who cannot qualify for conventional loans because they have insufficient financial resources. FSA also helps established farmers who have suffered financial setbacks from natural disasters, or whose resources are too limited to maintain profitable farming operations.

FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

January 2013

Microloans

Overview

The Farm Service Agency (FSA) developed the Microloan (ML) program to better serve the unique financial operating needs of beginning, niche and the smallest of family farm operations by modifying its Operating Loan (OL) application, eligibility and security requirements. The program will offer more flexible access to credit and will serve as an attractive loan alternative for smaller farming operations like specialty crop producers and operators of community supported agriculture (CSA). These smaller farms, including non-traditional farm operations, often face limited financing options.

Use of Microloans

Microloans can be used for all approved operating expenses as authorized by the FSA Operating Loan Program, including but not limited to:

- Initial start-up expenses;
- Annual expenses such as seed, fertilizer, utilities, land rents;
- Marketing and distribution expenses;
- Family living expenses;
- Purchase of livestock, equipment, and other materials essential to farm operations;
- Minor farm improvements such as wells and coolers;
- Hoop houses to extend the growing season;
- Essential tools;
- Irrigation;
- Delivery vehicles.

Simplified Application Process

The application process for microloans will be simpler, requiring less paperwork to fill out, to coincide with the smaller loan amount that will be associated with microloans. Requirements for managerial experience and loan security have been modified to accommodate smaller farm operations, beginning farmers and those with no farm management experience. FSA understands that there will be applicants for the ML program who want to farm but do not have traditional farm experience or have not been raised on a farm or within a rural community with agriculture-affiliated organizations. ML program applicants will need to have some farm experience; however, FSA will consider an applicant's small business experience as well as any experience with a self-guided apprenticeship as a means to meet the farm management requirement. This will assist applicants who have limited farm skills by providing them with an opportunity to gain farm management experience while working with a mentor during the first production and marketing cycle.

Security Requirements

For annual operating purposes, microloans must be secured by a first lien on a farm property or agricultural products having a security value of at least 100 percent of the microloan amount, and up to 150 percent, when available. Microloans made for purposes other than annual operating expenses must be secured by a first lien on a farm property or agricultural products purchased with loan funds and having a security value of at least 100 percent of the microloan amount.

Rates and Terms

Eligible applicants may obtain a microloan for up to $35,000. The repayment term may vary and will not exceed seven years. Annual operating loans are repaid within 12 months or when the agricultural commodities produced are sold. Interest rates are based on the regular OL rates that are in effect at the time of the microloan approval or microloan closing, whichever is less.

More Information and Eligibility Criteria

Additional information on the FSA microloan program may be obtained at local FSA offices or through the FSA website at www.fsa.usda.gov.

FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

October 2012

Farm Loans

Overview

The U.S. Department of Agriculture's Farm Service Agency (FSA) makes and guarantees loans to family farmers and ranchers to promote, build and sustain family farms in support of a thriving agricultural economy. FSA maintains its headquarters in Washington, DC, with offices located in each state, usually in a state capital or near a state land-grant university, as well as in most agriculturally productive counties. Farmers may apply for direct loans at local FSA offices. Guaranteed loans may be available from commercial lenders who apply for loan guarantees from FSA. Although general information may be obtained from headquarters and state offices, all programs are administered through local offices.

The goal of FSA's farm loan programs is to graduate its borrowers to commercial credit. Once a farmer is able to obtain credit from the commercial lending sector, the Agency's mission of providing temporary, supervised credit is complete.

FSA Farm Loans

FSA's loan programs are designed to help family farmers to start, purchase or expand their farming operation. In many cases, these are beginning farmers who need additional financial and business acumen to qualify for commercial credit. In other cases, they are farmers who have suffered financial setbacks from natural disasters, or who need additional resources with which to establish and maintain profitable farming operations.

Some farmers obtain their credit needs through the use of loan guarantees. Under a guaranteed loan, a commercial lender makes and services the loan, and FSA guarantees it against loss up to a maximum of 90 percent in most cases. In certain limited circumstances, a 95 percent guarantee is available. FSA has the responsibility of approving all eligible loan guarantees and providing oversight of lenders' activities.

For those not yet meeting the qualifications for a loan guarantee from a commercial lender, FSA also makes direct loans, which are serviced by an FSA official. FSA has the responsibility of providing credit counseling and supervision to its direct borrowers by making a thorough assessment of the farming operation. FSA helps applicants evaluate the adequacy of the real estate and facilities, machinery and equipment, financial and production management, and the applicant's goals. FSA assists the applicant in identifying and prioritizing areas needing improvement in all phases of the operation. An FSA official then works one-on-one with the applicant to develop and to help strengthen the identified areas that ultimately result in the applicants graduation to commercial credit.

Unlike FSA's commodity loans, most farm loans must be fully secured and can only be approved for those who have repayment ability.

Farm Ownership Loans

Eligible applicants may obtain direct loans up to a maximum indebtedness of $300,000. Maximum indebtedness for guaranteed loans is $1,302,000 (amount adjusted annually for inflation). The maximum repayment term is 40 years for both direct and guaranteed farm ownership loans. In general, loan funds may be used to purchase a farm, enlarge an existing farm, construct new farm buildings and/or improve structures, pay closing costs, and promote soil and water conservation and protection.

Farm Operating Loans

Eligible applicants may obtain direct loans for up to a maximum indebtedness of $300,000, and guaranteed loans for up to a maximum indebtedness of $1,302,000 (amount adjusted annually for inflation). The repayment term may vary, but typically it will not exceed seven years for intermediate-term purposes. Annual operating loans are generally repaid within 12 months or when the commodities produced are sold. In general, loan funds may be used for normal operating expenses, machinery and equipment,

minor real estate repairs or improvements, and refinancing debt.

Targeted Funds to Socially Disadvantaged and Beginning Farmers

Each year Congress targets a percentage of farm ownership and farm operating loan funds to socially disadvantaged (SDA) and beginning farmers. For more information, refer to the FSA Fact Sheet, "Loans for Socially Disadvantaged Farmers."

Downpayment Program

FSA has a special loan program to assist SDA and beginning farmers in purchasing a farm. Retiring farmers may use this program to transfer their land to future generations.

To qualify:

■ The applicant must make a cash down payment of at least 5 percent of the purchase price.

■ The maximum loan amount does not exceed 45 percent of the least of (a) the purchase price of the farm to be acquired; (b) the appraised value of the farm to be acquired or; (c) $500,000 (Note: This results in a maximum loan amount of $225,000).

■ The term of the loan is 20 years. The interest rate is 4 percent below the direct FO rate, but not lower than 1.5 percent.

■ The remaining balance may be obtained from a commercial lender or private party. FSA can provide up to a 95 percent guarantee if financing is obtained from a commercial lender. Participating lenders do not have to pay a guarantee fee.

■ Financing from participating lenders must have an amortization period of at least 30 years and cannot have a balloon payment due within the first 20 years of the loan.

Rural Youth Loans

These are available as direct loans only and have a maximum loan amount of $5,000. Rural youth loans may be made to individuals who are sponsored by a project advisor, such as a 4-H Club, FFA or local vocational instructor. Individuals must be at least 10 but not more than 20 years old to be eligible and reside in a town or city with a population of 50,000 or fewer people.

Emergency Loans

These loans are available only as direct loans from FSA. Emergency Loans assist farmers who have suffered physical or production losses in areas declared by the President as disaster areas or designated by the Secretary of Agriculture as disaster or quarantine areas (for physical losses only, the FSA Administrator may authorize Emergency Loan assistance). For production loss loans, applicants must demonstrate a 30 percent loss in a single farming enterprise. Applicants may receive loans up to 100 percent of production or physical losses.

Loan purposes include operating and real estate, restoring/replacing essential property, production costs for disaster year, essential family living expenses, reorganization and refinancing certain debts.

The maximum indebtedness under the Emergency Loan program is $500,000.

Conservation Loans

Conservation loans are available as guaranteed loans only. Eligible applicants may use Conservation Loan funds to complete any conservation activity included in a conservation plan or Forestry Management Plan, and may be used to refinance debts related to implementing any conservation activity if refinancing will result in additional conservation benefits. Maximum indebtedness is $1,302,000 (amount adjusted annually for inflation) and the maximum repayment term is 30 years.

Note: The family farm and test for credit requirements are not applicable to Conservation Loans.

Land Contract Guarantees

These provide certain financial guarantees to the seller of a farm through a land contract sale to a beginning or socially disadvantaged farmer. The seller may request either of the following:

Prompt Payment Guarantee: A guarantee up to the amount of three amortized annual installments plus the cost of any related real estate taxes and insurance.

Standard Guarantee: A

guarantee of 90 percent of the outstanding principal balance under the land contract.

The purchase price of the farm cannot exceed the lesser of (a) $500,000 or (b) the market value of the property. The buyer must provide a minimum down payment of five percent of the purchase price of the farm. The interest rate is fixed at a rate not to exceed the direct FO loan interest rate in effect at the time the guarantee is issued, plus three percentage points. The guarantee period is 10 years for either plan regardless of the term of the land contract. The contract payments must be amortized for a minimum of 20 years. Balloon payments are prohibited during the 10-year term of the guarantee.

Loan Servicing and Supervised Credit

FSA's mission is not limited to providing just credit - it is to provide supervised credit. This means that FSA works with each direct loan borrower to identify specific strengths and opportunities for improvement in farm production and management, and then works with the borrower on alternatives and other options to address the areas needing improvement to achieve success. Learning improved business planning and financial acumen through supervised credit is the difference between success and failure for many farm families.

To help keep borrowers on the farm, FSA may be able to provide certain loan servicing benefits to direct loan borrowers whose accounts are distressed or delinquent due to circumstances beyond their control. These benefits include:

■ Reamortization, rescheduling, and/or deferral of loans;

■ Rescheduling at the Limited Resource (lower interest) rate;

■ Acceptance of conservation contracts on environmentally sensitive land in exchange for reduction of debt; and
■ Writing down the debt (delinquent borrowers only).

If none of these options results in a feasible farm operating plan, borrowers may be offered the opportunity to pay off their debt at the current market value of the security. If this is not possible, other options include:

■ Debt settlement based on inability to repay.

■ In some cases, where a feasible operating plan cannot be developed, FSA works with commercial lenders to help the borrower retain the homestead and up to 10 acres of land.

Farms that come into FSA ownership are sold at market value, with preference given to SDA and beginning farmers.

Who May Borrow

To qualify for assistance, applicants must meet all loan eligibility requirements including:

■ Be a family farmer;

■ Have a satisfactory history of meeting credit obligations;

■ For direct OL loans, have sufficient education; training, or at least 1-year's experience in managing or operating a farm or ranch within the last 5 years. For direct FO loans, all applicants must have participated in the business operations of a farm for at least three years out of the 10 years prior to the date the application is submitted;

■ Be a citizen of the United States, including Puerto Rico, the U. S. Virgin Islands, Guam, American Samoa, Commonwealth of the Northern Mariana Islands, Republic of Pallau, Federated States of Micronesia and the Republic of Marshall Islands, a U.S. non-citizen national, or a qualified alien under federal immigration law;

■ Be unable to obtain credit elsewhere at reasonable rates and terms to meet actual needs;

■ Possess legal capacity to incur loan obligations;

■ Not be delinquent on a federal debt;

■ Not have caused FSA a loss by receiving debt forgiveness (certain exceptions apply) and;

■ Be within the time restrictions as to the number of years they can receive FSA assistance.

In the case of an entity, certain eligibility requirements apply. The entity must:

■ Meet applicant eligibility requirements;

■ Be authorized to operate a

farm in the state where the actual operation is located and;

■ Be owned by U.S. citizens, U.S. non-citizen nationals or qualified aliens.

For SDA members, they must hold a majority interest in the entity applicant to receive SDA benefits.

If the individuals holding a majority interest in the entity are related by blood or marriage, at least one member or partner must operate the family farm. If they are not related by blood or marriage, the member holding a majority interest must operate the farm.

For More Information

Additional information may be obtained at local FSA offices or through the FSA website at www.fsa.usda.gov.

Guaranteed Loan Program

Loan Purposes

Guaranteed Ownership Loans

Guaranteed Farm Ownership (FO) Loans may be made to purchase farmland, construct or repair buildings and other fixtures, develop farmland to promote soil and water conservation, or to refinance debt.

Guaranteed Operating Loans

Guaranteed Operating Loans (OL) may be used to purchase livestock, farm equipment, feed, seed, fuel, farm chemicals, insurance, and other operating expenses. Operating Loans can also be used to pay for minor improvements to buildings, costs associated with land and water development, family living expenses, and to refinance debts under certain conditions.

Maximum Loan Size

FSA can guarantee OLs or FO loans up to $1,302,000 (amount adjusted annually based on inflation).

Borrower Eligibility

To qualify for an FSA Guarantee, a loan applicant must:

- be a citizen of the United States (or legal resident alien), which includes Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and certain former Pacific Trust Territories.
- have an acceptable credit history as determined by the lender.
- have the legal capacity to incur the obligations of the loan.
- be unable to obtain a loan without a guarantee.
- not have caused FSA a loss by receiving debt forgiveness on more than 3 occasions on or prior to April 4, 1996; or any occasion after April 4, 1996.
- be the owner or tenant operator of a family farm after the loan is closed. For an OL, the producer must be the operator of a family farm after the loan is closed. For an FO Loan, the producer needs to also own the farm.
- not be delinquent on any Federal debt.

Entities (corporations, cooperatives, joint operations, partnerships, trusts, and limited liability companies) and their members/stockholders must meet these same eligibility requirements. The entity must also be authorized to operate a farm or ranch in the State where the land is located.

What Other Criteria Does FSA Consider?

In addition to meeting the eligibility criteria, the loan applicant must have a satisfactory credit history, demonstrate repayment ability, and provide sufficient security for the loan.

If the Producer Qualifies, What Next?

The following actions are usually taken as part of the application process:

- The producer and lender complete the guaranteed application and submit it to FSA (FSA will assist if needed.)
- FSA reviews the application for eligibility, repayment ability, security, and compliance with other regulations.
- FSA approves and obligates the loan.
- The lender receives a conditional commitment indicating funds have been set aside, and the loan may be closed.
- The lender closes the loan and advances funds to the producer.
- FSA issues the guarantee.

Loan Terms and Interest Rates

Repayment terms vary according to the type of loan made, the collateral securing the loan, and the producer's ability to repay. OLs are normally repaid within 7 years and FO loans cannot exceed 40 years.

The Guaranteed loan interest rate and payment terms are negotiated between the lender and the borrower. Interest rates on these loans may not exceed the rate charged the lender's average farm customer. In addition, under the Interest Assistance Program, FSA will subsidize 4 percent of the interest rate on loans to qualifying borrowers.

Security

Each loan must be adequately secured. Collateral for OLs consists of a first lien on crops to be produced and on livestock and equipment purchased or refinanced with loan funds. A lien may be taken on certain other chattel and real estate property, and an assignment usually will be taken on income such as that from a dairy enterprise. Collateral for FO loans consists of real estate only or a combination of real estate and chattels. FSA staff determines whether the collateral proposed by the lender is adequate.

Is this the Lender's Loan or an FSA Loan?

Guaranteed loans are the property and responsibility of the lender. The lender makes the loan and services it to conclusion. If successful, the borrower is able to repay the loan and no taxpayer money will be used except for administrative expenses. If a loan fails, and the lender suffers a loss, FSA will reimburse the lender with Federal funds according to the terms and conditions specified in the guarantee.

What Happens if the Loan Becomes Delinquent or the Borrower Defaults?

The lender must notify FSA when a borrower is 30 days overdue on a payment and is unlikely to bring the account current within 60 days, or if a loan is otherwise a problem. Lenders are encouraged to work with the borrower to resolve any problems.

Percent of Guarantee

For most loans, the maximum guarantee is 90 percent. The guarantee percentage will be determined by FSA based on the risk involved in the loan. The lender may receive a 95 percent guarantee when:

- The purpose of the loan is to refinance direct FSA farm credit program debt. If only a portion of the loan is for this purpose, a weighted percentage of guarantee will be used.
- The loan is made to a beginning farmer to participate in the beginning farmer down payment loan program or a qualifying State beginning farmer program.

Guarantee Fees

For most loans, FSA charges a guarantee fee of 1.5 percent of the guaranteed portion of the loan. This fee may be passed on to the borrower. The guarantee fee is waived for:

- Interest assistance loans
- Loans where more than 50% of the loan funds are used to pay off direct FSA loan debt
- Loans in conjunction with a Downpayment Farm Ownership Loan program for beginning farmers or a qualifying state beginning farmer program. This fee waiver does not extend to all beginning farmers.

Secondary Market

The secondary market for USDA guaranteed loans is a key feature of the guaranteed lending program. The lender may resell the guaranteed portion of the loan to an interested party. The interested party then becomes the *Holder* of the loan, but the original lender must retain the loan servicing responsibilities. Investors who are looking for safe investments with a

reasonable return are attracted to these loans because of the Government's full Faith and Credit guarantee against default. The existence of the secondary market makes guaranteed loan notes more liquid. By reselling the guaranteed portions, lenders reduce interest rate exposure, increase their lending capabilities, and generate fees.

Advantages of Using the Secondary Market

The existence of the secondary market is a strong inducement for lenders to become involved in guaranteed lending. Selling the guaranteed portion of the loan to other investors offers a number of advantages, including:

- **Reduced Interest Rate Risk**. Lenders can transfer risk of interest rate increases on the guaranteed portion of a fixed rate loan.
- **Increased Liquidity**. Selling the loan on the secondary market frees the funds for additional lending or investing activity.
- **Increased Lending or Investing Capabilities**. Since the guaranteed portion of the loan is generally not applied against a bank's lending limit, it can be used to expand lending capabilities.
- **Increased Return on Investment**. The sale of the guaranteed portion of the loan in the secondary market increases the lender's overall return on investment. Each time a bank sells a guaranteed portion, it generally retains a servicing fee.
- **Rates and Terms**. Lenders may be able to offer the producer more flexible repayment terms, as well as fixed and/or reduced interest rates to improve cash flow.

Where to Go for More Information

Further information and applications for FSA loan programs are available at the Agency's local county offices. These are usually listed in telephone directories in the section set aside for governmental/public organizations under the U.S. Department of Agriculture, Farm Service Agency. To locate your local FSA Office, click here.

Fact Sheet

December 2006

USDA United States Department of Agriculture

Farm Loan Programs Funding Frequently Asked Questions

Someone at the FSA office told me the loan program I need to apply for is out of money. Why does FSA run out of money?

Each year Congress appropriates money for FSA farm loans as part of the USDA budget. The funds are appropriated for the Government's fiscal year, which runs from October 1 until September 30 of the following year. The amount of money appropriated by Congress does not always meet the demand for loan funds and the Agency may run out of money for some programs.

The local office tells me they are out of loan money. But I know people in other areas are getting loans. How can this be?

Each year, when FSA receives loan money in the budget, every State receives an allocation of money from the Agency. So, one State can deplete its funds and be out of money while other States are still funding loans.

What does FSA do when States start running out of money in loan programs?

When funds in a loan program start to run low and many States are out of money, the Agency will usually pool funds. Pooling means taking all of the unused loan money from the States and placing it in a National Headquarters pool. By pooling, FSA is able to move money from areas where it is not being used to areas where it is needed. If there is enough left, the money will be redistributed to States. If there isn't much left, the money will be held at the national office, and States can request funding on a loan-by-loan basis. Pooling of unused loan funds most commonly happens in the spring.

What happens when an FSA loan program is out of money?

Congress may pass a supplemental appropriations bill to make additional money available. If Congress does not appropriate additional money, loans cannot be funded until the next fiscal year when new appropriations become available.

How does FSA allocate money to the States to make loans?

The Agency allocates money based upon the potential need for it. Money is allocated to States based upon the number of farmers in each State, the value of farm assets and net farm income. The biggest factor in dividing the money among the States is the number of farmers in each State. The loan volumes of previous years are sometimes considered as well. FSA does not allocate emergency loan money to States because it is impossible to predict the occurrence of natural disasters or declarations of quarantines. Instead, FSA makes money available for loans when a natural disaster or quarantine is declared. Emergency loan money is available on a first-come, first-served basis.

Is any of the money targeted or reserved for use by specific groups of farmers?

Yes. FSA reserves loan money for two specific categories:

Under-represented groups:

The law requires FSA to reserve or target a portion of its direct and guaranteed operating and farm ownership loan funds for use exclusively by socially disadvantaged applicants (SDA).

SDAs are classified in one or more of the following categories: women, African Americans, Native Americans, Alaskan Natives, Hispanics, Asian Americans and Pacific Islanders. In the farm ownership loan program, the percentage of loan funds targeted for SDAs is based upon the State percentage of the total rural population made up of SDA groups, and the statewide percentage of total farmers who are female. In the operating loan program, the target is determined by the statewide percentage of total farmers from the SDA minority group, and the statewide percentage of total farmers who are female.

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Beginning Farmers:

The law also requires FSA to reserve or target loan funds for exclusive use by beginning farmers, as follows: Direct Operating, 35 percent; Guaranteed Operating, 40 percent; Direct Farm Ownership, 70 percent; Guaranteed Farm Ownership, 25 percent. Funds remain targeted for beginning farmers in the guaranteed programs until April 1 of each fiscal year. In the direct programs, funds are targeted for beginning farmers until September 1 of each fiscal year.

When a loan program is out of money, should I still apply for a loan?

Yes!! Even when money has run out for a loan program, FSA still accepts, processes, and approves loan applications. Approved loans are held until money becomes available. Loans are funded in a dated order, based on the date the application was received. Submitting an application sets your place in the waiting line for funds, so it is to your advantage to apply for a loan even when there is no money available.

My application is approved, but there is no money available. How can I find out where I stand and when there will be money for my loan?

Usually when this happens, the county offices are required to submit information about approved loans to the State office. The State office staff sets up a waiting list for the State using the loan application dates. The county office can tell you if your loan has been sent to the State office and its status for funding.

For More Information

Further information on FSA's loan programs is available from local USDA Service Centers or on the FSA website at: www.fsa.usda.gov.

FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

October 2012

Loans for Beginning Farmers and Ranchers

Overview

The U.S. Department of Agriculture's (USDA) Farm Service Agency (FSA) makes and guarantees loans to beginning farmers who are unable to obtain financing from commercial lenders. Each fiscal year, FSA targets a portion of its direct and guaranteed farm ownership (FO) and operating loan (OL) funds to beginning farmers.

A beginning farmer is an individual or entity who:

■ Has not operated a farm for more than 10 years;

■ Meets the loan eligibility requirements of the program to which he/she is applying;

■ Substantially participates in the operation and;

■ For FO purposes, does not own a farm greater than 30 percent of the median size farm in the county.

(Note: All applicants for direct FO loans must have participated in the business operations of a farm for at least three years out of the 10 years prior to the date the application is submitted). If the applicant is an entity, all members must be related by blood or marriage, and all entity members must be eligible beginning farmers.

Maximum Loan Amounts

■ Direct FO or OL: $300,000;

■ Guaranteed FO or OL: $1,302,000 (Amount varies annually based on inflation).

Downpayment Program

FSA has a special loan program to assist socially disadvantaged (SDA) and beginning farmers in purchasing a farm. Retiring farmers may use this program to transfer their land to future generations.

To qualify:

■ The applicant must make a cash down payment of at least 5 percent of the purchase price.

■ The maximum loan amount does not exceed 45 percent of the least of (a) the purchase price of the farm to be acquired; (b) the appraised value of the farm to be acquired or; (c) $500,000 (Note: This results in a maximum loan amount of $225,000).

■ The term of the loan is 20 years. The interest rate is 4 percent below the direct FO rate, but not lower than 1.5 percent.

■ The remaining balance may be obtained from a commercial lender or private party. FSA can provide up to a 95 percent guarantee if financing is obtained from a commercial lender. Participating lenders do not have to pay a guarantee fee.

■ Financing from participating lenders must have an amortization period of at least 30 years and cannot have a balloon payment due within the first 20 years of the loan.

Joint Financing Arrangement

Beginning farmers may choose to participate in a joint financing arrangement. With this arrangement FSA lends up to 50 percent of the amount financed and another lender provides 50 percent or more. The applicant will use funds from the joint financing arrangement along with FSA funds for any authorized FO purpose. The interest rates for such arrangements can be obtained from the local FSA office. The term of the loan will not exceed 40 years or the useful life of the security.

Land Contract Guarantees

These provide certain financial guarantees to the seller of a farm through a land contract sale to a beginning or socially disadvantaged farmer. The seller may request either of the following:

Prompt Payment Guarantee: A guarantee up to the amount of three amortized annual installments plus the cost of any related real estate taxes and insurance.

Standard Guarantee: A guarantee of 90 percent of the outstanding principal balance under the land contract.

The purchase price of the farm cannot exceed the lesser of (a) $500,000 or (b) the market value of the property. The buyer must provide a minimum down payment of five percent of the purchase price of the farm. The interest rate is fixed at a rate not to exceed the direct FO loan interest rate in effect at the time the guarantee is issued, plus three percentage points. The guarantee period is 10 years for either plan regardless of the term of the land contract. The contract payments must be amortized for a minimum of 20 years. Balloon payments are prohibited during the 10-year term of the guarantee.

Sale of Inventory Farmland

FSA advertises inventory property within 15 days of acquisition. Eligible SDA and beginning farmers are given first priority to purchase these properties at the appraised value. If one or more eligible SDA or beginning farmer offers to purchase the same property in the first 135 days, the buyer is chosen randomly.

Where to Apply

Applications for direct loan assistance may be submitted to the local FSA office serving the area where the operation is located. Local FSA offices are listed in the telephone directory under U.S. Government, Department of Agriculture or Farm Service Agency. For guaranteed loans, applicants must apply to a commercial lender who participates in the Guaranteed Loan Program. Contact your local FSA office for a list of participating lenders.

For More Information

Further information about this and other FSA programs is available from local FSA offices or on the FSA website at www.fsa.usda.gov.

The Grazing Improvement Program

Biographical Information:

Tom Tippets
Utah Department of Agriculture

Tom Tippets works for the Grazing Improvement Program as the Central Region Coordinator

Session Description:

This session will discuss how the Grazing Improvement Program Cost Share works.

Organic Certification

Biographical Information:

Roger Brian
Utah Department of Agriculture and Food Organic Program

Roger Brian has been a Quality Compliance Specialist for the Utah Department of Agriculture & Food for the past 9 years, inspecting everything from Organic Certification to exported hay and many other agricultural areas. As an organic inspector for the UDAF for 8 of those years, he attended the OCIA accredited trainings for Organic Farming and Processing, doing between 10 and 20 organic inspection and reviews annually. Roger currently lives in Loa, Utah with his wife and 5 kids running a cow calf and sheep ranching operation that has been in the family for 4 generations.

Session Description:

This session will cover the USDA Organic certification process reviewing the NOP (National Organic Program) and some of the allowed and not allowed practices. We will also discuss the procedure for starting an Organic Operation, some of the record keeping requirements, and other organic production standards.

What is Organic Certification?

Organic certification verifies that your farm or handling facility located anywhere in the world complies with the USDA organic regulations and allows you to sell, label, and represent your products as organic. These regulations describe the specific standards required for you to use the word "organic" or the USDA organic seal on food, feed, or fiber products. The USDA National Organic Program administers these regulations, with substantial input from its citizen advisory board and the public.

Who Certifies Farms or Businesses?

Your farm or handling facility may be certified by a private, foreign, or State entity that has been accredited by the USDA. These entities are called certifying agents and are located throughout the United States and around the world. Certifying agents are responsible for ensuring that USDA organic products meet all organic standards. Certification provides the consumer, whether end-user or intermediate processor, assurance of the organic product's integrity.

What Can I Be Certified to Produce?

The USDA organic regulations recognize four categories of organic products:

- **Crops**: A plant that is grown to be harvested as food, livestock feed, fiber, or used to add nutrients to the field.
- **Livestock**: Animals that can be used for food or in the production of food, fiber, or feed.
- **Processed products**: Items that have been handled and packaged (i.e. chopped carrots) or combined, processed, and packaged (i.e. soup).
- **Wild crops**: Plants from a growing site that is not cultivated.

Is There a Transition Period?

Yes. Any land used to produce raw organic commodities must not have had prohibited substances applied to it for the past three years. Until the full 36-month transition period is met, you may not:

- Sell, label, or represent the product as "organic"
- Use the USDA organic or certifying agent's seal

USDA provides technical and financial assistance during the transition period through its Environmental Quality Incentives Program (EQIP). Learn more at **http://1.usa.gov/nrcs-eqip-apply**.

How Much Does Organic Certification Cost?

Actual certification costs or fees vary widely depending on the certifying agent and the size, type, and complexity of your operation. Certification costs may range from a few hundred to several thousand dollars. Before you apply, it is important to understand your certifier's fee structure and billing cycle. Typically, there is an application fee, annual renewal fee, assessment on annual production or sales, and inspection fees.

Once you are certified, the USDA Organic Certification Cost-Share Programs can reimburse you up to 75 percent of your certification costs. To learn more about this and other financial assistance programs, visit **www.ams.usda.gov/NOPFinancialAssistance.**

Can I Use the USDA Organic Seal?

All raw certified organic products may be labeled with the USDA organic seal. To learn more about organic labeling, including which processed or multi-ingredient products may use the USDA organic seal, visit **www.ams.usda.gov/NOPOrganicLabeling**.

How Do I Get Certified Organic?

To become certified, you must apply to a USDA-accredited certifying agent. They will ask you for information, including:

- A detailed description of the operation to be certified.
- A history of substances applied to land during the previous three years.
- The organic products grown, raised, or processed.
- A written Organic System Plan describing the practices and substances to be used.

The certification and annual recertification processes are described to the right and below respectively.

To learn more about the becoming certified to the USDA organic standards and to find a certifying agent, visit **http://1.usa.gov/organic-certification**.

Organic Certification Process

Producer or handler adopts organic practices; submits application and fees to certifying agent

Certifying agent reviews applications to verify that practices comply with USDA organic regulations

Inspector conducts an on-site inspection of the applicant's operation

Certifying agent reviews the application and the inspector's report to determine if the applicant complies with the USDA organic regulations

Certifying agent issues organic certificate

Annual Recertification Process

Certifying agent reviews the application and the inspector's report to determine if the applicant still complies with the USDA organic regulations

Inspector conducts an on-site inspection of the applicant's operation

Producer or handler provides annual update to certifying agent

USDA OVERSIGHT OF ORGANIC PRODUCTS

Organic is a labeling term for food or other agricultural products that have been produced according to the USDA organic regulations. USDA standards recognize four categories of organic production:

- ***Crops:*** Plants that are grown to be harvested as food, livestock feed, fiber, or used to add nutrients to the field.
- ***Livestock:*** Animals that can be used for food or in the production of food, fiber, or feed.
- ***Processed/multi-ingredient products:*** Items that have been handled and packaged (e.g., chopped carrots) or combined, processed, and packaged (e.g., bread or soup).
- ***Wild crops:*** Plants from a growing site that is not cultivated.

Organic standards cover the product's lifecycle from production to processing and handling, including:

- Natural resource and biodiversity conservation.
- Animal health and welfare.
- Allowed and prohibited substances.
- Pesticide and other residue testing.
- Certification and labeling requirements.
- Annual on-site compliance inspections.

USDA ORGANIC REGULATIONS

The USDA organic regulations describe the specific standards required for organic agricultural products. Producers and handlers must meet these standards to use the word "organic" or the USDA organic seal on food, feed, or fiber. Organic operations must show that they protect natural resources, conserve biodiversity, and use only approved substances.
The USDA National Organic Program (NOP) administers these regulations, with substantial input from its citizen advisory board and the public.

ALLOWED + PROHIBITED SUBSTANCES

The organic standards are designed to allow natural substances in organic farming while prohibiting most synthetic substances. A portion of the USDA organic regulations list the exceptions to this basic rule. For example, sewage sludge, irradiation, genetic engineering, and most synthetic fertilizers and pesticides may not be used. In organic processed products, any non-organic ingredients must be specifically allowed (e.g., baking soda).

CERTIFICATION PROCESS

To become certified, producers submit an application for organic certification to a USDA-accredited certifying agent. This application includes:

- A detailed description of the operation to be certified.
- A history of substances applied to land during the previous 3 years.
- The organic products grown, raised, or processed.
- A written Organic System Plan describing the practices and substances to be used.

The USDA accredits State departments of agriculture and private organizations around the world to serve as certifying agents. Certifying agents first review the written application to ensure that practices comply

USDA OVERSIGHT OF ORGANIC PRODUCTS (continued)

with organic regulations. An inspector then conducts an on-site inspection of the applicant's operation. Afterward, the certifying agent reviews the inspector's report. If the written application and the on-site inspection show that all practices comply with organic regulations, the agent grants certification to the operator for one year. Certification renewals follow the same process. **http://1.usa.gov/organic-certification**

CAN I USE THE USDA ORGANIC SEAL?

All raw certified organic products may be labeled with the USDA organic seal. To learn more about organic labeling, including which processed or multi-ingredient products may use the USDA organic seal, visit **www.ams.usda.gov/NOPOrganicLabeling**.

COMPLIANCE + ENFORCEMENT

If a farm or business violates the USDA organic regulations, punishments may include financial penalties up to $11,000 per violation and/or suspension or revocation of an operation's organic certificate. Certifying agents are also subject to compliance and enforcement actions.

Suspected violations of the organic regulations may be reported to the USDA. Send an email to **NOPCompliance@ams.usda.gov** or call the National Organic Program at 202-720-3252.

ORGANIC TRADE PARTNERSHIPS

The USDA organic regulations allow foreign organic products to be sold as organic in the United States. This is possible through three channels, each of which is regularly audited to ensure compliance:

- An NOP-accredited certifying agent certifies the foreign farm or business to the USDA organic regulations.
- NOP authorizes a foreign government to accredit certifying agents within that country to the USDA organic regulations.
- The United States and a foreign country recognize each other's organic standards as equivalent. This designation allows organic products certified in one country to be sold as organic in the other.

HISTORY + REGULATORY AUTHORITY

When Congress passed the Organic Foods Production Act (OFPA, Title XXI of the 1990 Farm Bill), it set the foundation for national standards covering the production and handling of "organic" products. OFPA authorized USDA to establish the NOP to administer these standards and the National Organic Standards Board (NOSB) to advise the NOP. The USDA organic regulations do not address food safety or nutrition.

The NOSB is designed by law to advise the NOP on which substances should be allowed or prohibited. Made up of dedicated public volunteers appointed by the Secretary of Agriculture, board members include organic growers, handlers, retailers, environmentalists, scientists, USDA-accredited certifying agents, and consumer advocates.

LOOKING FOR MORE INFORMATION?

The NOP provides additional resources on each of these topics on its website: **www.ams.usda.gov/nop**.

If you are considering organic certification or serve organic customers, visit USDA's Organic Literacy Initiative at **www.ams.usda.gov/organicinfo**

Do I Need To Be Certified Organic?

Who Needs To Be Certified?

Most farms and businesses that grow, handle, or process organic products must be certified, including:

- Farms that sell more than $5,000 in organic products per year (gross sales).
- Handlers that sell more than $5,000 of organic processed food, including handlers that place bulk products into smaller packages or that repackage/relabel products.
- Processors that sell more than $5,000 of organic processed products, unless all products contain less than 70 percent organic ingredients or only identify the organic ingredients in the ingredient statement.
- Vendors that handle (e.g. package) and sell products online (but not in stores) or otherwise deliver organic products.

Overall, if you make a product and want to claim that it or its ingredients are organic, your final product probably also needs to be certified. Please review the examples and exemptions below.

I combine multiple certified organic ingredients to make organic granola. Do I need to be certified?

If you wish to make any organic claim on the granola's principal display panel (front of the package), yes, you must be certified. Organic claims include any use of the word "organic" (alone or referring to specific organic ingredients) or the USDA organic seal. Only products meeting all requirements for the "organic" or the "100 percent organic" labeling categories may use the USDA organic seal anywhere on the package.

If you are only identifying specific organic ingredients in the ingredient statement and aren't making an organic claim elsewhere, review the "exempt handling operations" section on next page.

If you are a retail food establishment, review the "retail food establishments" section on next page.

Learn more about requirements for each labeling category at **www.ams.usda.gov/NOPOrganicLabeling**.

Another company packages my product. They have an organic certificate. Do I also have to be certified?

If you are only selling a pre-packaged product, you don't need to be certified. The company that does the final packaging for your product must be certified and get any organic product label approved prior to sale.

Who Doesn't Need to Be Certified?

The following operations do not need to be certified:

- Small organic farms and businesses (gross agricultural income from organic sales does not exceed $5,000 per year)
- Some brokers, distributors, and traders (see below)
- Retail food establishments.
- Exempt handling operations (see below).

Although certification is not required for these "exempt" or "excluded" operations, they may pursue voluntary organic certification. Exempt and excluded operations still need to comply with specific sections of the USDA organic regulations (please see other side).

Do I Need to Be Certified Organic? (continued)

Small Organic Farms and Businesses

If your farm or business' gross agricultural income from organic sales is $5,000 or less per year, it is considered an "exempt" operation. This means you don't need to be certified to sell, label, or represent your products as organic. You also do not need to develop a written organic system plan. However, you must follow all other requirements in the USDA organic regulations. Specifically, you must:

- Maintain records for at least three years.
- Not use the USDA organic seal on your products or refer to them as certified organic. If you would like to use the USDA organic seal, pursue organic certification.
- Meet other USDA organic labeling requirements.
- Not sell your products as ingredients for use in someone else's certified organic product.
- Register with the California Department of Food and Agriculture if your farm is in California.

Brokers, Distributors, and Traders Who Handle Products in Closed Containers

If your operation only sells, transports, stores, receives, or acquires products that are received in and remain in a container without being processed*, the operation does not need to be certified. An example of such an "excluded" operation would be one that handles boxed organic cereal. However, you must prevent commingling with non-organic products and contact with prohibited substances.

If your operation handles bulk, unpackaged organic products (such as cattle, milk, or grain), you need to be certified or be included under an organic producer or handler's organic system plan.

Retail Food Establishments

If your operation is a retail food establishment, such as a grocery store, it does not need to be certified. You may sell certified organic products that bear the USDA organic seal, as long as you don't process* them.

If your retail food establishment processes* certified organic products on its premises, the USDA organic regulations state that you must:

- Prevent commingling with non-organic products and contact with prohibited substances.
- Not use the USDA organic seal or refer to processed products as certified organic. If you would like to use the USDA organic seal, obtain organic certification.
- Meet other USDA organic labeling requirements.

Exempt Handling Operations

If your handling operation:

- Only handles products that contain less than 70 percent organic ingredients (excluding salt and water) or
- Only identifies organic ingredients on the product's information panel,

It does not need to be certified. However, the USDA organic regulations state that you must:

- Prevent commingling with non-organic products and contact with prohibited substances.
- Meet the USDA organic labeling requirements.
- Maintain records for at least three years that prove that the quantity of organic products sold were organically produced and handled.

Learn more: **www.ams.usda.gov/NOP**

*Processing: Cooking, baking, curing, heating, drying, mixing, grinding, churning, separating, extracting, slaughtering, cutting, fermenting, distilling, eviscerating, preserving, dehydrating, freezing, chilling, or otherwise manufacturing and includes the packaging, canning, jarring, or otherwise enclosing food in a container.

USDA- How Can I Participate in Farm Programs

Biographical Information:

Val Anderson
USDA/ Farm Service Agency

Val Anderson grew up in Ephraim working on a small family farm raising hay, grain, cattle, hogs, and sheep. His education consisted of graduating from Snow College and completing both a Bachelor's and Master's degree in Agricultural Economics at Utah State University. He began his career working for Production Credit Association, now known as Western Ag Credit. He left PCA to co- manage a family hog operation. He began working for the USDA in 1983 and has been managing the Farm Programs in Sanpete County for the past 29 years.

Session Description:

A short presentation on the following:

Extension of 2008 Farm Bill

Eligibility requirements

Applicable Programs:

- Direct Counter Cyclical and ACRE Programs
- Marketing Assistance Loan and Loan Deficiency Payments
- Non-insured Crop Disaster Assistance Program (NAP)
- Milk Income Loss assistance Program
- Crop Reporting

FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

January 2013

Nonrecourse Marketing Assistance Loans and Loan Deficiency Payments

Overview

The Food, Conservation, and Energy Act of 2008 (the 2008 farm bill) authorizes nonrecourse marketing assistance loans (MALs) and loan deficiency payment (LDPs) for the 2008-2012 crops of wheat, corn, grain sorghum, barley, oats, upland cotton, extra-long staple cotton, long grain rice, medium grain rice, soybeans, other oilseeds (including sunflower seed, rapeseed, canola, safflower, flaxseed, mustard seed, crambe and sesame seed), dry peas, lentils, small chickpeas, large chickpeas, graded and nongraded wool, mohair, honey, unshorn pelts and peanuts. The American Taxpayer Relief Act of 2012 extends the MAL and LDP provisions from the 2008 Farm Bill to the 2013 crop year; however, mohair is not eligible for 2013 MALs or LDPs, as required by Continuing Appropriations Resolution, 2013.

See the fact sheet Fees and Warehouse Storage Credits Applicable to Cotton Loans and Transfers for additional information about MALs for cotton.

MALs and LDPs are marketing tools available to producers beginning upon harvest or shearing. The MAL provides an influx of cash when market prices are typically at harvest-time lows, which allows the producer to delay the sale of the commodity until more favorable market conditions emerge. Allowing producers to store production at harvest or shearing provides for a more orderly marketing of commodities throughout the year.

MALs for commodities are considered nonrecourse as the MAL can either be redeemed by repayment or by delivering the pledged collateral to the Commodity Credit Corporation (CCC) as full payment for the MAL at maturity. MAL repayment provisions specify, under certain circumstances, that producers may repay at less than the loan rate (principal) plus accrued interest and other charges. Alternatively, loan deficiency payment (LDP) provisions specify that in lieu of securing a MAL producers may elect to receive an LDP.

MAL repayment and LDP provisions are intended to minimize potential delivery of loan collateral to CCC, accumulation of CCC-owned stocks, storage costs, discrepancies in marketing loan benefits across state and county boundaries, and allow U.S. produced-commodities to be marketed freely and competitively. Accumulating CCC-owned stocks tends to make U.S.-produced commodities less competitive in world markets and can result in substantial storage costs to taxpayers.

Producer Eligibility

To be eligible for a MAL or LDP, the producer must:

- Comply with conservation and wetland protection requirements;
- Submit an acreage report to account for all cropland on all farms;
- Have and retain beneficial interest in the commodity until the MAL is repaid or CCC takes title to the commodity;
- Meet adjusted gross income limitations described in a later section.

Commodity Eligibility

To be eligible for a MAL or LDP, the commodity must:

- Have been produced, mechanically harvested or shorn from live animals by an eligible producer and be in storable condition;
- Be merchantable for food, feed or other uses as determined by CCC;
- Meet specific CCC minimum grade and quality standards for nonrecourse MALs.

Beneficial Interest

A producer retains beneficial interest in the commodity if both of the following remain with the producer:

- Control of the commodity. The producer retains the ability to make all decisions affecting the commodity, including movement, sale, and the request for a MAL or LDP.
- Title to the commodity. The producer has not sold or has not delivered the commodity or warehouse receipt to the buyer. If delivered, title may be considered to be transferred before the producer receives payment for the commodity. For example, title is considered transferred if a producer executes an option to purchase without a provision that states that title and control remain with the producer until the buyer exercises the option to purchase and the option to purchase expires

at the earlier of:

1. The maturity of any CCC loan secured by such commodity;
2. The date CCC claims title to such commodity or;
3. Another date provided in the option.

Once beneficial interest in the commodity is lost, the commodity loses eligibility for a MAL or LDP and remains ineligible even if the producer later regains beneficial interest.

If the commodity is delivered to a buyer, processor, feedlot or mill that rejects the commodity because minimum standards are not met, beneficial interest shall not be considered lost by the producer if the commodity is returned to the producer.

The commodity is not considered rejected if the producer receives a reduced contract price for the commodity.

For further information see the FSA fact sheet on Beneficial Interest Requirements. For MALs and LDPs, contact a local USDA Service Center or visit the FSA web site at www.fsa.usda.gov.

Loan Rates

The 2008 Farm Bill sets national loan rates at the levels shown in Table 1.

County and regional loan rates are based on each commodity's national loan rate, and they:

- Vary by county or region and;
- Are based on the average prices and production of the county or region where the commodity is stored.

Settling Loans

MALs mature on the last day of the ninth calendar month following the month in which the MAL is approved. A producer may settle an outstanding nonrecourse MAL:

- Before maturity period by repaying the MAL or;
- Upon maturity by forfeiting the commodity to CCC.

For all loan eligible commodities, a producer may repay a MAL any time during the loan period at the lesser of the:

- Loan rate plus accrued interest and other charges or;
- Alternative loan repayment rates as determined by CCC.

For wheat, feed grains and oilseeds, the CCC determined county market price is often referred to as the posted county price (PCP). PCPs are established and available at each local USDA Service Center. PCPs are based upon market prices at appropriate U. S. terminal markets, adjusted to reflect quality and location. PCPs are announced daily for wheat, feed grains, soybeans, canola, flaxseed, and sunflower seed, and weekly for other oilseeds.

For peanuts, CCC determines national posted prices for four types of peanuts and announces them weekly. For dry peas and lentils, CCC determines and announces regional posted prices weekly. For wool and large and small chickpeas, CCC determines and announces a national posted price weekly. For honey, CCC determines and announces the national survey price monthly.

For long and medium grain rice and cotton, a producer may repay a MAL any time during the loan period at the lesser of the:

- Loan rate plus accrued interest and other charges or;
- Adjusted world price (AWP).

The AWP is the prevailing world market price adjusted to U.S. quality and location. AWPs are announced weekly.

Marketing Loan Gains

A producer realizes a marketing loan gain (MLG) if the MAL is repaid at less than the loan principal. The MLG rate equals the amount by which the applicable loan rate exceeds the MAL repayment rate.

Loan Premiums and Discounts

Loan premiums and discounts are determined according to the grade and quality of a specific quantity of a commodity that a producer pledges as loan collateral. Premium and discount schedules vary by commodity and are applied to the loan rate in the county where the commodity is stored. On a per-unit basis, premiums are added to and discounts are subtracted from the loan rate only when the MAL is forfeited to CCC, except for the commodities of cotton and peanuts.

Interest

The interest rate charged on a commodity loan is set at one percentage point above CCC's cost of borrowing from the U.S. Treasury at the time the loan is made as required by Section 163 of the Federal Agricultural Improvement and Reform Act of 1996. After a loan is made, the rate is fixed except the interest rate for loans outstanding on Jan. 1 is adjusted to reflect CCC's cost of borrowing on Jan. 1, plus one percentage point.

Accrued interest is the amount of interest that accumulates while a loan is outstanding, starting with the day the loan is made. Accrued interest is calculated by multiplying: (i) the applicable interest rate times, (ii) the ratio of the number of days under loan (starting with the initial day and continuing through the day prior to the day a loan is repaid) to the number of days in a year (i.e.,

365) times, (iii) the loan principal. Table 2 provides an example of how accrued interest is calculated

Loan Deficiency Payments (LDP)

A producer who is eligible to obtain a MAL, but who agrees to forgo the MAL, may obtain an LDP under certain market conditions. The LDP rate equals the amount by which the applicable loan rate where the commodity is stored exceeds the effective MAL repayment rate for the respective commodity. The LDP amount equals the LDP rate times the quantity of the commodity for which the LDP is requested. Table 3 provides an example of how MLGs and LDPs are calculated.

Other Requirements

Production Evidence

A producer who repays a MAL at less than the loan rate plus accrued interest and other charges or receives an LDP may be subject to a spot check and must provide production evidence acceptable to CCC, such as evidence of sales, warehouse receipts, or load summary or assembly sheets.

Final Loan/LDP Availability Dates

Producers may obtain MALs or receive LDPs on all or part of their eligible production anytime during the loan availability period. The loan availability period runs from when the commodity is normally harvested (or sheared for wool) until specified dates in the following calendar year. The final loan/LDP availability dates for the respective commodities are listed in Table 4.

Adjusted Gross Income Limitation

A person or legal entity with an average adjusted gross nonfarm income that exceeds $500,000 is not eligible for MLG or LDP payments, but is eligible for a MAL; however, the MAL must be repaid at principal plus interest.

For more information on AGI limitation, view the FSA fact sheet entitled, Adjusted Gross Income 2009 and Subsequent Crop Years, contact a local USDA Service Center, or visit the FSA website at www.fsa.usda.gov.

Payment Limitations

Beginning with the 2009 crop year and subsequent crop years, CCC will no longer limit payments on benefits associated with MAL or LDP programs.

Average Crop Revenue Election (ACRE)

MAL rate will be reduced by 30 percent if production comes from a farm participating in the ACRE program. Alternative loan repayment rates will not be adjusted by 30 percent. The LDP rate for commodities produced on farms enrolled in ACRE must include the 30 percent reduction from the MAL rate before determining the LDP rate. See fact sheet entitled ACRE Program, or contact a local USDA Service Center, or visit the FSA website at www.fsa.usda.gov.

More Information

For more information about FSA programs, contact the local FSA office or USDA Service Center, or visit the website at www.fsa.usda.gov.

Table 1. National Loan Rates, 2008-2013 Crops

	Production Unit	2008	2009	2010-2013
Wheat	bushel	$2.75	$2.75	$2.94
Corn	bushel	$1.95	$1.95	$1.95
Grain Sorghum	bushel	$1.95	$1.95	$1.95
Barley	bushel	$1.85	$1.85	$1.95
ELS Cotton	pound	$0.7977	$.07977	$.07977
Upland Cotton	pound	$0.52	$0.52	$0.52
Oats	bushel	$1.33	$1.33	$1.39
Long Grain Rice	cwt	$6.50	$6.50	$6.50
Medium Grain Rice	cwt	$6.50	$6.50	$6.50
Soybeans	bushel	$5.00	$5.00	$5.00
Other Oilseeds	cwt	$9.30	$9.30	$10.09
Dry Peas	cwt	$6.22	$5.40	$5.40
Lentils	cwt	$11.72	$11.28	$11.28
Small Chickpeas	cwt	$7.43	$7.43	$7.43
Large Chickpeas	cwt	N/A	$11.28	$11.28
Wool, graded	pound	$1.00	$1.00	$1.15
Wool, nongraded	pound	$0.40	$0.40	$0.40
Honey	pound	$0.60	$0.60	$0.69
Peanuts	ton	$355.00	$355.00	$355.00

Table 2. Accrued Interest Calculation Examples

Facts	Accrued Interest for Loan A		
Applicable Interest	3.150 %		
Loan Principal	$1,000		
	Scenario 1	***Scenario 2***	***Scenario 3***
Days loan outstanding	90	120	150
Days in a year	365	365	365
Accrued Interest	$7.77	$10.36	$12.95

Table 3. Marketing Loan Gain/Loan Deficiency Payment Examples

County A	MAL Repayment Rate Scenario ($ per bushel)		
Loan rate	1.95		
	Scenario 1	***Scenario 2***	***Scenario 3***
Loan rate plus interest	1.98	1.98	1.98
Effective Posted County Price (PCP)	2.05	1.90	1.98
MLG or LDP rate	0.00	0.05*	0.00

Does not include accrued interest.

Table 4. Final Loan/LDP Availability Dates by Commodity

Final Loan/LDP Availability Date	Commodity
Jan. 31	Peanuts, Wool and LDP only for Unshorn Pelts
March 31	Barley, Canola, Crambe, Flaxseed, Honey, Oats, Rapeseed, Sesame seed and Wheat
May 31	Corn, Dry peas, Grain sorghum, Lentils, Mustard seed, Long grain rice, Medium grain rice, Safflower, Small chickpeas, Large chickpeas, Cotton, Soybeans and Sunflower seed

FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

January 2012

Land Contract (LC) Guarantee Program

Overview

The U.S. Department of Agriculture's Farm Service Agency (FSA) makes and guarantees loans to eligible farmers to buy and operate family sized farms.

The Land Contract (LC) Guarantee Program provides a valuable tool to transfer farm real estate to the next generation of farmers. Guarantees will be offered to the owner of a farm who wishes to sell real estate through a land contract to a beginning farmer or a farmer who is a member of a socially disadvantaged group. The guarantee provides an incentive to sell to individuals in these groups as it reduces the financial risk to the seller due to buyer default on the contract payments.

A land contract is an installment contract between a buyer and a seller for the sale of real property, in which complete ownership of the property is not transferred until all payments under the contract have been made.

Program Purpose

Guarantees can be used for financing the purchase of a farm with a purchase price up to $500,000 on a new land contract.

Types of Guarantees

FSA offers two types of guarantees under this program. The seller may request either of the following:

Prompt Payment Guarantee: A guarantee of up to the amount of three amortized annual installments plus the cost of any related real estate taxes and insurance; or

Standard Guarantee: A guarantee of 90 percent of the outstanding principal balance under the land contract.

Program Eligibility

To qualify for assistance, buyers must meet eligibility requirements similar to those for the Guaranteed and Direct Farm Ownership Programs.

Buyers must be owner/operators of the land contract farm at the time the contract is complete. Buyers must have a feasible business plan of operation.

Guarantee Period

The guarantee period is for up to 10 years for either type of guarantee, regardless of the term of the land contract.

Interest Rate

During the term of the guarantee, the interest rate must be fixed at a rate not to exceed the Agency's direct farm ownership loan interest rate in effect at the time the guarantee is issued, plus three percentage points. (This rate is available from any FSA office.)

Land Contract Terms

The contract payments must be amortized for a minimum of 20 years and payments on the contract must be of equal amounts during the term of the guarantee.

Buyer Requirements

The buyer must provide a minimum down payment of five percent of the purchase price, plan to operate the farm, and be able to project the ability to make the land contract payments.

For More Information

Additional information, including a complete list of borrower and seller eligibility criteria and application materials may be obtained at any FSA office or through the FSA website at www.fsa.usda.gov.

FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

February 2013

Honey Nonrecourse Marketing Assistance Loans and Loan Deficiency Payments

Overview

The Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) authorizes nonrecourse marketing assistance loans (MALs) and loan deficiency payments (LDPs) for the 2008 - 2012 crop of honey. The American Taxpayer Relief Act of 2012 extends the MAL and LDP provisions for honey from the 2008 Farm Bill to the 2013 crop year.

Nonrecourse MALs and LDPs are administered by the Farm Service Agency (FSA), on behalf of the Commodity Credit Corporation (CCC).

See the fact sheet Nonrecourse Marketing Assistance Loans/Loan Deficiency Payments for additional information about MALs and LDPs by going to this website: www.fsa.usda.gov/Internet/FSA_File/mal_ldp_2013.pdf

Honey Nonrecourse Marketing Assistance Loan

Honey nonrecourse MALs provide eligible producers with interim financing on their production, facilitates the orderly distribution of loan-eligible honey throughout the year and allows the producer to delay the sale of their honey until more favorable market conditions emerge. A producer may satisfy the loan obligation by delivering to CCC the quantity of honey pledged as collateral for full payment of the loan at maturity.

Eligibility

To be eligible for a honey nonrecourse MAL or LDP, a producer must have:

- Produced honey in the United States during the calendar year for which the loan is requested and extracted honey on or before Dec. 31 of the applicable crop year;
- Had a continuous beneficial interest in the honey through date of repayment of the loan and;
- Been responsible for the financial risk of keeping the bees and producing the honey.

To be eligible for a MAL or LDP, the honey must:

- Have been produced by an eligible producer;
- Have been produced and extracted in the United States during the applicable calendar year;
- Be of merchantable quality deemed by CCC to be suitable for loan and;
- Be stored in acceptable containers.

Adjusted Gross Income

Producers or legal entities whose average adjusted gross nonfarm income exceeds $500,000 are not eligible for marketing loan gains or LDPs, but are eligible for MALs that must be repaid at principal plus interest.

Program Availability

The CCC makes nine-month nonrecourse MALs available to producers on 2008-2013 crop honey.

Final Loan/LDP Availability Date

Eligible producers must submit requests for honey nonrecourse MALs on or before March 31 of the calendar year following the applicable crop year.

Maturity Date

Loans mature on demand, but no later than the last day of the ninth month after the note and security agreement were approved.

Loan Rate

The 2008 Farm Bill sets the national loan rate for honey as follows:

- 60 cents per pound for 2008 and 2009 crop years;
- 69 cents per pound for 2010 through 2012 crop years;
- 69 cents per pound for 2013 crop year.

Where to Request Loans

If the honey is stored on the producer's farm, the producer is required to apply at the FSA county office serving the area. If the honey is stored at a location other than the producer's farm, the producer is required to apply at either (1) the county office serving the storage location or (2) the county office serving the area in which the producer's main business is located.

Other Program Provisions

- A loan service fee is collected at the time of loan disbursement;
- Interest is charged at a rate of 1 percent higher than the CCC borrowing interest rate;
- Honey pledged as collateral for a loan must be from

eligible floral sources and must be in containers that meet the type, size, cleanliness, strength, damage and fill requirements defined by regulations published by CCC in the Federal Register;
- Pre-loan inspections are required to ensure that honey inventory exists in approved storage containers and is of approximate certified weight.

Loan Deficiency Payment (LDP) Provisions

Producers who are eligible for a nonrecourse MAL, may choose to receive a LDP in lieu of a MAL. The LDP rate equals the amount by which the loan rate where the commodity is stored exceeds the effective repayment rate for the crop of honey.

For More Information

Further information on this and other FSA programs is available from local USDA Service Centers or on the FSA website at www.fsa.usda.gov.

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FACT SHEET

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY

January 2013

Direct and Counter-Cyclical Payment Program (DCP) - 2013

Overview

The American Taxpayer Relief Act of 2012, enacted on Jan. 2, 2013, amends the Food, Conservation, and Energy Act of 2008 and provides for a one-year extension of the Direct and Counter-Cyclical (DCP) program. To be eligible for direct and counter-cyclical payments, producers must enroll their farms in DCP on or before Aug. 2, 2013.

There are two types of DCP payments: direct payments and counter-cyclical payments. Both are calculated using the base acres and payment yields established for the farm. DCP is administered by the U.S. Department of Agriculture's Farm Service Agency (FSA). Regulations covering the provisions for DCP appear at 7 CFR Part 1412.

Eligibility Requirements

To be eligible for DCP, owners, operators, landlords, tenants or sharecroppers must:

- Share in the risk of producing a crop on base acres on a farm enrolled in DCP, and be entitled to share in the crop available for marketing from the base acres or would have shared had a crop been produced;
- Annually report the use of the farm's cropland acreage;
- Comply with highly erodible land conservation and wetland conservation requirements on all of their land;
- Comply with average adjusted gross income limitation provisions;
- Meet requirements to be considered actively engaged in farming;
- Comply with planting flexibility requirements;
- Use the base acres for agricultural or related activities and;
- Protect all base acres from erosion, including providing sufficient cover as determined necessary by the county FSA committee, and controlling weeds.

Eligible Commodities

Base acres and payment yields are established for the following commodities:

- Wheat;
- Corn;
- Grain sorghum, including dual purpose varieties that can be harvested as grain;
- Barley;
- Oats;
- Upland cotton;
- Long grain rice and medium grain rice (which includes short grain rice), excluding wild rice;
- Soybeans;
- Canola, crambe, flaxseed, mustard seed, rapeseed, safflower, sesame seed and sunflower seed, including oil and non-oil varieties, or any oilseed designated by the USDA secretary;
- Peanuts and ;
- Dry peas, lentils, small chickpeas (Garbanzo bean, Desi), and large chickpeas (Garbanzo bean, Kabuli).

Farms with 10 or less base acres are not eligible for DCP payments, except for farms whose owners are socially disadvantaged or limited resource farmers or ranchers.

DCP Election and Enrollment — 2013

The sign-up period to enroll begins on Feb. 19, 2013 and ends on Aug. 2, 2013.

All producers may choose to enroll in either DCP or Average Crop Revenue Election (ACRE) for the 2013 crop year. This means that producers who enrolled in ACRE for 2012 may elect to enroll in DCP in 2013, or vice versa.

Maximum Payment Amounts

Direct payments are limited to $40,000 per person or entity and counter-cyclical payments are limited to $65,000 per person or entity. The limitation is applied by attributing both the amounts received directly by entities and persons, and indirect amounts received through entities.

Adjusted Gross Income (AGI)

Persons or legal entities whose average non-farm AGI exceeds $500,000 are not eligible for direct or counter-cyclical payments.

Persons or legal entities whose average farm AGI exceeds $750,000 are not eligible for direct payments.

Persons or legal entities whose average total AGI exceeds $1,000,000 are not eligible for direct payments.

Direct Payments

Direct payment rates for the eligible DCP commodities are as follows:

- Wheat: $0.52 per bushel;
- Corn: $0.28 per bushel;
- Grain sorghum: $0.35 per bushel;
- Barley: $0.24 per bushel;
- Oats: $0.024 per bushel;
- Upland cotton: $0.0667 per pound;
- Rice, long grain: $2.35 per hundredweight;
- Rice, medium/short grain: $2.35 per hundredweight;
- Soybeans: $0.44 per bushel;

- Other oilseeds: $0.80 per hundredweight;
- Peanuts: $36 per ton.

For each commodity, the total direct payment for producers on a farm is determined by multiplying 85 percent of the farm's base acreage multiplied by the farm's direct payment yield multiplied by the direct payment rate.

Advance direct payments are not authorized and will not be issued.

The following is an example for corn:

Corn base acres:

100 acres x 85 percent
= 85 payment acres
x 110 bushels direct payment yield
x $0.28 per bushel direct payment rate
= $2,618 direct payment

Direct payments are not based on producers' current plantings of covered commodities or peanuts, but instead are calculated using the base acres and payment yields established for covered commodities and peanuts on the farm.

Counter-cyclical Payments

In addition to direct payments, counter-cyclical payments are authorized, which provide income support as part of a "safety net" in the event of low crop prices. Counter-cyclical payments for a commodity are only issued if the effective price for a commodity is below the target price for the commodity. Target prices for each commodity are as follows:

Crop	2013 Target Price
Barley	$2.63/bu
Chickpeas, large (Garbanzo bean, Kabuli)	$12.81/cwt
Chickpeas, small (Garbanzo bean, Desi	$10.36/cwt
Corn	$2.63/bu
Dry Peas	$8.32/cwt
Grain Sorghum	$2.63/bu
Lentils	$12.81/cwt
Oats	$1.79/bu
Other Oilseeds	$12.68/cwt
Peanuts	$495/ton
Rice, long grain	$10.50/cwt
Rice, medium/ short grain	$10.50/cwt
Soybeans	$6.00/bu
Upland Cotton	$0.7125/lb
Wheat	$4.17/bu

The counter-cyclical payment rate is the amount by which the target price of each commodity exceeds its effective price. The effective price for each commodity equals the direct payment rate plus the higher of:

- The national average market price received by producers during the marketing year as determined by the USDA Secretary (see Example A) or;
- The national loan rate for the commodity (see Example B).

Example A:

If the 2013 national average market price for soybeans is $11.21 per bushel:

$0.44 direct payment rate
+ $11.21 average market price*
= $11.65 effective price

(*Average market price is used since it is higher than the 2013 national loan rate of $5.00/bu)

$6.00 target price
-$11.65 effective price
= $0.00 counter-cyclical payment rate because the effective price is above the target price

Example B:

If the 2013 national average market price for corn is $1.90 per bushel:

$0.28 direct payment rate
+$1.95 national loan rate*
= $2.23 effective price

(*National loan rate of $1.95/bu is used since it is higher than the average market price)

$2.63 target price
$2.23 effective price
= $0.40 counter-cyclical payment rate

For each commodity, the total counter-cyclical payment for producers on a farm is determined by multiplying 85 percent of the farm's commodity base acres multiplied by the farm's commodity counter-cyclical payment yield multiplied by the counter-cyclical payment rate.

2013 Scheduled Timetable for DCP Payments						
Month/Year	**Commodity**					
	Barley Oats Wheat	**Dry Peas Lentils**	**Peanuts Rice Upland Cotton**	**Corn Sorghum Soybeans**	**"Other" Oilseeds**	**Large Chickpeas Small Chickpeas**
Marketing Year	June 1 - May 31	July 1 - June 30	August 1 - July 31	Sept. 1 - August 31	Varies by crop	Sept.1 - August 31
Beginning October 2013	Final Direct		Final Direct	Final Direct	Final Direct	
Beginning October 2014	Final CC	Final CC	Final CC for Peanuts & Upland Cotton	Final CC		
Beginning December 2014					Final CC	Final CC
Beginning February 2015			Final CC for Rice			

1/ By statute, counter-cyclical (CC) payments for crop year 2013 can be made no earlier than October 1, 2013.

An example for 2013 soybeans (using the counter-cyclical payment rate of $0.26) is:

100 base acres of soybeans
85 payment acres
x 30 bushels per acre counter-cyclical payment yield
x $0.26 per bushel counter-cyclical payment rate
= $663 counter-cyclical payment

Timing of Payments

For 2013, no advance direct or partial CC payments are authorized.

Producers will receive the entire 2013 direct payment in Oct. 2013.

Final counter-cyclical payments are made beginning October 2014, or as soon as practicable thereafter, after the end of the marketing year for the crop.

Planting Flexibility Provisions

Producers who participate in DCP may plant cropland in excess of the total base acreage on the farm to any commodity. However, producers are subject to certain restrictions on the planting of wild rice, fruits and vegetables (other than mung beans and pulse crops). Information on wild rice, fruits and vegetable restrictions is contained in the FSA fact sheet "Direct and Counter-cyclical Payment Program: Wild Rice, Fruit, and Vegetable Provisions." A 2013 fact sheet is available on FSA's website at www.fsa.usda.gov; click on "find FSA fact sheets, or follow this link: http://www.fsa.usda.gov/FSA/newsReleases?area=newsroom&subject=landing&topic=pfs&newstype=prfactsheet&type=detail&item=pf_20130123_insup_en_acredcp.html

For More Information

Further information on DCP is available at local FSA offices or on FSA's DCP website at: http://www.fsa.usda.gov/dcp.

Why livestock eat what they eat

Biographical Information:

Beth Burritt
Utah State University Wildland Resources Department

Currently, Beth is the Rangeland Resources Extension Agent for Box Elder, Cache and Rich Counties. For 25 years, she conducted research and extension for project that studied how learning and experience affects the diet selection of livestock. She has a BS in Animal Science and a MS in Ruminant Nutrition.

Session Description:

Why do livestock eat certain foods? Livestock select their diets based on experience, feedback from nutrients and toxins, and variety. Livestock producers can influence what animals eat on rangeland if they understand the principles of livestock behavior. Understanding behavior can improve land management and profitability. Livestock can balance their own diets, even in the feedlot. They can be taught to eat sagebrush, many weeds, and graze away from the stream. Dietary preference is one reason you should consider raising your own replacement females. Livestock learn every day. Would you like to be part of that process?

Business Doing Direct Marketing

Biographical Information:

Russ Kohler
Heber Valley Cheese - Kohler Creamery

Heber Valley Artisan Cheese is a brand new company. Our family-owned business and sparkling new creamery is located on our 4th-generation dairy farm, in the high-mountain Heber Valley in Utah. We're excited to bring the very finest fresh and aged artisan cheese to you.

Session Description:

To carry his third-generation family farm into the fourth, dairyman Grant Kohler had two choices: move the dairy from its roots in the Heber Valley and massively increase production, or build a niche market selling artisan cheese and raw milk. Russ will talk about the decision to define and find their unique market niche, the challenges faced and the key to their success.

Crop Insurance and Pooling Livestock

Biographical Information:

Hernan A. Tejeda
Utah State University

Hernan A. Tejeda is a Post-Doc in the Applied Economics Department at Utah State University, where he specializes in price risk analysis of agricultural commodity markets for crops and livestock - doing both research and extension work. He received a B.S. in Industrial Engineering from the Pontificia Catholic University of Chile in 1990, a MBA from the University of Notre Dame in 2000, and a Ph.D. in Economics, with emphasis in Agricultural Commodity Markets, from North Carolina State University in 2010.

Session Description:

Hernan will discuss the advantages of crop insurance and the pooling of livestock. Specific revenue protection examples will be presented along with a variety of pooling options.

Crop Insurance and Pooling Livestock

Diversified Agricultural Conference
Snow College, Ephraim, Utah

Hernan A. Tejeda
Utah State University
February 21, 2013

Crop Insurance

- Crop Insurance began formally in 1938, with the "Crop Insurance Act".
- Created the Federal Multi-Peril Crop Insurance (MPCI) program.
  -> Eliminate need for *disaster assistance programs*, and the budgetary problems such programs entail.
  -> Aimed at reducing *Crop Yield Variability*

Crop Insurance

Crop Insurance

- Main Risk Management Program *from the USDA* for farmers.
- Serves as a tool to *protect* a Producer against unforeseen Hazardous events, for example:
  - Adverse Weather
  - Pests
  - Fire
- Flexible program intended to meet the needs of each individual farming business.

Crop Insurance

Crop Insurance

- **Multi-Peril Crop Insurance (MCPI):**
  Protects against "*multiple*" sources of ***yield risk***

Implementation:

- 1st Determine "Actual Production History" (APH)
  - minimum of 4 consecutive years of yield records.
  - maximum of 10 consecutive years of records.

Crop Insurance

IF Less than 4 years of records available:
use county T(transitional)-yields

Transitional yields vary by county and production practices

0 years of records: 65% of county T-yield
1 year of records: 80% of county T-yield
2 years of records: 90% of county T-yield
3 years of records: 100% of county T-yield

Crop Insurance

- 2nd Choose the Coverage Level:
  - 50, 55, 60, 65, 70, or 75% of APH yield
  - 80 and 85% coverage levels available for corn, soybeans, wheat, and barley
  - *50% for catastrophic (CAT) coverage*
- 3rd Choose the Price Election
  - Up to 100% of Indemnity Price.
  - *55% for catastrophic (CAT) coverage*

Crop Insurance

Yield Guarantee = APH x Coverage Level

(*Premium/acre* =
Yield Guarantee x Premium rate x *Price Election*)

- ***If Actual Yield is LESS than Yield Guarantee***:

-> **Loss payment** =
(Yield guarantee – Actual Prodtn.) x Price Election

Crop Insurance – Example (1)

Yield Protection - Assume:

- 65% Coverage Level,
- APH yield of 90 bushels/acre
- 100% Price Election
- *Projected Price: 7.10 $/bu.*
- Actual Production of 50 bushels/acre

Then:

- Yield Guarantee: 59 bu./acre (90 bu/acre x 65%)
  - -> Yield Loss = 9 bu/acre (59 – 50)
  - -> Loss Payment = 63.9 $/acre (9 x 7.10)

Crop Insurance

Other Policy Types:

–> ***Consider Revenue instead of "just" Yields***
(replaces previous CRC, RA and IP)

- **Revenue Protection**
- **Revenue Protection *With Harvest Price Exclusion*.**
- **–> these Policies may provide payment for drop in yields AND/OR Prices.**

Crop Insurance

- **Revenue Protection:**
  Provides "Revenue Protection" *based on price AND yield expectations* by
  paying for losses below the revenue guarantee at the higher of an early-season price *or* the harvest price.
- **Revenue Protection *with Harvest Price Exclusion*:**
  Protection is based on *payments for losses below*
  revenue guarantee at the early-season price.

Crop Insurance

- **Main Difference between Yield Protection and Revenue Protection:**

  -> Yield Protection may generate loss payment Only for drop in Yields (not of Prices); so only having a drop of prices does not provide payment….

  -> Revenue Protection may generate payment for a drop in Either Yields or Price (or Both).

  However, it may be that a drop in Yields is accompanied by an increase in Harvest Price (recent case for corn) which may "cancel" the loss payment.

- Yield Protection or Revenue Protection depends on the (risk) preference of producer.

Crop Insurance – Example (2.)

Revenue Protection – Assume: (***Steep Drop in HP***)

- 65% Coverage Level
- *Normal (APH) yield of 90 bushels/acre*
- 100% Price Election *(Case for All RP)*
- *Projected Price: 7.10 $/bu.*
- Harvest Price: 4.50 $/bu.
- *Actual Production: 90 bu./acre*

Then:

Revenue Guarantee: 415.35 $/acre (.65 x 90 x 7.10)
Actual Revenue: 405 $/acre (90 x 4.50)
-> Loss Payment: 10.35 $/acre.

Crop Insurance – Example (3.)

Revenue Protection – Assume:

- 65% Coverage Level
- Normal (APH) yield of 90 bushels/acre
- 100% Price Election *(Case for All RP)*
- *Projected Price: 7.10 $/bu.*
- Harvest Price: 7.40 $/bu.
- Actual Production: 50 bu./acre

Then:

Revenue Guarantee: 432.9 $/acre (.65 x 90 x 7.40)
Actual Revenue: 370 $/acre (50 x 7.40)
-> Loss Payment: 62.9 $/acre.

Crop Insurance – Example (4.)

Revenue Protection *with HP Exclusion* – Assume:

- 65% Coverage Level
- Normal (APH) yield of 90 bushels/acre
- 100% Price Election *(Case for All RP)*
- *Projected Price: 7.10 $/bu.*
- Harvest Price: 7.40 $/bu. (*no Guarantee effect*)
- Actual Production: 50 bu./acre

Then:

Revenue Guarantee: 415.35 $/acre (.65 x 90 x 7.10)
Actual Revenue: 370 $/acre (50 x 7.40)
-> Loss Payment: 45.35 $/acre.

Crop Insurance – Example (5.)

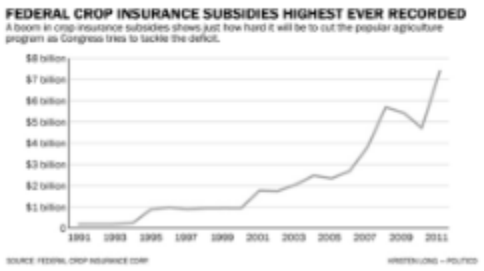
Revenue Protection *with HP Exclusion* – Assume:

- 65% Coverage Level
- Normal (APH) yield of 90 bushels/acre
- 100% Price Election *(Case for All RP)*
- *Projected Price: 7.10 $/bu.*
- Harvest Price: 8.50 $/bu. (*no Guarantee effect*)
- Actual Production: 50 bu./acre

Then:

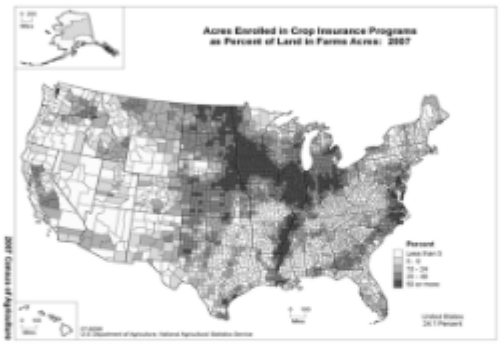
Revenue Guarantee: 415.35 $/acre (.65 x 90 x 7.10)
Actual Revenue: 425.0 $/acre (50 x 8.50)
-> Loss Payment: 0 $/acre. (*no payment here*)

Crop Insurance



Crop Insurance

Crop Insurance



Crop Insurance

Important Dates to Consider*:

- Sales Closing Date:
  All Crop Insurance Applications for a *Specific* crop and county are due.
  Example: Wheat – October 31.
  Corn – March 15.
- Final Planting Date:
  Crop *must* be planted by this date.
  Example: Wheat (Winter Coverage Endorsement) – Nov. 15
  Corn* – June 15

*Crop Insurance Agent has better/complete information

Crop Insurance

- Acreage Reporting Date:
  Includes a list of crops planted, number of acres planted and share of crop (if ownership is shared).
  Example: Wheat – June 30
- End of Insurance Date:
  Crop is no longer covered after this date; losses *must* be reported *before* this date.
- Termination Date:
  When Policy premium *must* be paid.

Crop Insurance

- *According to RMA data*, over 100,000 acres in Utah have been insured through RMA crop insurance programs each of the past 10 years and over 155,000 acres were insured last year.
- Of the 955 policies sold in Utah for **the 2010** crop year, 864 of those policies were for Crop Yield policies and 82 policies were Revenue protection policies.

Crop Insurance

Insurance Plans Available in	*UTAH*	*for 2011*	
Insurable Crops	Insured Acres	Total Acres	% Insured
Apples	603	1,400	43%
Barley	4,541	39,000	12%
Cherries (Sweet)	134	500	27%
Corn	12,398	70,000	18%
Beans (Dry)	1,536	NA	NA
Forage Production	30,007	540,000	6%
Fresh Freestone Peaches	231	1,500	15%
Oats	307	40,000	1%
Onions	515	NA	NA
Safflower	14,935	32,000	47%
Wheat	89,261	151,000	59%
Total	*154,468*	*875,400*	*17.6%*

Crop Insurance

RMA Crop Indemnities for 2010 (As of 05/09/2011)

year	stateCd	stateNm	countyCd	countyNm	fips	indemnity
2010	49	UTAH	1	Beaver	49001	$21,896
2010	49	UTAH	3	Box Elder	49003	$727,082
2010	49	UTAH	5	Cache	49005	$192,997
2010	49	UTAH	11	Davis	49011	$55,340
2010	49	UTAH	13	Duchesne	49013	$0
2010	49	UTAH	15	Emery	49015	$0
2010	49	UTAH	23	Juab	49023	$54,695
2010	49	UTAH	27	Millard	49027	$0
2010	49	UTAH	29	Morgan	49029	$0
2010	49	UTAH	31	Rich	49031	$0
2010	49	UTAH	35	Salt Lake	49035	$3,514
2010	49	UTAH	37	San Juan	49037	$372,567
2010	49	UTAH	39	Sanpete	49039	$80,504
2010	49	UTAH	45	Tooele	49045	$18,566
2010	49	UTAH	47	Uintah	49047	$0
2010	49	UTAH	49	Utah	49049	$520,461
2010	49	UTAH	57	Weber	49057	$0

Crop Insurance

RMA Crop Indemnities for 2011 (As of 05/23/2012)

year	stateCd	stateNm	countyCd	countyNm	fips	indemnity
2011	49	UTAH	1	Beaver	49001	$0
2011	49	UTAH	3	Box Elder	49003	$1,085,319
2011	49	UTAH	5	Cache	49005	$669,706
2011	49	UTAH	11	Davis	49011	$60,065
2011	49	UTAH	13	Duchesne	49013	$0
2011	49	UTAH	15	Emery	49015	$0
2011	49	UTAH	23	Juab	49023	$5,196
2011	49	UTAH	27	Millard	49027	$0
2011	49	UTAH	29	Morgan	49029	$6,365
2011	49	UTAH	33	Rich	49033	$5,015
2011	49	UTAH	35	Salt Lake	49035	$2,740
2011	49	UTAH	37	San Juan	49037	$141,170
2011	49	UTAH	39	Sanpete	49039	$0
2011	49	UTAH	45	Tooele	49045	$5,065
2011	49	UTAH	47	Uintah	49047	$0
2011	49	UTAH	49	Utah	49049	$511,410
2011	49	UTAH	57	Weber	49057	$1,502

Crop Insurance

RMA Crop Indemnities for 2012 (As of 01/22/2013)

year	stateCd	stateNm	countyCd	countyNm	fips	indemnity
2012	49	UTAH	1	Beaver	49001	$45,455
2012	49	UTAH	3	Box Elder	49003	$1,069,294
2012	49	UTAH	5	Cache	49005	$462,690
2012	49	UTAH	11	Davis	49011	$5,092
2012	49	UTAH	13	Duchesne	49013	$16,674
2012	49	UTAH	15	Emery	49015	$0
2012	49	UTAH	23	Juab	49023	$57,216
2012	49	UTAH	27	Millard	49027	$0
2012	49	UTAH	29	Morgan	49029	$41,227
2012	49	UTAH	33	Rich	49033	$0
2012	49	UTAH	35	Salt Lake	49035	$15,659
2012	49	UTAH	37	San Juan	49037	$494,451
2012	49	UTAH	39	Sanpete	49039	$129,265
2012	49	UTAH	45	Tooele	49045	$34,559
2012	49	UTAH	47	Uintah	49047	$17,665
2012	49	UTAH	49	Utah	49049	$753,252
2012	49	UTAH	57	Weber	49057	$0

Crop Insurance

2010 RMA Crop Indemnities – 5/9/2011

2011 RMA Crop Indemnities – 5/23/2012

2012 RMA Crop Indemnities – 1/23/2013

Crop Insurance

- More details regarding Crop Insurance is available at the Risk Management Agency's website:

  www.rma.usda.gov

Pooling Livestock

Pooling Livestock

- A method for ranchers to increase their profitability obtained from marketing their livestock,

  -> when they have (much) less than a semi-load truck (40,000 lbs.) to sell of cattle (calves) of *certain specific characteristics*.

  -> the rancher 'pools' his cattle (calves) of *specific characteristics* with that of other ranchers to market them (& deliver) 'all-together' as a 'lot'.

  -> *ELSE*, rancher gets penalized in his revenue for not filling a semi-load when marketing his calves.

Pooling Livestock

Pooling Livestock

Example:

- A rancher plans to sell his 48 weaned calves for delivery in October.
- The rancher will have an assortment of steers and heifers and estimates they can be grouped by different weight.
- The rancher expects to have 7 steers of 550 lbs.

Pooling Livestock

Example:

- The rancher can 'pool' these 7 steers (of 550 lbs.) with steers of similar characteristic from other ranchers,

  -> to increase the 'total weight' of steers for sale and complete one (or more) semi-load trucks.

- *All the 'pooled' steers of 550 lbs.* - from the pool of participating ranchers - *are grouped together and sold as a 'lot'.*

Pooling Livestock

Pooling Livestock

- Ranchers may coordinate to meet early summer to form a 'pool' and nominate a committee to oversee it, as well as a committee representative.
  (*Or the pool may already be in existence for years*).
- Each rancher (of the pool) declares how many steers and/or heifers he expects to have - *in the fall for sale/delivery* – specifying the approximate weight of each type.

Pooling Livestock

- The *committee chair* sums up all the pool's cattle (or calves) into groups of similar characteristics and assigns them into 'lots'.
- These lots are specified by either heifer or steer and their weight.
  -> They can also include references to having vaccinations, being all of certain color or having being fed with grains, etc.

Pooling Livestock

- The committee chair contacts a Livestock Auction to let them know about the lot details (number, gender, weight, etc.) of the cattle that will be available for sale.
- The auction company sends a representative, who films a video of a few of the cattle from each lot so that it can be shown to all potential buyers during the live-video auction.

Pooling Livestock

Pooling Livestock

- The committee chair and the company's representative agree on:
  -> the date which the lots are to be sold via auction (for example in July),
  -> the date that the calves will be ready for delivery (usually in the fall: September, October – once calves are weaned).
- The specific lots are posted in the Video auction's website and advertised to all potential buyers,
  -> with details of the characteristics of the lots for sale as well as the date of the auction

Pooling Livestock

- During the video (or internet) auction sale, the sales representative discusses the price offers and conditions received with the pool committee chair.
- Only when the pool committee chair agrees on the sale terms, is the particular lot sold and a delivery date has been set.

Pooling Livestock

- During the video (or internet) auction sale, the sales representative discusses the price offers and conditions received with the pool committee chair.
- Only when the pool committee chair agrees on the sale terms, is the particular lot sold and a delivery date has been set.

Pooling Livestock

- Once the delivery date arrives, each pool member takes his sold calves to a community yard.
- The auction representative sorts each of the rancher's calves into the previous specified lots - using a scale.
- If there is a calf (or more than one) that is over the weight of the initially specified lot to which it was assigned, there are 'sliding' scales that decrease the price of that(ose) calf(ves).

Pooling Livestock

- The sales representative pays the committee chair, which then splits the check with all the pool ranchers according to the calves they had in that particular lot.
- There is a commission for the sale (between 1.5 and 3%) that the video auction sales representative takes from the total volume sold from a lot.

Lot 355	Coalville Calf Pool			
180	Steer Calves	$Price/cwt	169.5	Base Weight: 575
QSA/PVP: *			Tag Type :	Slide: 10 cents over 585
Born Between:				
Delivery Location:	Summit County Scales which is 5 miles S of Coalville, UT			
Breed Type:	55% Blk/BWF, 25% Rd AngX, 10% CharX			
Breed of Cow:	50% Blk/BWF, 40% Rd AngX (Few Horfx/ShrtHrn)			
Breed of Bull	70% Black Angus, 20% Red Angus, 5% Angus Comp, 5% Char			
Frame:	Medium		Horns:	Few
Flesh:	Medium		Implants:	None
Est. Wt. Var.:	Uneven (15 - 20% /-)			
Precon Program	PRE-CON 2			
Vaccinations	Spring: 5-way, 5-way Resp. Fall: 7-way, 5-way Resp. one shot			
Feed Program	On cows and pasture, approx. 20% weaned 30 days			
Delivery Date:	October 19 - October 19			
Wt Conditions:	Early AM gather, sort, sex, haul 5-20 miles on Ranch Trucks, unload, sort before scale, weighed on the Ground straight.			
Comments:	Good set of crossed up calves. These guys have been selling together over 20 years. Run over 8500 Elevation. Summered on same kind of range. Weigh over 1400 calves on delivery day.			
Note:	**********			

Pooling Livestock

Pooling Livestock Requirements:

- At least three characteristics of ranchers and their calves are needed to obtain long term benefits of pooling livestock:
  1. Cooperation (so calves specification and order/deliveries are met).
  2. Uniformity in the production among pool members (similar sizes, genders, weight and others).

Pooling Livestock

Pooling Livestock Requirements:

3. Enforcement (so that calves delivered after weaned comply with the characteristics of the particular lot sold).

- **Also**, there must exist a facility like a 'community stock yard' where the ranchers can take their sold calves to have them weighted and sorted into a 'lot', in order to be shipped after sold.

Crop Insurance & Pooling Livestock

- Thank you very much
- Questions ?

Turning Sage Brush and Weeds into a Management Intensive Grazing System

Biographical Information:

Matt Palmer
Utah State University Extension

Matt Palmer has been a Utah State University Agriculture Extension Agent for 12 years. He has a bachelor's degree in Bio-Veterinary Science and a master's degree in Animal Management from Utah State University. He is the manager of JDP Ranch and Pleasant Valley Beef LLC, which markets grass-fed all natural beef from his family ranch.

Session Description:

Over the past 30 years the JDP Ranch watched their 300 acre dry pastures deteriorate to low producing sagebrush and annual weeds. This was due to years of season long grazing with sheep. To improve the carrying capacity of these pastures the Ranch conducted a pastureland restoration project. Through a combination of herbicides, anchor chains, seeding, water system development and fence construction, the 300 acre pasture went from producing about 200 lbs. of forage/acre to producing well over 700 lb of forage/acre in a two year period. This project was funded through the UDAF Grazing Improvement Program (GIP) and Division of Wildlife Resources.

Converting Sagebrush into Forage

Matt Palmer
USU Extension
Sanpete County

Before

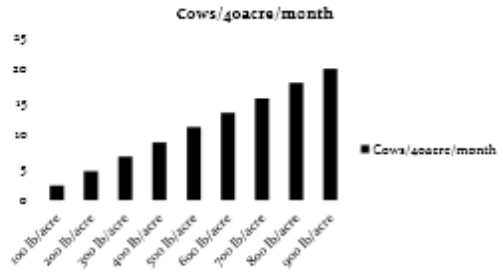
After

Why Spend Time and Funds to Reduce Sage Brush and Weeds?

- Increase forage quality and quantity
- Sage brush pastures yield 50-200 lb of feed/acre
- Perennial grasses and forbs can yield 400 to 1000 lb of feed/acre
- Less expensive than buying land
- Land costs from $500 to $5000/acre
- Converting sage into forage costs about $150-$250/acre
- With GIP and DWR cost share it is under $100/acre

How Much More Grazing?

- 40 acres @ 100 lb/acre with 60% utilization will feed 2.6 cows for a month
- 40 acres @ 900 lb/acre with 60% utilization will feed 24 cows for a month



Sage Brush Control Methods

- Mechanical
  - Chaining, Brush Beater, Harrow, Disk
- Chemical
  - 2-4,D, Tordon, Spike
- Fire
  - Lightning, Prescribed
- Targeted Grazing with Supplementation
  - Sheep, Goats, Cattle

Brush Control Cost VS Management

Relative inputs of management expertise and costs to accomplish brush management by various approaches.

Taken from "Targeted Grazing to Manage woody Brush and Trees" by Erika Campbell and Charles A. Taylor, Jr.

Mechanical

Chemical

Fire

Targeted Grazing

- Concentrated fall and winter grazing
- Protein and energy supplements
- Electric fencing

Keys to Success

- Weed Management
  - Control of Cheat Grass, Bulbous Blue Grass, Knapweed, White Top, Thistle
- Forage Establishment
  - Seed selection
  - Seed bed prep
  - Planting timing
  - Good spring and summer moisture
- Rest Period
  - No grazing for a year or more
  - Short grazing periods with adequate rest periods

JDP Ranch Pasture Restoration Case Study

- Goals
  - Convert 229 acres of low producing sagebrush, cheat grass and bulbous blue grass pasture into a sustainable rotational grazing pasture, with perennial grasses and legumes that will grow 500-1000 lb DM/acre.
  - Complete this project with little or no out of pocket expenses.

Project Team

- Tom Tippets (UDAF, GIP)
- Kendall Bagley (NRCS/DWR)
- Soren Nielsen (NRCS)
- Jason Vernon (DWR)
- Chad Dewey (Eco-life)
- JDP Ranch Family

First Step

- Site evaluation
  - Sage brush and understory cover
  - Weed populations
  - Fencing
  - Water development
- Develop Plan and Budget
  - Spray brush and weeds with 2-4,D and Round up
  - 2 way chain harrow
  - Drill seed (Crested Wheat, Intermediate Wheat, Sainfoin, Alfalfa, Forage Kochia)
  - Water line and 5 troughs
  - Cross fence into 40 acre pastures

Budget

Practice		Cost per unit	Amount	Units	Total cost	GIP cost	Producer cost
Fence		1.3	8970	ft	11661	5830.5	5830.5
Pipeline		2.06	5783	ft	11912.98	5956.49	5956.49
Troughs		1	6000	gal	6000	3000	3000
Chemical Roundup		13.85	229	ac	3171.65	1585.825	1585.825
Chemical application		8	229	ac	1832	916	916
Chemical 2,4-D		7.6	229	ac	1740.4	870.2	870.2
Chemical application		8	229	ac	1832	916	916
Chain Harrow		29.2	172	ac	5742.4	2371.2	2371.2
Range Seeding drill		20	229	ac	4580	2290	2290
Seed		30	229	ac	6870	3435	3435
broadcast seed		10	229	ac	2290	1145	1145
Total					58632.43	29316.22	29316.22

Overview

- Project was started July 2010 and completed June 2011
- Pastures not grazed until May 2012
- First year grazing fed 60 AU for 2.5 months = 150 AUM
- That is 590 lb of feed/acre on a dry year
- That is enough feed for 200 ewes for a month on 40 acres
- Out of pocket expenses totaled less than $50/acre

Before

After

Conclusion

- This grazing improvement project
  - Increased forage production from 100lb/acre to over 900lb/acre for $50/acre plus tractor hours and labor

Converting A Pasture Into A Management Intensive Grazing System

Matt Palmer
USU Extension Ag Agent
Sanpete County, Utah

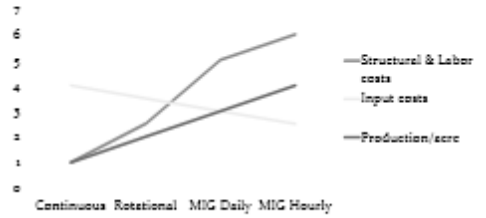
Grazing Systems

- Continuous = one pasture with season long grazing
- Rotational = 2-4 pastures with monthly rotations
- Management Intensive (MIG) =
  - 12 or more pastures with daily rotations
  - 24 or more pastures with hourly rotations

Grazing System Preferences

- Continuous Grazing
  - Lower Structural Costs
    - Fencing
    - Water
    - Labor
  - Lower Production/acre
- MIG
  - Higher Structural Costs
    - Fencing
    - Water
    - Labor
  - Higher production/acre

General Trends

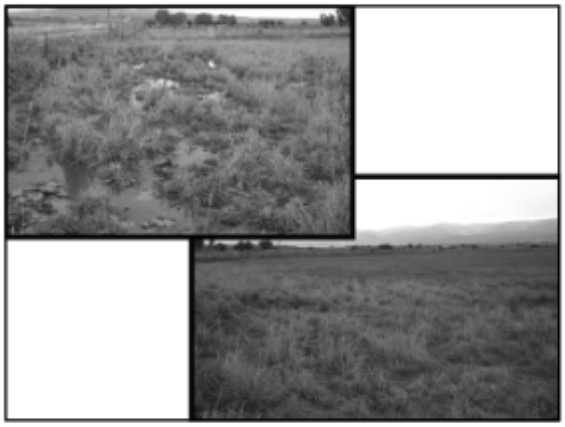


MIG Questions

- Fencing expenses?
- Water system development expenses?
- Labor/Management expenses?
- Increased production?

Pilot Project

- Develop a MIG demonstration project
- Cow-calf producer
- One year lease on 35 acre sub-irrigated pasture
- Pressure irrigation water lines
- Existing perimeter fence in poor shape



Fencing

- Develop 5, 7-acre paddocks
- Temporary electric fencing
  - 16 gauge wire with 8" offset insulators on existing fence
  - Spring wire gates
  - Poly wire and step in posts
    - 3 rolls (1320') with neck strap reels
    - 40' Step in post spacing
  - 3 Joule electric fence charger

Temp Fence Expenses

Item	Quantity	Price	Total
16 Gauge Wire 6000 ft	1	$75.00	$75.00
Offset Insulator 10 pack	13	$9.95	$129.35
Stafix X3 3 Joule	1	$185.10	$185.10
Wraparound insulator	4	$8.50	$34.00
Spring gate 14 ft	2	$8.95	$17.90
Pigtail step in posts	100	$2.50	$250.00
Poly Twine 988 1320 ft	3	$35.50	$106.00
Neck strap Reel	3	$29.75	$89.25
Deep cycle battery	2	$80	$160.00
Spinning Jenny	1	$69.75	$69.75
Galvanized tightener	4	$1.09	$4.36
Shipping			$40.00
Total			$1100.96

Water System

- Pressurized irrigation system
  - Valve opener with a garden hose valve
  - Garden hose
  - Livestock water trough set next to poly wire fence

Numbers

Cattle

- 32 cow calf pair
- 13 yearlings
- Cow Units = 42
- Acres = 35

Grazing Time

- June/July = 5 week grazing
- July/August = 7 week rest
- September = 2 week grazing
- Total grazing days = 49
- Cow days/acre = 59

Farm to Fork - Create Great Value - Set Your Own Price

Biographical Information:

Brandon Foote
Redmond Heritage Farms, LLC

Brandon Foote was born and raised in Sevier County. He graduated from Snow College and Utah State University with a Bachelor's Degree in Business Administration and a Master's Degree in Human Resource Management. He currently works for Redmond, Inc. and spends most of his time in product and business development, marketing and sales.

Brandon spent his life working in agriculture, mainly in beef and crop production. He was approached by Redmond Inc. in 2003 to begin a vertically integrated, pasture-based farm, specializing in the production of raw milk, eggs, cheese, beef and pork. Redmond Heritage Farms products are directly marketed through 3 Real Foods Market, farm-owned stores in St. George, Heber City, Orem and soon, Salt Lake City.

Session Description:

Vertical Integration - Agriculture focuses significantly on producing inputs that are to be used for other products by other business. Farmers have the ability, due to customers' increasing desire to obtain locally produced, high quality food, to create high quality products and market those products at retail prices.
Items we'll cover:

A. Marketing
    1. Product differentiation - what can you do well that few others can do?
    2. What is your story?
    3. Creating emotional attachment to products
    4. Who is your customer? Find customers that value what you produce
    5. The power of Social Media (everyone now has a voice and a cheap way to offer their story)
B. Redmond Heritage Farms and Real Foods Market
    1. How we differentiate our products - what we do well
    2. What is our story?
    3. How do we create emotional attachment with our customers
    4. How we use Social Media
    5. Who is our customer?
    6. Create value and offer it to those who regard it highly

Open Session

Farm Succession

Biographical Information:

Kip Larsen
Farm/Ranch Management Instructor, Snow College Richfield

Kip Larsen was raised on a family sheep and cattle ranch near Ephraim Utah. He has partnered with his brothers as owners/operators of K Larsen Farms. Mr. Larsen is a graduate of Snow College and the school of accountancy at Utah State University. For the past 3 year, Mr. Larsen has worked with South Central Utah farmers as an instructor for Farm/Ranch Management through Snow College. He and his wife Danni live with their son in Ephraim.

Session Description:

This session is about getting a farm succession plan started.

Agricultural Outlook Information

Biographical Information:

Dillon Feuz
Utah State University, Department of Applied Economic

Dillon Feuz has been an agricultural economics professor at the Utah State University since 2006. His primary focus areas are in Livestock Marketing, and Farm & Ranch Management. He received his B.S. in Agribusiness in 1984 and his M.S. in Agricultural Economics in 1986 from the University of Wyoming and he received his Ph.D. in Agricultural Economics in 1990 from Colorado State University. He spent six years at South Dakota State University teaching marketing and conducting research on livestock production and marketing issues. He then worked for the University of Nebraska-Lincoln for ten years analyzing various cattle management and marketing strategies and evaluating consumer's willingness-to-pay for flavor preferences for beef steaks. Dillon was raised on a cattle ranch in western Wyoming.

Session Description:

Feeder cattle markets are volatile. This presentation will compare using the futures market, options market of LRP feeder cattle insurance to help manage the volatility in feeder cattle prices. Dillon will review the cattle, sheep, corn, dairy and hay markets.

Market Situation and Outlook: Cattle, Sheep, and Corn

USU 2013 Ag Outlook Conference

Utah Bankers Association
January 25, 2013

James G. Robb
Director
james.robb@lmic.info

LMIC
Livestock Marketing Information Center

Topics: Markets and …

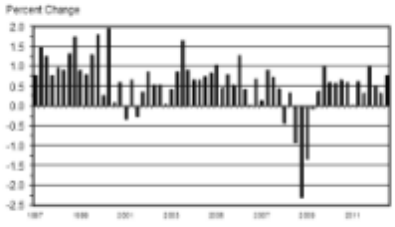
- Aspects of Domestic Consumer Demand
- International Trade Comments
- Markets and Outlook
  - Corn is Key
  - Poultry and Pork
  - Disastrous 2012 Lamb Market
  - Cattle Market Drivers
  - Cattle Prices and Profitability
- Economic Environment Summary

USDA Data Sources – NASS, AMS, FAS, and ERS
All Forecasts – LMIC

US Consumer Demand and Consumption (Disappearance)

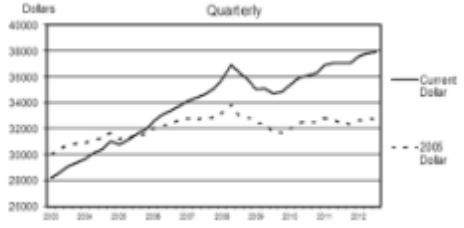
QTRLY GROSS DOMESTIC PRODUCT (GDP)

Real Dollar (2005) Change from Previous Quarter



Data Source: Dept. Commerce-BEA.

PER CAPITA DISPOSABLE PERSONAL INCOME



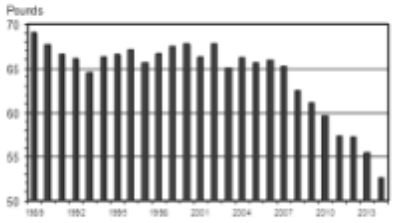
Data Source: Department of Commerce-BEA.

RETAIL ALL FRESH BEEF DEMAND INDEX

Third Quarter, Using CPI 1990=100

Data Source: LMIC

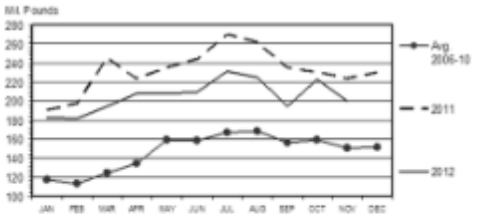
U S BEEF CONSUMPTION
Per Capita, Retail Weight, Annual



Data Source: USDA-NASS and ERS, Forecasts by LMIC

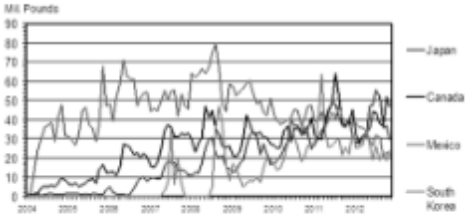
International Trade Perspective

U S BEEF AND VEAL EXPORTS
Carcass Weight, Monthly



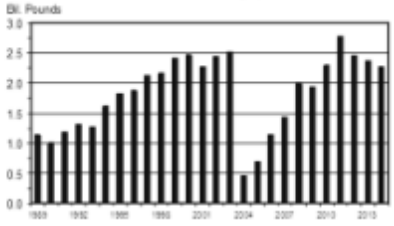
Data Source: USDA-FAS and ERS

U S BEEF EXPORTS TO MAJOR MARKETS
Carcass Weight, Monthly



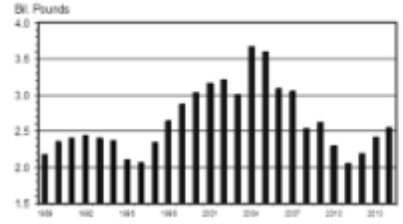
Data Source: USDA-FAS and ERS

U S BEEF AND VEAL EXPORTS
Carcass Weight, Annual



Data Source: USDA-FAS and ERS, Forecasts by LMIC

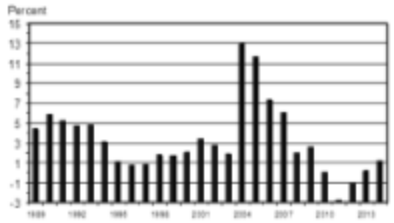
U S BEEF AND VEAL IMPORTS
Carcass Weight, Annual



Data Source: USDA-FAS and ERS, Forecasts by LMIC

U S BEEF AND VEAL NET IMPORTS

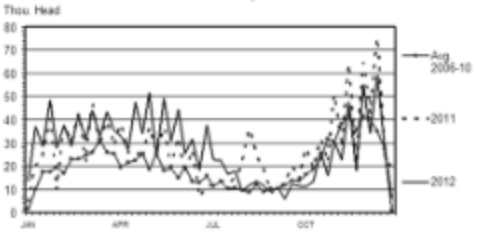
As a Percentage of Production, Carcass Weight, Annual



Data Source: USDA-FAS and ERS, Forecasts by LMIC

FEEDER CATTLE IMPORTS FROM MEXICO

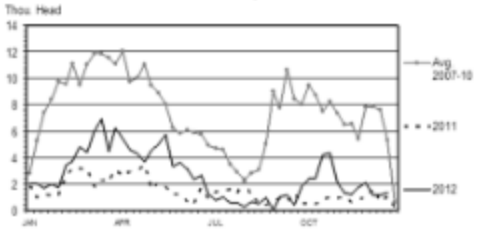
Weekly



Data Source: USDA-AMS & APHIS

FEEDER CATTLE IMPORTS FROM CANADA

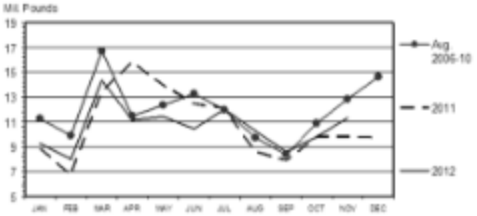
Weekly



Data Source: USDA-AMS & APHIS

U S LAMB IMPORTS

Carcass Weight, Monthly

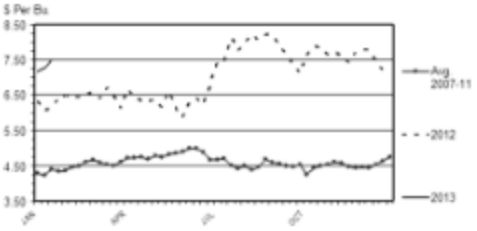


Data Source: USDA-FAS and ERS

Corn is Key

OMAHA CORN PRICES

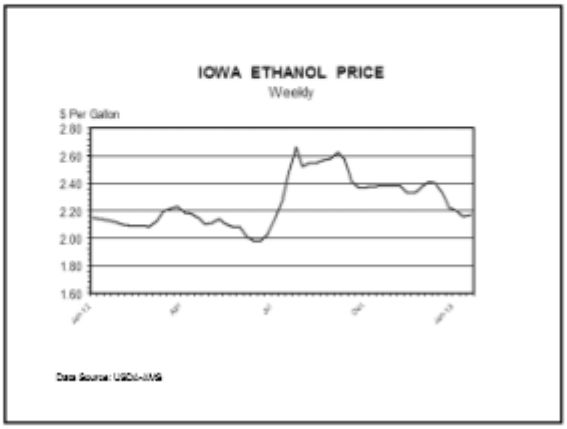
Weekly

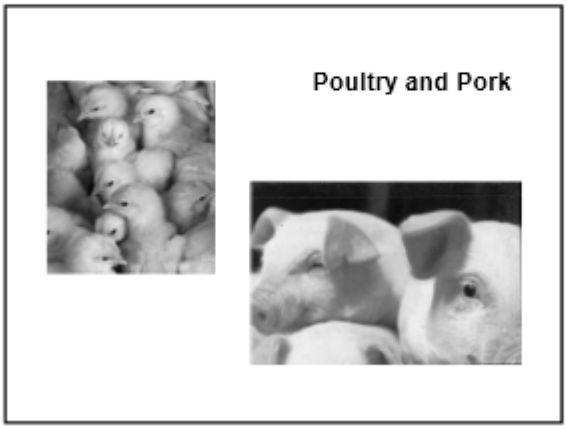


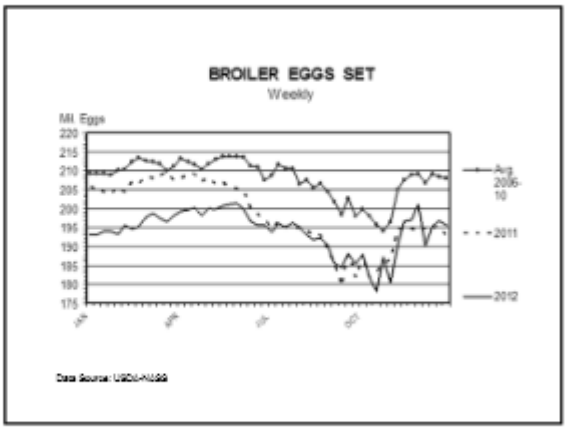
Data Source: USDA-AMS

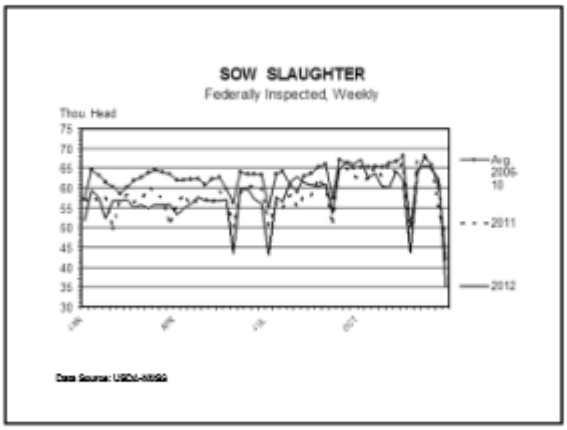

U S TOTAL CORN SUPPLY AND PRICE
Crop Year
Bil. Bushels
$ Per Bushel
Supply
Price
Data Source: USDA-NASS, Forecasts by LMC


U.S. CORN DISAPPEARANCE AND STOCKS
Crop Year
Bil. Bushels
Stocks
Exports
Food, Seed & Industrial
Feed & Residual
Data Source: USDA-NASS and EPA, Forecasts by LMC


IOWA ETHANOL PRICE
Weekly
$ Per Gallon
Data Source: USDA-AMS


Poultry and Pork

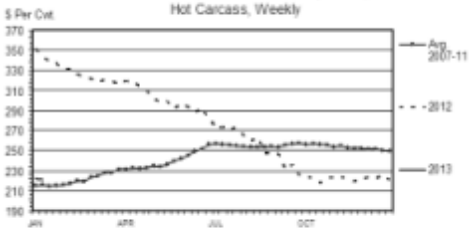

BROILER EGGS SET
Weekly
Mil. Eggs
Avg 2006-10
2011
2012
Data Source: USDA-NASS


SOW SLAUGHTER
Federally Inspected, Weekly
Thou. Head
Avg 2006-10
2011
2012
Data Source: USDA-NASS

Lamb

SLAUGHTER LAMB PRICES

National Direct (November 2010 to present),
Hot Carcass, Weekly



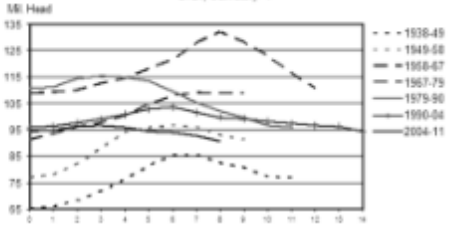
Perspective on Market Downdrafts ....

- Live Lamb Changing Form and Function Continuously
- Over Finished Adds Weight to Carcass (Increases Supply) and Reduces Quality
- Prior Lamb Market Experiences Since 1991, But Don't Happen with Regularity
- Similar Situations in Cattle (Multi-Segment Industries)
- Experimental Economics: Packer-Feeder Simulation Model.
- Problems Compound and Expand
- Off-type Products Sold into Very Thin Markets (Supply Increases in Secondary Market and Demand Declines in Primary Market). Note LFTB in Beef Market Recently.
- Takes Months To Fix (Work Through) Once Recognized
- Not A Bubble Which Involves "Overinvestment with Speculation"

Cattle Market

TOTAL CATTLE INVENTORY BY CYCLE

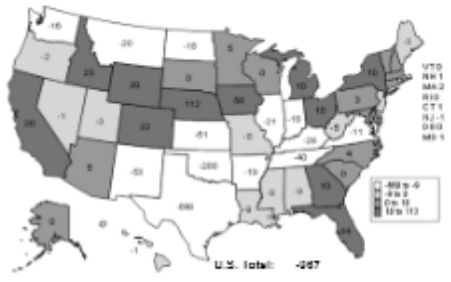
U.S., January 1



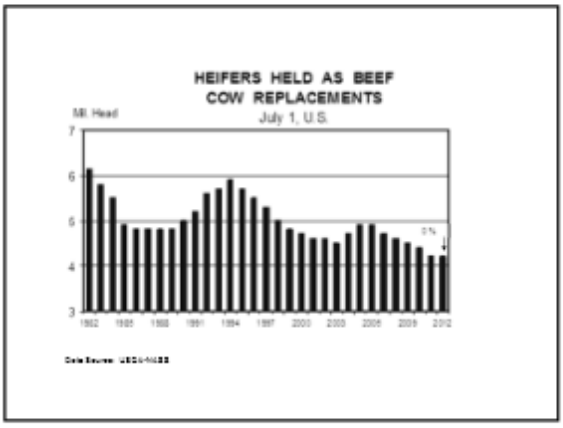
Data Source: USDA-NASS, Compiled & Analysis by LMIC

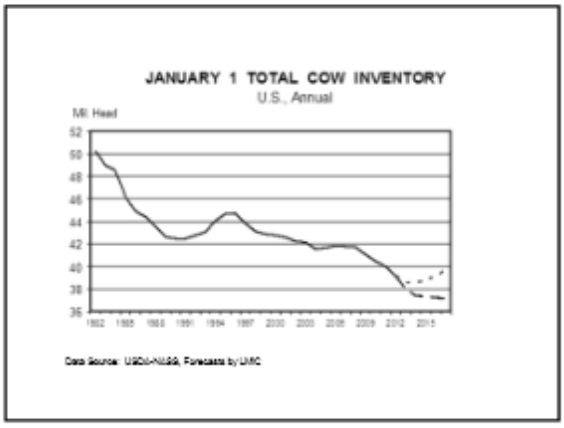
CHANGE IN BEEF COWS NUMBERS JANUARY 1, 2011 TO JANUARY 2012

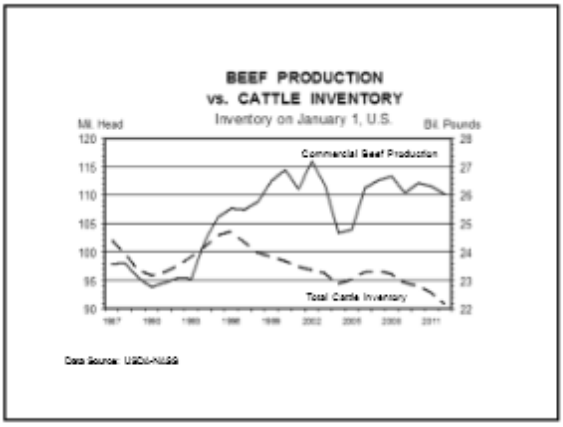
(1000 Head)

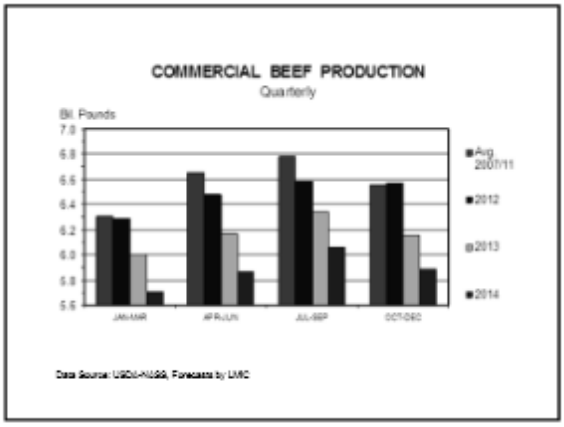


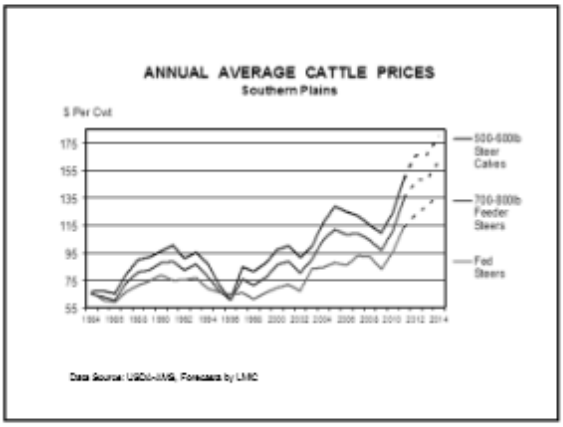
Data Source: USDA-NASS

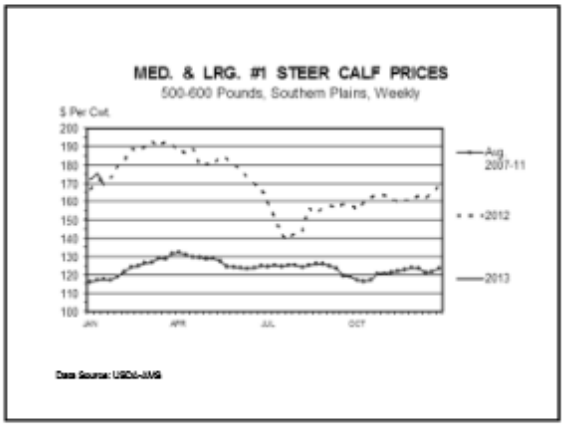

HEIFERS HELD AS BEEF
COW REPLACEMENTS
July 1, U.S.
Mil. Head


JANUARY 1 TOTAL COW INVENTORY
U.S., Annual
Mil. Head


BEEF PRODUCTION
vs. CATTLE INVENTORY
Inventory on January 1, U.S.
Mil. Head
Bil. Pounds
Commercial Beef Production
Total Cattle Inventory

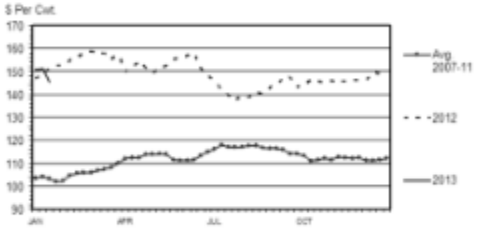

COMMERCIAL BEEF PRODUCTION
Quarterly
Bil. Pounds
Avg 2007/11
2012
2013
2014


ANNUAL AVERAGE CATTLE PRICES
Southern Plains
$ Per Cwt
500-600lb Steer Calves
700-800lb Feeder Steers
Fed Steers


MED. & LRG. #1 STEER CALF PRICES
500-600 Pounds, Southern Plains, Weekly
$ Per Cwt
Avg 2007-11
2012
2013

MED. & LRG. #1 FEEDER STEER PRICES

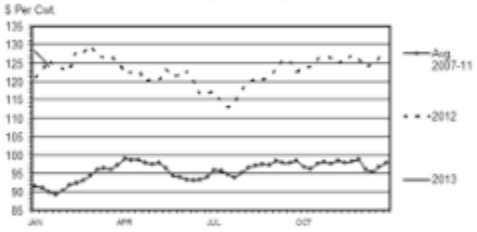
700-800 Pounds, Southern Plains, Weekly



Data Source: USDA-AMS

SLAUGHTER STEER PRICES

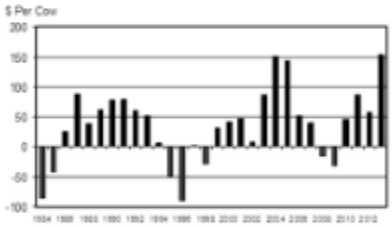
5 Market Weighted Average, Weekly



Data Source: USDA-AMS

ESTIMATED AVERAGE COW CALF RETURNS

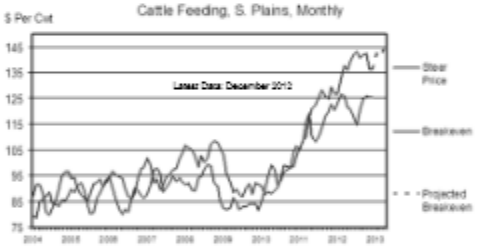
Returns Over Cash Cost (Includes Pasture Rent), Annual



Data Source: USDA-AMS, NASS, Analysis and Forecasts by LMIC

CHOICE STEER PRICE vs BREAKEVEN

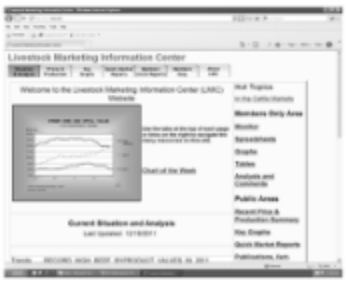
Cattle Feeding, S. Plains, Monthly



Data Source: USDA-AMS, NASS, Analysis and Forecasts by LMIC

Economic Environment ….

- Domestic Consumer Demand has Stabilized and is Slowly Improving for Red Meats. Recession versus +3% GDP Growth?
- Foreign Beef Demand Strong but Slipping
- Price Volatility Will Continue (Globalization, Ethanol, etc.)
- Market Shocks Will Continue (9-11-2001; BSE; 2008 Credit Crisis)
- Market Segmentation Accelerating
- Economic Incentive to Grow U.S. Cowherd Overcome by Drought
- Controls Already Set to Dramatically Reduced Beef Output
- High Feedstuff Price Range Expected to Continue
- Headwind to Calf and Yearling Prices -- Compressed Margins for Cattle Feeders and Beef Packers
- Mistakes Are Costly, Sound Business Practices Required
- Agile Firms Will Benefit…. **Be Adaptable NOT Adapted**
- Management is a Sequential Decision-Making Process, **Especially In Drought**



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Thank You!

LMIC
Livestock Marketing Information Center

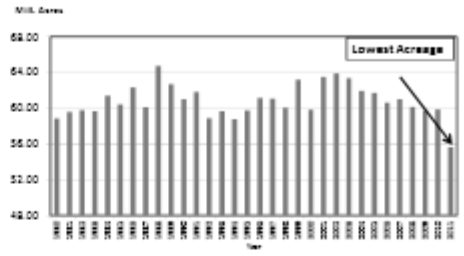
Market Outlook for Dairy and Hay

2013 Ag Outlook Conference

Katelyn McCullock
Dairy & Forage Economist
Livestock Marketing Information Center

2/13/2013

ALL HAY ACRES



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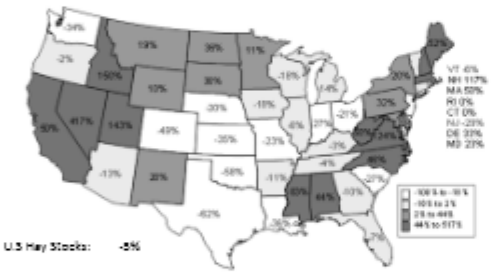
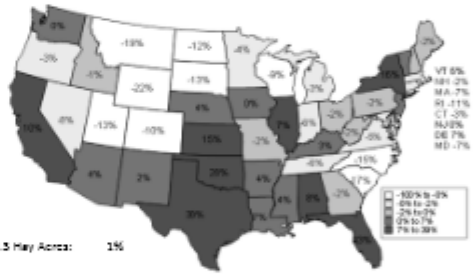
PERCENT CHANGE MAY 1 HAY STOCKS
(2012-2011)



U.S Hay Stocks: -5%

Livestock Marketing Information Center

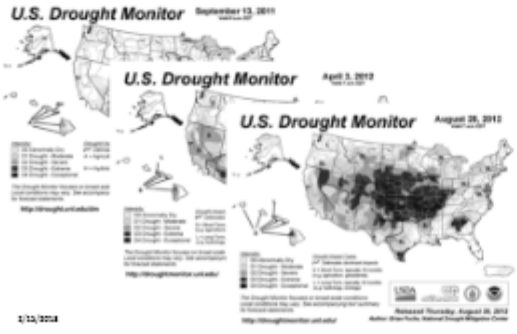
PERCENT CHANGE ALL HAY ACRES
(2012-2011)



U.S Hay Acres: 1%

Livestock Marketing Information Center

2nd Round of Drought

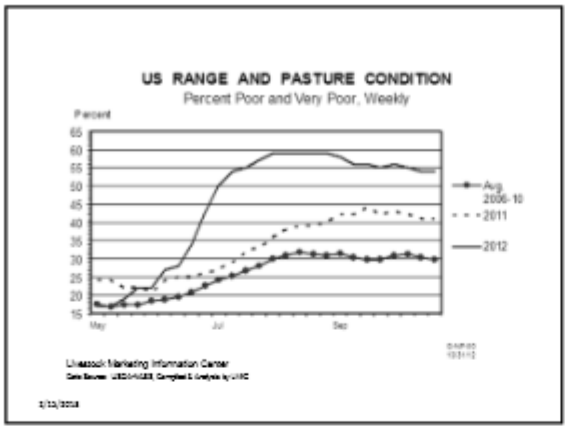


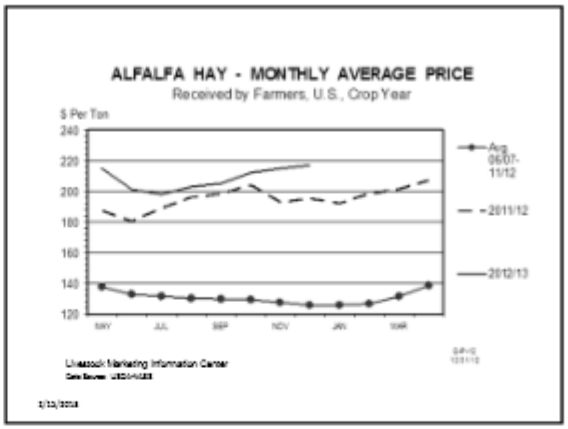
2/13/2013

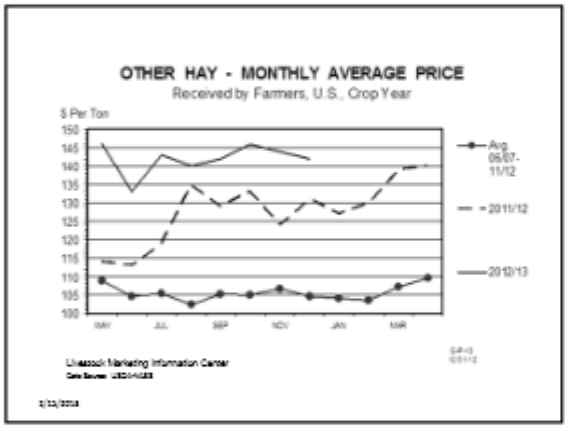
Yields

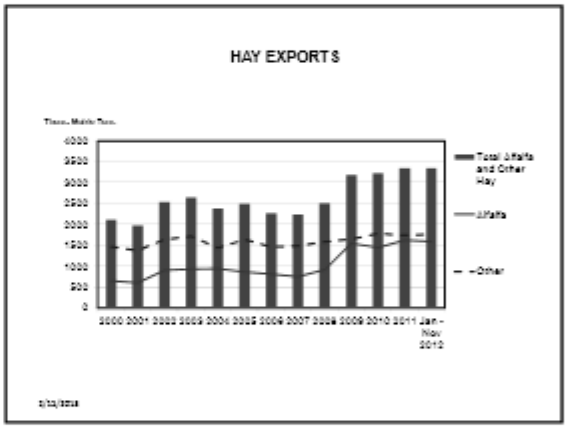
- 2011: All Hay yields nationally declined 2.8%
  - Other Hay, -7%. Alfalfa: Nationally unaffected
  - Isolated to the Southern Plains: Nearly 50% yield loss on 6.2 million acres (Texas & Oklahoma).
- 2012: All Hay Yields declined 9.7%.
  - 6 states experienced yield losses of 20% or more.
  - The number of states posting year on year yield declines doubled. (30 vs 15)

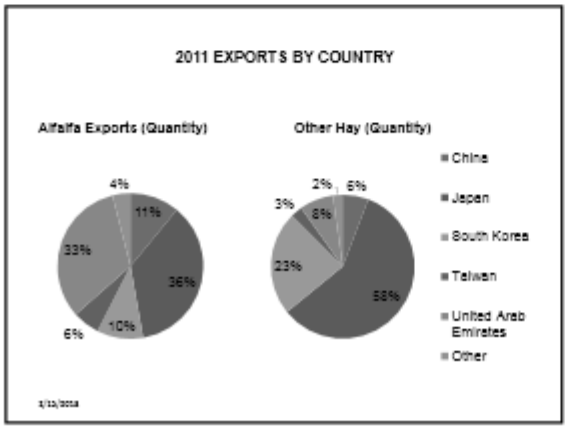
2/13/2013

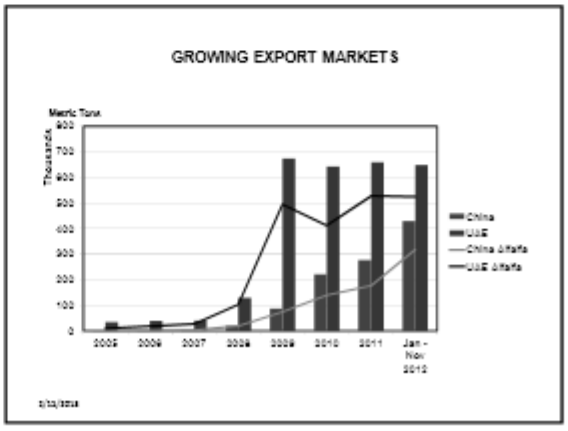

US RANGE AND PASTURE CONDITION
Percent Poor and Very Poor, Weekly
Percent
Avg. 2006-10
2011
2012
May
Jul
Sep
Livestock Marketing Information Center


ALFALFA HAY - MONTHLY AVERAGE PRICE
Received by Farmers, U.S., Crop Year
$ Per Ton
Avg. 06/07-11/12
2011/12
2012/13
MAY
JUL
SEP
NOV
JAN
MAR
Livestock Marketing Information Center


OTHER HAY - MONTHLY AVERAGE PRICE
Received by Farmers, U.S., Crop Year
$ Per Ton
Avg. 06/07-11/12
2011/12
2012/13
MAY
JUL
SEP
NOV
JAN
MAR
Livestock Marketing Information Center


HAY EXPORTS
Total Alfalfa and Other Hay
Alfalfa
Other
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 Jan - Nov 2012

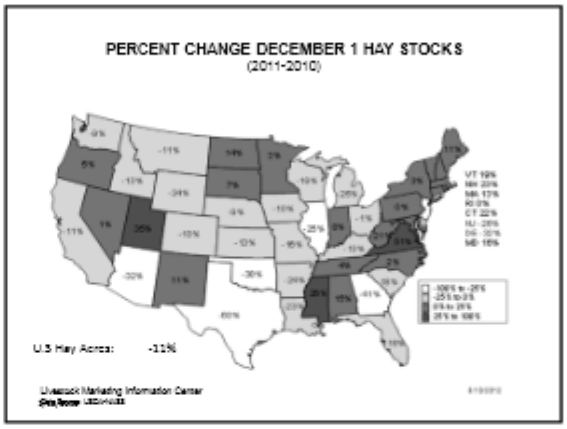

2011 EXPORTS BY COUNTRY
Alfalfa Exports (Quantity)
Other Hay (Quantity)
China
Japan
South Korea
Taiwan
United Arab Emirates
Other
4%
11%
33%
36%
6%
10%
2%
6%
3%
8%
23%
58%

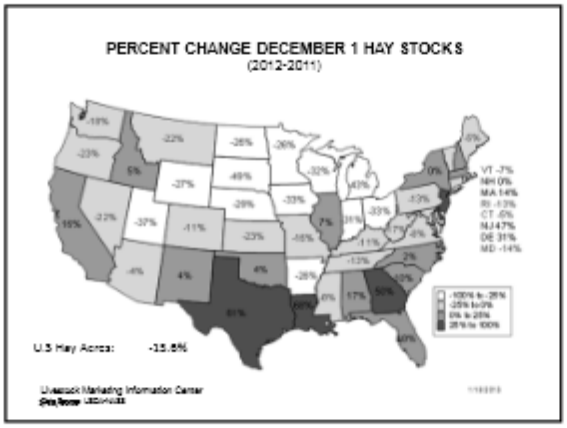

GROWING EXPORT MARKETS
Metric Tons
Thousands
China
UAE
China Alfalfa
UAE Alfalfa
2005
2006
2007
2008
2009
2010
2011
Jan - Nov 2012

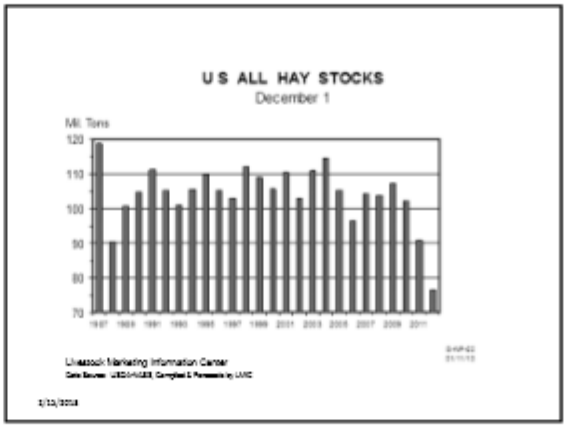
Finishing out 2012/13

- Hay domestic consumers rationed the 2011/2012 hay crop.
  - Lowest disappearance since the late '70s.
- Smaller supply of 2012/13 has already pushed record high prices.
- The remainder of the crop year will likely be steady to higher in both alfalfa and other hay.

1/13/2013



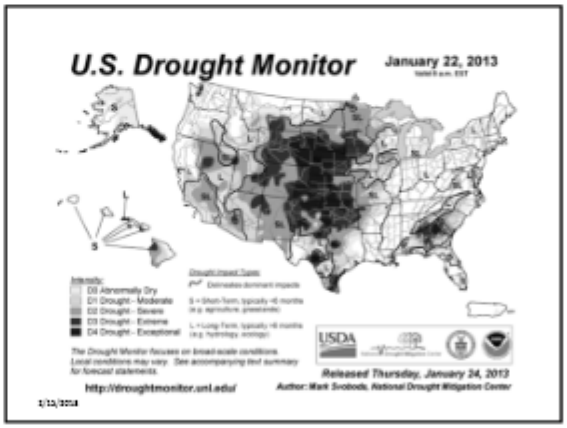




Looking ahead to 2013/2014

- The hay situation is more tenuous than in 2012/13.
  - Record low stocks, and record high prices
  - Competition from other cash crops will likely hold additional hay acres to a minimum.
- Weather: Another drought will bring about another year of very high/record high prices.
- Prices will likely only soften with a normal yield and more normal pasture and range conditions.

1/13/2013



Forecasts

ALL HAY SUPPLY AND DEMAND BALANCE SHEET
U.S., Annual

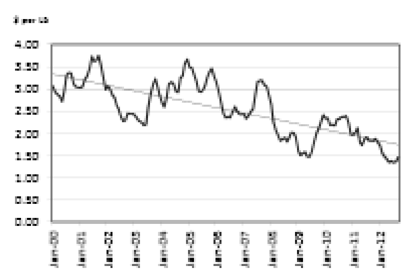
Year Beginning May 1	Stocks May 1	Production Alfalfa	Production Total	Total Supply	Disappearance	Ending Stocks	Acres Harvested	Yield	Season Average Price	RCAU[1]	Supply per RCAU	Disap. per RCAU
	Million Tons						Mil. Acres	Ton/Acre	$/Ton	Million		
2006/07	21.3	70.5	140.8	162.1	147.1	15.0	60.60	2.32	110.00	71.8	2.26	2.05
2007/08	15.0	69.9	146.9	161.9	140.3	21.6	61.01	2.41	127.00	71.5	2.26	1.96
2008/09	21.6	70.2	146.3	167.9	145.8	22.1	60.15	2.40	152.00	70.8	2.37	2.06
2009/10	22.1	71.1	147.7	169.8	146.8	22.9	59.75	2.47	108.00	70.4	2.41	2.11
2010/11	22.9	68.0	145.5	168.5	144.3	22.2	59.87	2.43	114.00	69.3	2.40	2.08
2011/12	22.2	65.3	131.2	153.4	132.0	21.5	55.65	2.36	176.00	67.8	2.26	1.94
2012/13[2]	21.4	62.0	119.9	141.3	128.0	15.3	56.28	2.13	190.00	67.2	2.10	1.87
2013/14[3]	15.3	65.0	133.9	154.2	133.0	21.2	55.50	2.35	187.00	67.3	2.29	1.98

[1] Roughage Consuming Animal Unit
[2] Projections [3] Forecasts

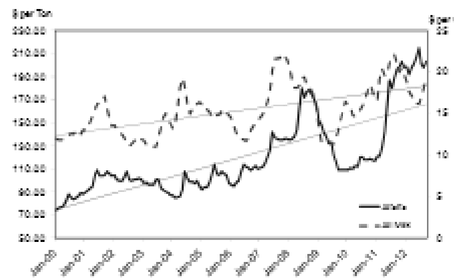
Dairy Outlook

- Dairy Outlook hinges on profitability and adaptability.
  - Feed Costs
  - Continued export demand to support prices

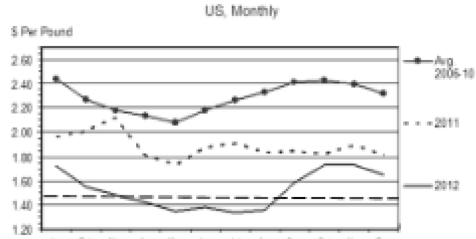
MILK FEED RATIO OVER TIME



FEED PRICES HAVE INCREASED FASTER THAN MILK PRICES

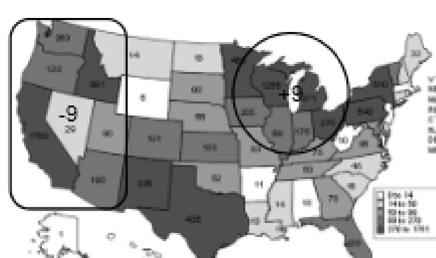


MILK-FEED PRICE RATIO
US, Monthly

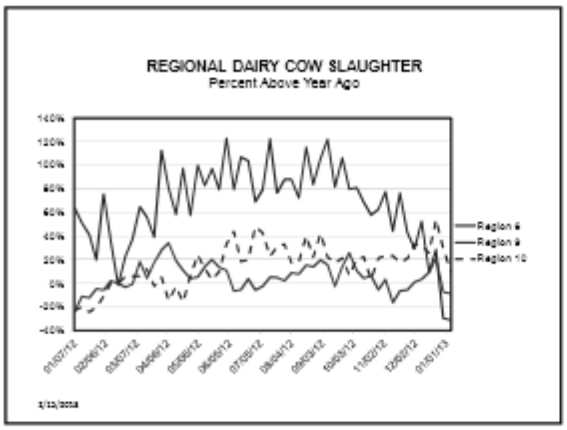


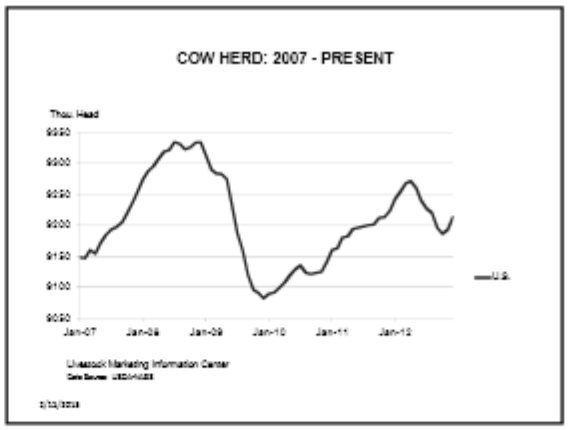
Livestock Marketing Information Center
Data Source: USDA-NASS

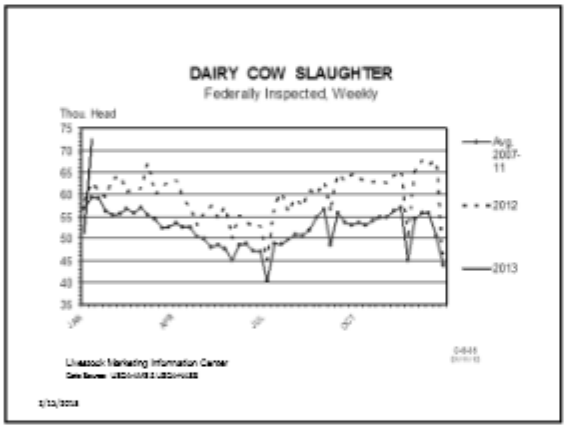
MILK COWS THAT HAVE CALVED JANUARY 1, 2012
(1000 Head)

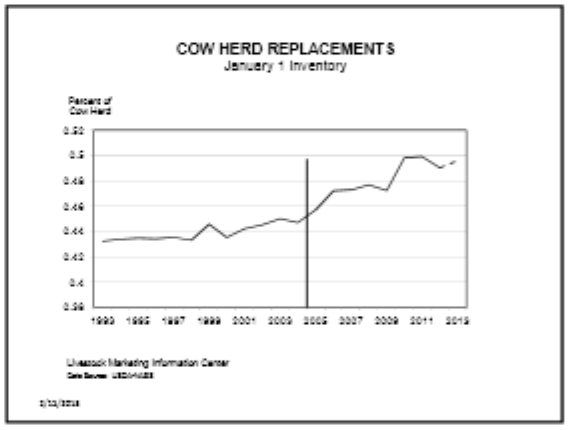


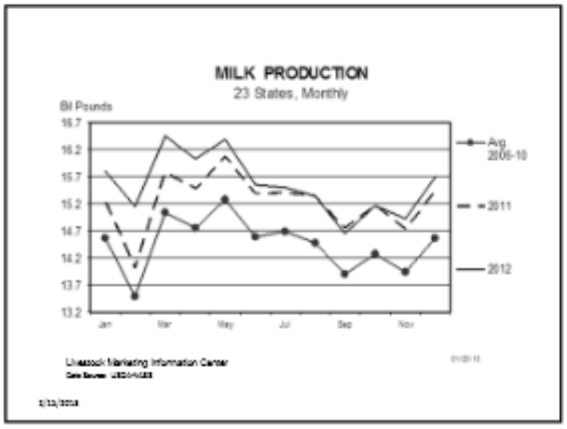
Livestock Marketing Information Center
Data Source: USDA-NASS

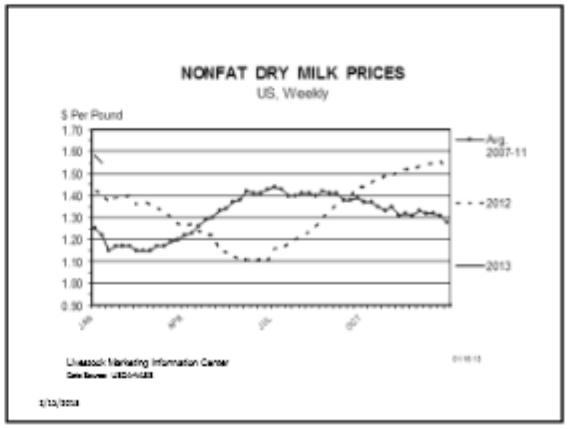

REGIONAL DAIRY COW SLAUGHTER
Percent Above Year Ago
Region 4
Region 8
Region 10


COW HERD: 2007 - PRESENT
Thou. Head
U.S.
Livestock Marketing Information Center

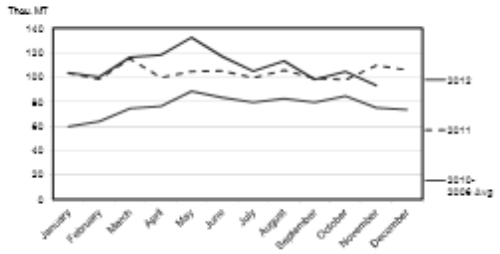

DAIRY COW SLAUGHTER
Federally Inspected, Weekly
Thou. Head
Avg. 2007-11
2012
2013
Livestock Marketing Information Center


COW HERD REPLACEMENTS
January 1 Inventory
Percent of Cow Herd
Livestock Marketing Information Center


MILK PRODUCTION
23 States, Monthly
Bil Pounds
Avg. 2006-10
2011
2012
Livestock Marketing Information Center

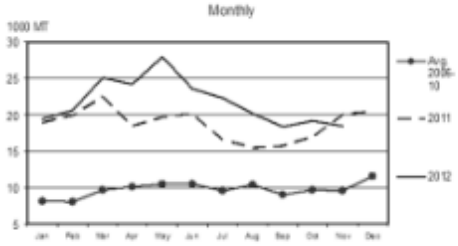

NONFAT DRY MILK PRICES
US, Weekly
$ Per Pound
Avg. 2007-11
2012
2013
Livestock Marketing Information Center

INTERNATIONAL EXPORTS



CHEESE AND CURD EXPORTS

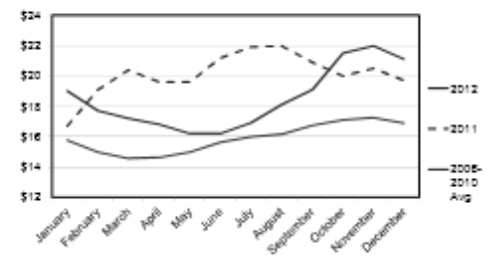
Monthly



Livestock Marketing Information Center

ALL MILK PRICE

U.S. National Price, $ per cwt



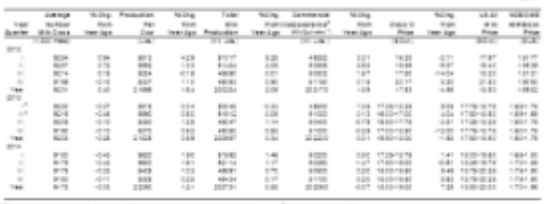
Livestock Marketing Information Center

Key Drivers 2013 and Beyond

- The cow herd is increasing while feed costs haven not lessened.
- Increases in production will result in weigh on prices for the next several months.
- Tight margins will likely continue, resulting in a shrinking to steady cow herd for the next few years.
- A continued drought in the Midwest would likely lead to liquidation in the dairy herd over the summer of 2013.

Forecasts

U.S. QUARTERLY MILK PRODUCTION, COMMERCIAL DISAPPEARANCE, AND SELECTED PRICES*



Questions

Katelyn McCullock
Dairy and Forage Economist
Livestock Marketing Information Center

Website: www.lmic.info
Katelyn.mccullock@lmic.info
Phone: 303-236-0467

The Latest and Greatest in Forage Production

Biographical Information:

Earl Creech
Utah State University

Earl Creech is an Assistant Professor and Extension Agronomist in the Department of Plants, Soils, and Climate at Utah State University, a position he has held since 2010. Earl grew up on a family livestock and crop production farm near Logan, Utah and received his B.S. and M.S. degrees from Utah State University before acquiring his Ph.D. from Purdue University. Upon graduating from Purdue, he was an Assistant Professor and Extension Weed Specialist at the University of Nevada, Reno for three years before accepting his current position at Utah State University.

In his research and Extension efforts at Utah State University, Earl works to address critical agronomic issues facing farmers and ranchers in Utah and throughout the West. He has been invited to teach various aspects of field crop and forage production at field days, workshops, conferences, and short courses across the West. He has also written numerous publications for scientific and Extension audiences.

Session Description:

We will discuss the most recent Utah State University research results in forage crops, including alfalfa, corn, small grains, teff, soybean, and sorghum.

Using Social Media to Increase Your Sales

Biographical Information:

Paul Hill
Utah State University Extension

Paul Hill is an Assistant Professor at Utah State University Extension in Washington County. He holds a Bachelor of Science degree from Dixie State College and an M.B.A. from Southern Utah University. His interests of research and study include leadership and collaboration using new technologies, brand management, and social media marketing. Paul enjoys public speaking, web development, blogging, canyoneering, reading and of course 4-H! He and his wife have two sons and currently reside in Hurricane, Utah.

Nate Palmer
CentraCom Interactive

Nate Palmer is the Vice President, Marketing for CentraCom Interactive. CentraCom is the telecommunications provider for Sanpete, Sevier and Juab Counties and also serves southern Utah County, Wendover, Bear Lake and Dugway. He develops and implements marketing strategies to acquire new subscribers to Telephone, Internet and Cable TV services. He also creates and produces advertising for print, video and web mediums and manages a local origination cable TV channel including creating original television shows and working with other content providers to make a viably competitive local channel. Currently Nate is the owner of Pleasant Valley Beef. Pleasant Valley Beef markets natural beef raised on his family ranch, direct to consumer throughout Utah and surrounding states. He also is expanding his operation by developing partnerships with beef producers to market their beef through his distribution channels.

Session Description:

As an agricultural producer you can influence the agricultural movement by using social media platforms to educate consumers, dispel myths, and tell your farm story. It's no secret that there's a huge disconnect between farmers and consumers. It's now your time to take a seat at the table and answer the questions consumers have about where their food comes from. We'll teach you how to devise your own social media strategy to share your farm story, market your unique products, and build genuine relationships with consumers so they'll buy your stuff!

To view this presentation, please go to:

http://goo.gl/W6wv5

Or

The QR code to the presentation

Connecting Supply and Demand Fluctuations to Prices

Biographical Information:

Dillon Feuz
Utah State University, Department of Applied Economic

Dillon Feuz has been an agricultural economics professor at the Utah State University since 2006. His primary focus areas are in Livestock Marketing, and Farm & Ranch Management. He received his B.S. in Agribusiness in 1984 and his M.S. in Agricultural Economics in 1986 from the University of Wyoming and he received his Ph.D. in Agricultural Economics in 1990 from Colorado State University. He spent six years at South Dakota State University teaching marketing and conducting research on livestock production and marketing issues. He then worked for the University of Nebraska-Lincoln for ten years analyzing various cattle management and marketing strategies and evaluating consumer's willingness-to-pay for flavor preferences for beef steaks. Dillon was raised on a cattle ranch in western Wyoming.

Session Description:

Dillon will expand on price fluctuation in agricultural markets by explaining the connections between supply and demand and their relationship to commodity prices.

Sources of Market, Price, and other Agricultural information on the Web

Dillon Feuz
Applied Economics
Utah State University

Cattle and Beef Market Price information and analysis
http://cattlemarketanalysis.org/index.html

Utah State University, Applied Economics, Extension Home Page
https://apecextension.usu.edu/

USDA – Agricultural Marketing Service
http://www.ams.usda.gov

USDA – National Agricultural Statistics Service
http://www.nass.usda.gov

USDA – Risk Management Agency
http://www.rma.usda.gov/

USDA – Economics, Statistics, and Market Information System
http://usda.mannlib.cornell.edu/MannUsda/homepage.do

Utah Department of Agriculture and Food
http://ag.utah.gov

The Chicago Mercantile Exchange Group
http://www.cmegroup.com/trading/agricultural/

Talking Turkey

Biographical Information:

Kent Christensen
Moroni Feed Company

Kent is a Utah State University Graduate in Agricultural Economics and Agricultural Business. He has 30 years agriculture production experience in poultry and beef production. He worked for 4 years as the Farm Manager for the Utah State University Turkey Research Farm and 6 years as Live Production Vice President for Moroni Feed Company.

Session Description:

Turkey Business in Utah:

Who can grow turkeys?

Requirements to grow turkeys

How are turkeys, feed, and finished product bought and sold.

Why grow turkeys?

Game Birds Operation

Biographical Information:

Keith Hicken
Pleasant Valley Hunting Preserve

Keith and Nerissa Hicken have three children. Keith served an LDS mission in the Southern Philippines. He has farmed all his life and bought his own farm in a small farming community called Pleasant Valley, Utah at the age of 22. In the early 1980's, his father and he almost went broke running a dairy with high interest rates, high commodity prices and poor milk prices. He looked for something else to do to supplement his income. He finally found it and has been raising and releasing pheasants for sportsmen since 1987.

Session Description:

Keith will be speaking about some options for farmers and ranchers, as well as other topics.

1. Some of his history
2. Agricultural Diversification
3. Sod Operations
4. Pheasant Operations
5. Questions/Answers

How will the Food Safety Modernization Act of 2011 affect your on-farm food processing?

Biographical Information:

Karin Allen, PhD
Utah State University

Karin Allen is the USU Extension Food Quality & Entrepreneurship Specialist. The Food Quality & Entrepreneurship Program provides assistance to start-ups and existing food companies of all sizes, including regulatory information, nutrition facts, formulation assistance, and packaging and ingredient solutions.

Session Description:

This presentation explains the proposed rule issued by the FDA in January 2013, including the expanded definition of “harvesting,” the proposed definitions of “small” and “very-small” businesses, and the on-farm processing activities identified as low-risk. The potential impact, facility registration requirements, and record keeping requirements will be discussed. The public comment period on this proposed rule is open through May 2013, so participants will have ample time to voice concerns to the FDA prior to the issuance of a final rule.

How will the Food Safety Modernization Act of 2011 affect your on-farm food processing?

Below are excerpts of the proposed rule issued by the FDA in the Federal Register (January 2013). These sections were chosen because they are most likely to apply to farms that are processing food products, and may affect your current on-farm activities. If you would like to review the proposed rule in more detail, it can be downloaded as a .pdf file (176 pages, 1.06MB) here:

www.regulations.gov/#!documentDetail;D=FDA-2011-N-0920-0001

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Food and Drug Administration
21 CFR Parts 1, 16, 106, 110, 114, 117,120, 123, 129, 179, and 211
[Docket No. FDA–2011–N–0920]
RIN 0910–AG36
Current Good Manufacturing Practice and Hazard Analysis and Risk-Based Preventive Controls for Human Food
AGENCY: Food and Drug Administration, HHS.
ACTION: Proposed rule.

SUMMARY: The Food and Drug Administration (FDA) is proposing to amend its regulation for Current Good Manufacturing Practice In Manufacturing, Packing, or Holding Human Food (CGMPs) to modernize it and to add requirements for domestic and foreign facilities that are required to register under the Federal Food, Drug, and Cosmetic Act (the FD&C Act) to establish and implement hazard analysis and risk-based preventive controls for human food. FDA also is proposing to revise certain definitions in FDA's current regulation for Registration of Food Facilities to clarify the scope of the exemption from registration requirements provided by the FD&C Act for ''farms.'' FDA is taking this action as part of its announced initiative to revisit the CGMPs since they were last revised in 1986 and to implement new statutory provisions in the FD&C Act. The proposed rule is intended to build a food safety system for the future that makes modern, science-, and risk-based preventive controls the norm across all sectors of the food system.

DATES: Submit either electronic or written comments on the proposed rule by May 16, 2013.

ADDRESSES: You may submit comments, identified by Docket No. FDA–2011–N–0920 and/or RIN 0910–AG36, by any of the following methods.

Electronic Submissions
Submit electronic comments in the following way:
Federal eRulemaking Portal: *http://www.regulations.gov*. Follow the instructions for submitting comments.

Written Submissions
Submit written submissions in the following ways:
FAX: 301–827–6870.
Mail/Hand delivery/Courier (for paper or CD–ROM submissions):
Division of Dockets Management (HFA–305)
Food and Drug Administration
5630 Fishers Lane, rm. 1061
Rockville, MD 20852.

Instructions: All submissions received must include the Agency name and Docket No. for this rulemaking. All comments received may be posted without change to *http://www.regulations.gov*, including any personal information provided.

Executive Summary

Purpose and Coverage of the Proposed Rule

The proposed rule would revise FDA's current good manufacturing practice (CGMP) regulations regarding the manufacturing, processing, packing, or holding of human food in two fundamental ways. First, it would add new preventive controls provisions as required by the FDA Food Safety Modernization Act (FSMA)…Second, the proposed rule would update, revise, or otherwise clarify certain requirements of our CGMP regulations, which were last updated in 1986. In addition, this proposed rule would clarify the scope of the exemption for ''farms'' in FDA's current food facility registration regulations and make corresponding clarifications to FDA's current regulations for the establishment, maintenance, and availability of records. These clarifications would affect who would be subject to the current regulations for registration and recordkeeping as well as the new preventive controls requirements that would be established by this proposed rule…

Summary of the Major Provisions of the Proposed Rule

The proposed rule would implement the requirements of FSMA for covered facilities to establish and implement a
food safety system that includes a hazard analysis and risk-based preventive controls. Specifically, the proposed rule would establish requirements for:

- A written food safety plan;
- Hazard analysis;
- Preventive controls for hazards that are reasonably likely to occur;
- Monitoring;
- Corrective actions;
- Verification; and
- Associated records.

… The proposed rule would also establish a series of exemptions (including modified requirements in some cases) from the requirements for hazard analysis and preventive controls. Facilities that manufacture, process, pack or hold food and that are required to register with FDA under section 415 of the FD&C Act would be required to comply with the proposed regulation unless they are covered by an exemption. The table immediately below summarizes these proposed exemptions in general terms.

PROPOSED EXEMPTIONS FROM THE NEW REQUIREMENTS FOR HAZARD ANALYSIS AND RISK-BASED PREVENTIVE CONTROLS

Who or what would be exempt from the requirements for hazard analysis and risk-based preventive controls	Notes
"Qualified Facility" as defined by FSMA:	FDA is proposing three options for defining "very small business" and requests comment on which to adopt in a final rule.
• Business with average annual sales of < $500,000 and at least half the sales to consumers or local retailers or restaurants (within the same state or within 275 miles); or.	Modified requirements would apply—i.e., a qualified facility would be required to: • Notify FDA about its status; and • Either: ○ Notify FDA that it is addressing hazards through preventive controls and monitoring; or ○ Notify FDA that it complies with applicable local regulations, and notify consumers of the name and complete business address of the facility where the food was manufactured or processed.
• Very small business. • Option 1: Average annual sales of < $250,000. • Option 2: Average annual sales of < $500,000. • Option 3: Average annual sales of <$1,000,000.	
• Low risk, on farm activities performed by small business (< 500 employees).	Small and very small on-farm businesses conducting these low risk activities would be exempt from most of the rule's requirements.
-or-	
• Low-risk, on-farm activities performed by a very small business	We would define the low-risk activities that qualify for the exemption, including the specific foods to which they relate (such as re-packing intact fruits and vegetables, or grinding/milling/cracking/crushing grains)
○ Option 1: very small = <$250,000. ○ Option 2: very small = <$500,000. ○ Option 3: very small = <$1,000,000.	

VIII. Rulemaking Required by Section 103(c) of FSMA: On-Farm Activities

F. Impact of Proposed Revisions to the Definitions in 21 CFR Part 1

6. Summary of Examples of the Impact of the Proposed Revisions to the Definitions in 21 CFR Part 1 on a Farm or Farm Mixed-Type Facility

For the convenience of the reader, Table 5 summarizes the examples discussed in sections VIII.F.2 through VIII.F.5 of this document.

TABLE 5—SUMMARY OF THE EXAMPLES OF THE IMPACT OF THE PROPOSED REVISIONS TO THE DEFINITIONS IN 21 CFR PART 1 ON A FARM OR FARM MIXED-TYPE FACILITY

Activity	How does FDA classify the activity under the *current* definitions in §§ 1.227 and 1.328?	Using FDA's *current* classification, would conducting the activity trigger the section 415 registration regulations?	How would FDA classify the activity under the *proposed* revisions to the definitions in §§ 1.227 and 1.328?	Using the classification under the *proposed* revised definitions, would conducting the activity trigger the section 415 registration regulations?	Would the classification under the *proposed* revised definitions represent a change?
Application of Pesticide					
Applying pesticides to own RACs prior to harvest.	Growing within the farm definition (because it is an integral part of growing crops).	No	Growing within the farm definition (because it is an integral part of growing crops).	No	No.
Fumigating own raw nuts to prevent insect infestation and damage during the potentially long storage period of the nuts.	Manufacturing/processing outside the farm definition (because application of pesticides after harvest is necessarily directed at the food, not the entire plant).	Yes	Holding within the farm definition (for the purpose of safe or effective storage).	No	Yes.
Use of pesticides in wash water applied to own RACs.	Harvesting within the farm definition if water is from a public or other supply chlorinated for other purposes, or if chlorine is added at 200 ppm or less (washing that does not treat the crop); manufacturing/processing outside the farm definition if chlorine is added at levels above 200 ppm.	Depends on source and level of chlorine in water; FDA has not previously addressed chemicals other than chlorine.	Harvesting within the farm definition (washing and/or treating against pests for the purpose of removing the crop from the growing area and preparing it for use as food).	No	Yes.
Coating					
Applying coatings to own RACs (e.g., applying waxes, oils, and resins to fresh produce; coating raw nuts in chocolate; coating apples in caramel).	Manufacturing/processing outside the farm definition (waxing generally, not specific to fresh produce).	Yes, for waxing generally; FDA has not previously addressed other coatings.	Waxes, oils, and resins on fresh produce: Packing within the farm definition (for the purpose of protecting them during storage or transport, and not to create a distinct commodity); Chocolate on nuts or caramel on apples: Manufacturing/processing outside the farm definition (creates a distinct commodity and thus creates a processed food).	Waxes, oils, and resins on fresh produce: No. Chocolate on nuts or caramel on apples: Yes	Yes.
Drying					
Drying peppermint naturally during storage in a barn.	Storage within the farm definition.	No	Manufacturing/processing outside the farm definition (transforms a RAC into a processed food).	Yes	Yes.
Drying hay naturally or artificially.	Harvesting within the farm definition (an essential part of harvesting hay to prevent spontaneous combustion).	No	Packing or holding within the farm definition (depending on whether the drying is before storage or during storage).	No	No.
Drying alfalfa	Harvesting within the farm definition (traditionally performed during the removing of the crop from the field through the safe storage of the crop).	No	Packing within the farm definition (done before storage to prepare a RAC for storage or transport and does not create a distinct commodity).	No	No.
Drying grapes to create raisins.	FDA has not previously addressed this activity.	FDA has not previously addressed this activity.	Manufacturing/processing outside the farm definition (transforms a RAC into a processed food).	Yes	Yes (because FDA is addressing this activity for the first time).

H. Results of the Qualitative Risk Assessment

In this section, we report the results of the section 103(c)(1)(C) draft RA*, arranged in three lists. References to ‘‘farms’’ in these lists should be understood to include farm mixed-type facilities. The lists are shaped by the proposed definitions for harvesting, manufacturing/processing, packing, or holding in the section 415 registration regulations (discussed in section VIII.E of this document), the organizing principles (discussed in section VIII.D of this document) that form the basis for those proposed definitions, and the examples of activity classifications (discussed in section VIII.F of this document). As discussed in section VIII.E of this document, the same activity may be classified differently (among the categories of harvesting, manufacturing/ processing, packing, or holding) depending on whether the food being operated upon is a RAC and whether the RAC was grown or raised on the farm or farm mixed-type facility performing the activity or a farm under the same ownership. **We request comment on the lists in sections VIII.H.1 through VIII.H.3.**

1. List of Low-Risk On-Farm Packing and Holding Activity/Food Combinations When Conducted on Food Not Grown, Raised, or Consumed on That Farm or Another Farm Under the Same Ownership

The section 103(c)(1)(C) draft RA identified the following low-risk packing and holding activity/food combinations when conducted on a farm on food not grown, raised, or consumed on that farm or another farm under the same ownership—i.e., packing or re-packing (including weighing or conveying incidental to packing or re-packing); sorting, culling, or grading incidental to packing or storing; and storing (ambient, cold and controlled atmosphere) of:

- Hard candy, fudge, taffy, and toffee;
- Cocoa products;
- Cocoa beans and coffee beans (raw or roasted);
- Grains and grain products;
- Honey (raw and pasteurized);
- Intact fruits and vegetables;
- Jams, jellies and preserves;
- Maple sap for syrup and maple syrup;
- Peanuts and tree nuts;
- Soft drinks and carbonated water; and
- Sugar beets, sugarcane, and sugar.

2. List of Low-Risk On-Farm Manufacturing/Processing Activity/ Food Combinations When Conducted on the Farm’s Own Raw Agricultural Commodities for Distribution Into Commerce

The section 103(c)(1)(C) draft RA identified the following low-risk manufacturing/processing activity/food combinations when conducted on a farm on the farm’s own RACs for distribution into commerce:

- Artificial ripening of intact fruits and vegetables;
- Boiling/evaporation of maple sap to make maple syrup;
- Chopping raw peanuts and raw tree nuts;
- Coating (with coatings other than wax, oil, or resin used for the purpose of storage or transportation) intact fruits and vegetables (e.g., caramel apples) and raw peanuts and raw tree nuts (e.g., adding seasonings);
- Drying/dehydrating intact fruits and vegetables (without the addition of sulfites) where the drying creates a distinct commodity (e.g., drying fruits or herbs);
- Extracting oil from grains;
- Grinding/milling/cracking/crushing grains (e.g., making grain products such as corn meal) and raw peanuts or raw tree nuts (e.g., making ground peanuts);
- Making jams, jellies and preserves from acid foods (e.g., acid fruits);
- Making sugar from sugarcane and sugar beets; and
- Salting raw peanuts and raw tree nuts.

3. List of Low-Risk On-Farm Manufacturing/Processing Activity/ Food Combinations When Conducted on Food Other Than the Farm’s Own Raw Agricultural Commodities, for Distribution Into Commerce

The section 103(c)(1)(C) draft RA identified the following low-risk manufacturing/processing activity/food combinations when conducted on a farm on food other than the farm’s own RACs, for distribution into commerce.

- Artificial ripening of intact fruits and vegetables;

- Chopping peanuts and tree nuts;
- Coating (with coatings other than wax, oil, or resin used for the purpose of storage or transportation) intact fruits and vegetables (e.g., caramel apples) and peanuts and tree nuts (e.g., adding seasonings);
- Cooling intact fruits and vegetables using cold air;
- Drying/dehydrating (whether for storage/transport or for creating a distinct commodity) intact fruits and vegetables (without sulfiting), cocoa beans, coffee beans, grains and grain products, and peanuts and tree nuts;
- Extracting oils from grains (e.g., corn, oilseeds, soybeans);
- Fermenting cocoa beans and coffee beans;
- Grinding/milling/cracking/crushing cocoa beans, coffee beans, grains (e.g., making grain products such as corn meal), and peanuts and tree nuts (e.g., making ground peanuts);
- Labeling (including stickering) hard candy, cocoa beans, cocoa products from roasted cocoa beans (other than milk chocolate), coffee beans, intact fruits and vegetables, grain and grain products (other than those containing wheat in a form that would not be
- recognized as containing wheat without a label declaration), honey, jams/jellies/preserves, maple sap, maple syrup, intact single-ingredient peanuts or tree nuts (shelled and unshelled), soft drinks and carbonated beverages, sugar beets, sugarcane, and sugar;
- Making hard candy, fudge, taffy, and toffee;
- Making cocoa products from roasted cocoa beans;
- Making honey;
- Making jams, jellies and preserves from acid foods (e.g., acid fruits);
- Making maple syrup;
- Making soft drinks and carbonated water;
- Making sugar from sugar beets and sugarcane;
- Mixing cocoa beans, coffee beans, intact fruits and vegetables, grain and grain products, honey, maple sap and maple syrup, and peanuts and tree nuts;
- Packaging hard candy, fudge, taffy, and toffee; cocoa beans; cocoa products; coffee beans; intact fruits and vegetables (other than modified atmosphere or vacuum packaging); grain and grain products; honey; jams, jellies and preserves; maple syrup; peanuts and
- tree nuts (including modified atmosphere or vacuum packaging); soft drinks and carbonated water; and sugar beets, sugarcane, and sugar;
- Salting peanuts and tree nuts;
- Shelling/hulling cocoa beans (i.e., winnowing), intact fruits and vegetables (e.g., dried beans and peas), and peanuts and tree nuts; Sifting grains and grain products;
- Sorting, culling and grading (other than when incidental to packing or storage) hard candy, fudge, taffy, and toffee; cocoa beans; cocoa products; coffee beans; intact fruits and vegetables; grain and grain products; honey; jams, jellies and preserves; maple sap; maple syrup; peanuts and tree nuts; soft drinks and carbonated water; and sugar beets and sugarcane;
- Treating cocoa beans, coffee beans, intact fruits and vegetables, grain and grain products, and peanuts and tree nuts against pests (other than during growing) (e.g., fumigation); and
- Waxing (wax, oil, or resin used for the purpose of storage or transportation) intact fruits and vegetables.

I. Tentative Conclusions Regarding On-Farm Low-Risk Activity/Food Combinations Under Section 418 of the FD&C Act

Based on the results of the section 103(c)(1)(C) draft RA regarding on-farm low-risk activity/food combinations, we are proposing in § 117.5(g) and (h) to exempt farm mixed-type facilities that are small or very small businesses (as defined in proposed § 117.3) from requirements under section 418 of the FD&C Act if the only activities subject to section 418 that the business conducts are low-risk activity/food combinations.

*If you are interested in reading the Risk Assessment conducted for the FDA, it can be downloaded here as a .pdf file (95 pages, 0.66MB):

www.fda.gov/Downloads/Food/ScienceResearch/ResearchAreas/RiskAssessmentSafetyAssessment/UCM334110.pdf

Common Vitamin and Mineral Deficiencies and How They Affect Production in Cattle of the Intermountain West

Biographical Information:

Jeffery O. Hall, D.V.M., Ph.D., Diplomat A.B.V.T.
Utah State University, Utah Veterinary Diagnostic Laboratory

Dr. Jeffery Hall is a Full Professor at Utah State University, College of Agriculture, in the Animal, Dairy, and Veterinary Sciences Department. He also holds an appointment in the Utah Veterinary Diagnostic Laboratory (UVDL), as the Head of Diagnostic Toxicology. Dr. Hall has B.S. in Agriculture Economics – Farm and Ranch Management and a Doctorate of Veterinary Medicine from Oklahoma State University. He completed an internship, residency, and a Ph.D. in investigational and forensic veterinary toxicology from the University of Illinois. He is a licensed Veterinarian and Board Certified in Veterinary Toxicology. His ongoing research interests include natural toxins and mineral toxicology/deficiency. He is actively involved with the research at the USDA Poisonous Plant Research Laboratory and the Utah State University Antiviral Institute as the pharmakokineticist/toxicokineticist. In his role as the toxicologist at the UVDL, for the past 16 years, he analyzed thousands of forage, diet, tissue, and bodily fluid samples, nationwide, for mineral content in order to determine deficiencies and poisonings.

Trivia: Dr. Hall comes from a cow-calf operation in Cement, Oklahoma. He has coached the Utah State University Rodeo Team for the past 16 years and was a past professional competitor in bareback riding (7 years), saddle bronc riding (5 years) and bull riding (19 years).

Session Description:

Dr. Hall will discuss common deficiencies, health effects of the deficiencies, how to test for deficiencies, how the deficiencies influence production/profitability, and means of correcting the deficiencies

Diagnosing Common Vitamin and Mineral Deficiencies

Jeffery O. Hall, D.V.M., Ph.D., Diplomat A.B.V.T.
Utah Veterinary Diagnostic Laboratory
Department of Animal, Dairy, and Veterinary Sciences
Utah State University

Introduction

Many minerals and vitamins have been proven in research studies to be essential for optimal growth, physiologic function, and productivity in animals. Data from the analytical section of the Utah Veterinary Diagnostic Laboratory would indicate a significant increase in incidence of vitamin and mineral deficiencies during 2009 and 2010. Much of this increase appears to be associated with producers decreasing or completely stopping the practice of vitamin-mineral supplementation. Based on interaction with producers, common discussions are of extremely high fuel, hay, and other production factors in the fall of 2008, which resulted in searches for ways to cut input costs. A common finding with many of the diagnosed deficiencies is a lack of vitamin-mineral supplementation either long term or due to cost cutting.

Increasing incidence of adverse neonatal health effects, due to vitamin or mineral deficiencies, were observed in 2009, but further increases are occurring in 2010. This continued increase is likely due to some herds which stopped supplementation in the Fall of 2008 having body reserves that allowed for healthy calves in the Spring of 2009. But continued lack of supplementation has resulted in depletion of the body reserves and poor calf health in the Spring of 2010.

This paper is directed at the health effect of common vitamin and mineral deficiencies and provides a summarization of the most commonly analyzed tissues and fluids that are used for diagnosing specific deficiencies. The paper also touches on immune system effects and appropriate supplementation.

Deficiency Diagnoses

Historically, testing for deficiencies has been performed on diets and/or dietary components to ensure "adequate" concentrations in the diet. However, general mineral analysis does not identify the chemical forms of these minerals, which can dramatically alter their bioavailability and utilization. In addition, certain dietary factors can alter bioavailability of certain vitamins as well.

Although not possible for some of the minerals, the most specific means of diagnosing a mineral deficiency is by testing animals for unique functional deficits or deficiencies of specific mineral containing proteins or enzymes. This type of testing is often impractical from a field perspective, due to individual test costs or rigorous sample handling requirements. But, when possible, this type of testing eliminates the need to know the specific molecular characteristics of a dietary mineral and the potential for competitive interactions of antagonistic minerals for absorption/utilization. For minerals that do not have identified physiologic indices for which testing can be performed, direct quantification from animal tissues or serum may provide a reliable indication of the overall mineral status of the animal or group.

Testing of adequacy of fat soluble vitamins is commonly achieved by testing serum or liver tissue. It is essential that serum be separated from the red blood cells soon after collection. In addition, serum should be maintained frozen and protected from sun light while being shipped to the testing laboratory.

Vitamin and mineral deficiencies can be suggestively diagnosed by the development of clinical disease or by post-mortem identification of tissue lesions. But, proof of deficiencies often requires analytical verification since most do not have very unique clinical signs or lesions. In some instances, circumstantial proof of a deficiency can be provided by positive response to supplementation of a suspected deficient vitamins or minerals. But, positive response may have nothing to do with the supplementation and may be just a time responsive correction of some other clinical condition.

An individual vitamin or mineral may have multiple means of measurement for identification of deficiencies, but most have one that is more specific than the others. For example, dietary concentrations may or may not be reflective of the amount that is bioavailable. Or, an individual tissue concentration may or may not reflect functional availability at the target or functional site.

The age of the animal being tested also is important for proper interpretation of status. For example, feti accumulate some minerals at different rates during gestation, necessitating adequate aging of the fetus for interpretation. In addition, some minerals, for which little is provided in milk, accumulate at higher concentrations during gestation in order to provide neonates with adequate body reserves for survival until they begin foraging. This is especially prevalent with copper, iron, selenium, and zinc. Thus, the "normal range" for these minerals in body storage tissues would be higher in early neonates than in an adult animal. One must be

careful to make sure that the testing laboratory is interpreting the results based on the age of the animals tested, as some laboratories try to interpret all samples as if they were from adult animals.

When individual animals are tested, the prior health status must be considered in interpreting vitamin and mineral concentration of tissues. Disease states can shift mineral from tissues to serum or serum to tissues. For example, diarrhea can result in significant loss of sodium, potassium, and calcium from the body. Or, acidosis will cause electrolyte shifts between tissues and circulating blood. It is known that infectious disease, stress, fever, endocrine dysfunction, and trauma can alter both tissue and circulating serum/blood concentrations of certain minerals and electrolytes. Thus, evaluation of multiple animals is much more reflective of mineral status within a group than testing individual animals that are ill or have died from other disease states.

Live Animal Sampling

A variety of samples are available from live animals that can be analyzed for vitamin-mineral content. The most common samples from live animals are serum and whole blood. These samples are adequate for measurement of several minerals, but it must be recognized that some disease states, as well as feeding times, can result in altered or fluctuating serum concentrations. Other samples from live animals that are occasionally used for analyses include liver biopsies, urine, and milk. But, since milk mineral content can vary through lactation, vary across lactations, and be affected by disease it is not typically used to evaluate whole animal mineral status. Furthermore, hydration status significantly affects urinary mineral concentrations, rendering it a poor sample for evaluation of mineral status. For Vitamin A and E, serum is the best sample.

Serum should be separated from the red/white blood cell clot within the 1 to 2 hours of collection. If the serum sets on the clot for long periods of time, minerals that have higher intracellular content than serum can leach into the serum and falsely increase the serum content. Minerals for which this commonly occurs include potassium and zinc. In addition, hemolysis from both natural disease and due to collection technique can result in increase serum concentrations of iron, manganese, potassium, selenium, and zinc. Vitamin A and E can begin breaking down in serum if not separated from the red blood cells and frozen within 1-2 hours of collection. Serum for vitamin A and E analysis should be stored such that breakdown from sunlight exposure does not occure.

The best type of collection tube for serum or whole blood is royal blue-top vaccutainer tubes, as they are trace-metal free. Typical red-top clot tubes will give abnormally increased results for zinc content as a zinc containing lubricant is commonly used on the rubber stoppers. For minerals other than zinc or vitamins A and E, serum samples from the typical red-top clot tubes are adequate. Similarly, serum separator tubes are typically adequate for vitamin-mineral analyses, except for zinc.

Samples should be appropriately stored for adequate sample preservation. Liver biopsies, urine, and serum can be stored frozen long term or refrigerated if mineral analysis is to be completed within a few days. Whole blood and milk should be refrigerated but not frozen, as cell lysis or coagulation of solids, respectively, will result.

Post-Mortem Animal Sampling

A variety of post-mortem animal samples are available that can be analyzed for vitamin-mineral content. The most common tissue analyzed for mineral content is liver, as it is the primary storage organ for many of the essential minerals. In addition, bone is used as the primary storage organ for calcium, phosphorous, and magnesium. For Vitamin A and E, liver is the tissue of choice for analysis, but it needs to be relatively fresh. Tissue degradation will correspondingly decrease the vitamin A and E present.

Post mortem samples should be stored frozen until analyzed to prevent tissue degradation. If samples are to be analyzed within 1-2 days, they can be stored under refrigerated conditions.

Copper Deficiency

Copper deficiency is one of the most commonly encountered nutritional problems in ruminants, but copper excess is also commonly encountered, especially in sheep. In contrast, copper deficiency is rare in non-ruminants. Clinical signs of deficiency can present as a large array of adverse effects. Reduced growth rates, decreased feed conversion, abomasal ulcers, lameness, poor immune function, sudden death, achromotrichia, and impaired reproductive function are commonly encountered with copper deficiency.

Cows will do all they can to ensure adequate copper is in calves when they are born. They will actually deplete their own body reserves to ensure neonatal adequacy. As such, neonates diagnosed with copper deficiencies are proof of maternal deficiencies. With copper being an essential component of the immune function, this maternal deficiency likely results in poor colostrums quality

and inadequate neonatal protection even in calves that get adequate volumes of colostrums.

The best method for diagnosing copper status is via analysis of liver tissue, although much testing is performed on serum. Deficiency within a herd will result in some animals that have low serum copper concentrations, but serum content does not fall until liver copper is significantly depleted. In herds that have had livers tested and found a high incidence of deficiency, it is not uncommon for a high percentage of the animals to have "normal" serum concentrations. At the Utah Veterinary Diagnostic Laboratory, it is commonly recommended that 10% of a herd or a minimum of 5-10 animals be tested in order to have a higher probability of diagnosing a copper deficiency via serum quantification. Even with herd deficiency, low serum copper concentrations may only be seen in 10% or more of the individuals. Herds that may be classified as marginally deficient based on liver testing may have predominantly "normal" serum copper concentrations. Thus, serum copper analysis should be viewed as a screening method only. Another factor that can influence diagnosis of copper deficiency in serum is the presence of high serum molybdenum. As the copper-sulfur-molybdenum complex that forms is not physiologically available for tissue use, "normal" serum copper content in the presence of high serum molybdenum should always be considered suspect. In addition, the form of selenium supplementation can alter the normal range for interpretation of serum copper status, with selenite supplemented cows having a lowered normal range for serum copper.

Excessive supplementation of copper in dairy cattle is a relatively common finding at the Utah Veterinary Diagnostic Laboratory. Liver copper concentrations greater than 200 ppm are routinely identified. But, in recent months, some cases of deficiencies have been identified, due to cessation of mineral supplementation programs.

The recommended adequate liver copper concentration range in adult cattle is 25 to 100 ppm. In comparison, late term fetal or neonatal liver should have 65 to 150 ppm copper to be considered normal.

Manganese Deficiency

Manganese deficiency in ruminants is associated with impaired reproductive function, skeletal abnormalities, and less than optimal productivity. Cystic ovaries, silent heat, reduced conception rates, and abortions are reported reproductive effects. Neonates that are manganese deficient can be weak, small, and develop enlarged joints or limb deformities. Manganese deficiencies in beef cattle are most commonly seen in areas of highly

alkaline soils, due to much poorer plant uptake of manganese.

Manganese deficiency, although not reported often, is identified routinely in dairy cattle when tested. Of interest is the fact that most testing of beef cattle (greater than 95%) finds normal manganese concentrations in liver, blood, and serum, but in these same matrices greater than 50%, 75%, and 95%, respectively, of dairy cattle tested are below recommended normal concentrations (unpublished data, Utah Veterinary Diagnostic Laboratory). This may, in part, be due to high calcium and phosphorous content of dairy rations, which can be antagonistic to the bioavailability of manganese.

Of the samples available, liver is the most indicative of whole body status, followed by whole blood and then serum. As red blood cells have higher manganese content than serum, hemolysis can result in increased serum content. Since the normal serum concentration of manganese is quite low, many laboratories do not offer this analysis because of inadequate sensitivity. Overall, response to supplementation has frequently been used as a means of verifying manganese deficiency, but it is critical that a bioavailable form be utilized.

Selenium Deficiency

As an essential mineral, selenium is commonly identified as deficient in ruminants, but infrequently in dairy cattle. Selenium deficiency is also identified in many non-ruminant species. Selenium deficiency is associated with reduced growth rates, poor feed efficiency, poor immune function, impaired reproductive performance, and damage to muscle tissues. "White muscle disease", a necrosis and scaring of cardiac and/or skeletal muscle, is linked to severe selenium deficiency; although, it can be caused by vitamin E deficiency as well.

Cows will do all they can to ensure adequate selenium is in calves when they are born. They will actually deplete their own body reserves to ensure neonatal adequacy. As such, neonates diagnosed with selenium deficiencies are proof of maternal deficiencies. With selenium being an essential component of the immune function, this maternal deficiency likely results in poor colostrums quality and inadequate neonatal protection even in calves that get adequate volumes of colostrums.

Diagnosis of a deficiency can be made by analysis of liver, whole blood, or serum for selenium content or by analysis of whole blood for glutathione peroxidase, a selenium dependent enzyme, activity. The most specific analysis is that of whole blood glutathione peroxidase, as it verifies true functional

selenium status. Liver is the optimal tissue to analyze for selenium content as it is a primary storage tissue. With serum and whole blood, the former better reflects recent intake, while the latter better reflects long term intake status. Since seleno-proteins are incorporated into the red blood cells when they are made and the cells have a long half-life, selenium content of whole blood is a better reflection of intake over the previous months than serum.

In order to adequately diagnose selenium deficiency, the dietary form of the selenium intake by the animals is important. Natural selenium, predominantly in the form of selenomethionine is metabolized and incorporated into selenium dependent proteins, but can also be incorporated into non-specific proteins in place of methionine. Inorganic selenium is metabolized and predominantly incorporated into selenium dependent proteins. Thus, "normal" concentrations in serum and whole blood differ depending on whether the dietary selenium is a natural organic form or an inorganic supplement.

The recommended adequate liver selenium concentration range in adult cattle is 0.25 to 0.50 ppm. In comparison, late term fetal or neonatal liver should have 0.35 to 0.65 ppm selenium to be considered normal.

Zinc Deficiency

Zinc is an essential mineral that is required by all cells in animals. Zinc plays a role in numerous enzymatic reactions. Deficiencies of zinc are associated with reduced growth, poor immune function, diminished reproductive performance, and poor offspring viability, as well as skin lesions in severe cases.

Tissue zinc concentrations do not reflect body status well. Of the common samples tested, liver and serum are the best indicators of zinc status. But, serum and liver zinc can be altered by age, infectious diseases, trauma, fever, and stress. Response to zinc supplementation has shown that some animals having low-end normal liver or serum zinc can still show improvement in some clinical conditions. Thus, liver and serum only verify deficiency when these samples have very low zinc content.

Vitamin A Deficiency

Vitamin A is an essential fat soluble vitamin in ruminants. It is essential for all cell replications and is especially important in epithelial integrity. It plays an important role in tight junctions between cells, as well as being an important an antioxidant in the body and in mucosal secretions. Vitamin A deficiency is associated with poor growth rates, poor

feed intake, poor immune function, poor reproductive performance, and high incidences of diarrhea in calves. Loss of efficient tight junctions in the epithelial cell lining of the digestive tract allows opportunistic pathogens to invade and cause disease.

Vitamin A is provided in the diet via green growing vegetation or supplementation. Dead, brown forages have relatively no Vitamin A content. Thus, for grazing livestock, they must accumulate enough body reserves of vitamin A to carry them through the winter and have enough left to provide adequate vitamin A to their offspring. Therefore, it is more common to see vitamin A deficiencies in the springs after significant drought years, due to decreased time for body reserve accumulation. Unlike minerals, much of the vitamin A provided to the neonate is via the colostrums and in milk fats. Also, early calving has increased the incidence of neonatal vitamin A deficiencies due to lack of green forage at the time of parturition.

Vitamin A analysis can be efficiently performed on serum or liver tissue. It is important that samples be stored frozen and protected from light to prevent degradation of the vitamin A.

Vitamin E Deficiency

Vitamin E is an essential fat soluble vitamin in ruminants. It is essential for all cells as an important antioxidant in the body in conjunction with selenium. Vitamin E deficiency is associated with poor growth rates, poor immune function, poor reproductive performance, poor muscle function, poor cardiovascular function, and "white muscle disease".

Vitamin E is provided in the diet via green growing vegetation or supplementation. Dead, brown forages have relatively no Vitamin E content. Thus, for grazing livestock, they must accumulate enough body reserves of vitamin E to carry them through the winter and have enough left to provide adequate vitamin E to their offspring. Therefore, it is more common to see vitamin E deficiencies in the springs after significant drought years, due to decreased time for body reserve accumulation. Much of the vitamin E provided to the neonate is via the colostrums and in milk fats, although it is also transferred across the placenta. Also, early calving has increased the incidence of neonatal vitamin E deficiencies due to lack of green forage at the time of parturition.

Vitamin E analysis can be efficiently performed on serum or liver tissue. It is important that samples be stored frozen and protected from light to prevent degradation of the vitamin E.

Effects on Immune Status

Deficiencies in vitamins and minerals have a two part impact on immune function in neonates. Firstly, since neonates are still developing their immune capabilities, these deficiencies have a direct negative impact on that development. And, indirect immune compromise is via the mother's poor immune function. At the time in which it is essential that the mothers be immune competent in order to produce antibodies for the colostrums, they often are deficient due to depletion from movement to the fetus. Additionally, poor immune function at the time of vaccination can result in very poor vaccine response, which in turn results in poor immune memory and antibody production. Thus, herd deficiencies would be expected to result in poor colostrums quality. This poor quality equates to a higher incidence of disease in the offspring due to poor maternal protection. Often this is seen as high incidence of neonatal diarrheas and/or high incidence of neonatal/juvenile pneumonias.

Optimization of Supplementation

There are three basic time periods in which it is critical that vitamin-mineral status is optimal. Firstly, since the majority of minerals are transferred to the fetus during the last trimester of gestation, the three months prior to parturition are essential for offspring to be born with adequate body reserves and leave the mothers with enough to have good immune status for colostrum production. Secondly, as these vitamin-mineral deficiencies play a significant role in reproductive health, the time period from parturition to breeding is critical to ensure that the mother's system is replenished for optimal breed-back efficiency. And, thirdly, any time period in which animals are to be vaccinated, one must ensure adequate vitamin-mineral status in order to maximize response to vaccines. I routinely suggest that animals be on a well balanced vitamin-mineral supplementation plan for a minimum of 30 days prior to any vaccination.

Summary

A variety of samples can be tested for vitamin-mineral content, but may not provide any indication of the overall mineral status of the animal. Appropriate diagnosis of mineral status involves thorough evaluation of groups of animals. The evaluation should include a thorough health history, feeding history, supplementation history, and analysis of several animals for their mineral status.

Dietary mineral evaluation should only be used augment the mineral evaluation of animal groups. If minerals are deemed to be adequate in the diet, but the animals are found to be deficient,

antagonistic interactive effects of other minerals need to be investigated. As an example, high sulfur or iron can cause deficiencies in copper and selenium even when there are adequate concentrations in the diet.

Overall, common vitamin-mineral deficiencies are significant hindrances to profitability in the livestock industry. Poor reproductive performance results in increased incidence of culling for open cows. Poorer than optimal feed efficiency and weight gain impact the bottom line in terms of pounds of cattle sales. And, poor calf health results in deaths and disease. The resultant increased disease incidence results in lost income in terms of treatment costs and poorer overall growth rates and gains in affected animals.

Common Vitamin and Mineral Deficiencies and How They Affect Production in Cattle of the Intermountain West

10th Annual Diversified Agriculture Conference
Jeffery O. Hall, D.V.M, Ph.D., D.A.B.V.T.
February 21, 2013

Vitamin/Mineral Deficiencies

- Copper Deficiency
- Selenium Deficiency
- Rarer
  - Manganese
  - Zinc
  - cobalt

Vitamin/Mineral Deficiencies

- Why do we see more now than 30 yrs. ago???
  - Fall of 2008 – Cost cutting
  - More common testing
  - Increased production output
  - Altered nature – calving dates
  - Drought effects

Copper Deficiency

- Deficiency in calves can cause
  - Poor Growth Rate
  - Poor Immune Function
    - Susceptible to various causes of diarrhea and pneumonia
- Calves should be born with higher body reserves than an adult
- Cows move copper to fetus during gestation

Copper Deficiency (cont.)

- Deficiency in a calf is caused by maternal deficiency
- Deficiency due to inadequate intake or precipitated by high sulfur, iron, selenium, or molybdenum in the diet
- Feeder and Adult deficiencies associated with repeat breeders, poor conception rates, prolonged calving dates, non-breeders, poor immune function, and poor growth
- Sample of choice for testing is liver
  - Deficient Serum is accurate
  - Adequate serum is questionable

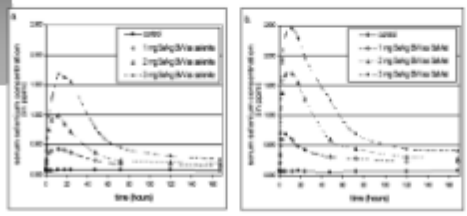
Selenium Deficiency

- Deficiency in calves can cause:
  - Poor Growth Rate
  - Weak calves
  - Poor Immune Function
  - White Muscle Disease
  - Sudden Death

Selenium Deficiency (cont.)

- Calves should be born with higher body reserves than an adult
- Cows move selenium to fetus during gestation
- Feeder and adult deficiencies associated with repeat breeders, poor conception rates, prolonged calving dates, non-breeders, poor immune function, poor weight gain, and sudden deaths
- Deficiency due to inadequate intake or precipitated by high sulfur, zinc, or iron
- Sample of choice is liver, serum, or whole blood
  - Serum is a good monitor of recent intake
  - Whole blood is a monitor of long term status

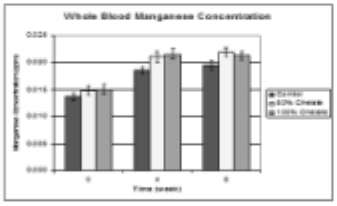
Chemical Form of Supplements



Manganese Deficiency

- Manganese necessary for bone and joint development and reproductive functions
- Deficiency associated with cystic ovaries, repeat breeding, and weak calves

Supplement Type can make Differences



Vitamin E Deficiency

- Deficiency in calved can cause:
  - Poor Growth Rate
  - Weak calves
  - Poor Immune Function
  - White Muscle Disease
  - Sudden Death

Vitamin E Deficiency (cont.)

- Vitamin E is a fat soluble vitamin that requires intake of green vegetation
- Drought conditions result in less accumulation of Vitamin E to sustain the cow through the winter and gestation
- Liver or serum are adequate for testing

Selenium Deficiency (cont.)

- Calves should be born with higher body reserves than an adult
- Cows move selenium to fetus during gestation
- Feeder and adult deficiencies associated with repeat breeders, poor conception rates, prolonged calving dates, non-breeders, poor immune function, poor weight gain, and sudden deaths
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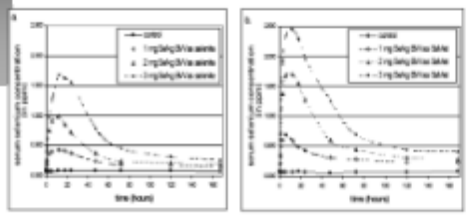

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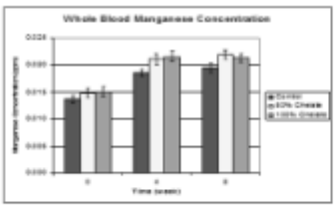

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Vitamin E Deficiency (cont.)

- Vitamin E is a fat soluble vitamin that requires intake of green vegetation
- Drought conditions result in less accumulation of Vitamin E to sustain the cow through the winter and gestation
- Liver or serum are adequate for testing

Timing Supplementation

- Vaccine Timing
  - Not wise to vaccinate when animals are in poor condition for vitamin/mineral balance
- Optimization of Health – Calves, feeders, etc.
- Optimization of Reproductive Efficiency

Herd Testing

- Serum
  - Groups of samples required
  - 5-10 samples per group of similarly treated animals (dependent on group size)
  - Copper – questionable
- Liver
  - Saved samples from "normal animals"
  - Liver Biopsies

Questions

Micro-greens Operations

Biographical Information:

Carol and Russ Peterson
Cove View Gardens

Cove View Gardens is located in the shadow of the Cove Mountain near Richfield, Utah. The Peterson family has built a state of the art hydroponic greenhouse for growing the freshest quality lettuce which assures the safest possible lettuce. State certified well water eliminates possible ground or irrigation water bacteria from entering the growing system. Cove View Gardens is preservative and pesticide free. Beneficials, like ladybugs, are used to take care of any unwanted pests in our greenhouse. Cove View Gardens deliver living lettuce to stores and restaurants with the roots attached.

Session Description:

Carol and Russ will discuss their business operations.

Benchmarking – Calibrating Your Business Guidance System

Biographical Information:

Jay Olsen
Farm/Ranch Management Instructor
Snow College

Jay Olsen was raised on a family farm and ranch in Manti, Utah. He has cowboyed, farmed, and ranched in Utah, Florida and Idaho. For the past 16 years, Jay has worked with farmers and ranchers in South Central Utah as a Farm/Ranch Management Instructor at Snow College. He has taught and advised over 350 farm families in business management. Mr. Olsen also teaches Snow College Agriculture classes and is currently the Director of Agriculture and Farm/Ranch Business Management at Snow College.

Nationally, Mr. Olsen has served on the Uniform Farm Management Project committee, the National Farm Management Benchmarking committee and Secretary, President Elect, and President of the National Farm Ranch Management Education Association board. Mr. Olsen graduated from BYU with a B.S. degree in Agricultural Economics (Farm/Ranch Management), and a M.S. degree in Animal Science (Reproduction and Physiology).

He and his wife Lauri have four children.

Session Description:

Determining your best businesses measurement benchmarks; in this presentation we will discuss many benchmark measurement options and answer questions like: what should I look at, are they reasonable, reliable, and repeatable, can I find comparable benchmarks within in the industry.

Beef Red Book – practical applications and examples for analyzing your beef herd and introducing a Crop Record Book for recording crop records

Biographical Information:

Jay Olsen
Farm/Ranch Management Instructor
Snow College

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He and his wife Lauri have four children.

Session Description:

Two useful tools for any farmer and/or rancher will be discussed in this presentation. Participants will receive an Excel spreadsheet for use in their own business to record and analyze cow herd records and crop production records. True to life examples of data will be inputed and used to benchmark the farm and ranch.

Excel with Excel

Biographical Information:

Ron Patterson
Utah State University Extension

Ron Patterson has been the County Agriculture Agent in Carbon County since 2005. Prior to that, he taught high school agriculture and farm business management at Eastern Idaho Technical College. In addition, he was a livestock nutritionist at a feed mill in Terreton, Idaho. Ron has run several small businesses to help his children learn to work. Through all of this, Ron has used spreadsheets to analyze financial records and develop decision-making tools. His most recent, widely-used tool is a spreadsheet that helps with boom sprayer calibration calculations.

Session Description:

This four hour workshop will be done in three sessions:

Session 1 Excel basics. Learn how to navigate through Excel and use it for various purposes. This is for people who are unfamiliar with the software. 1 hour

Session 2 Guided practice. Use Excel with several guided exercises to become familiar with some of the capabilities of Excel. 1 hour

Session 3 Personal projects. Receive assistance as you work to develop your own spreadsheets to create analysis or decision-making tools. 2 hours or as needed.

Planning for Better Business

Biographical Information:

Alan K. Christensen
Utah Small Business Development Center at Snow College

Prior to becoming the Director of the Utah SBDC at Snow College, Alan Christensen, owned and operated a number of small business ventures and also worked as the Marketing Director for a Ford & Mercury automobile dealership. He holds a Bachelor's degree in Business Management and earned a Master's of Education in Instructional Technology from Utah State University. Christensen is certified as a training facilitator by three of the most widely recognized names in entrepreneurial and leadership training: The NxLeveL Educational Foundation, The Kauffman Foundation, and FranklinCovey.

Clients with whom Christensen has worked with have been recognized on a state and multi-state level by the U.S. Small Business Administration with awards of success such as: "Home-Based Business Champions of the Year" and "Exporter of the Year." As a sought-after business expert, Christensen has presented at many local, state and national conferences on a broad range of business topics.

Christensen also oversees central Utah's Custom Fit Training program, which assists area businesses in securing training and education solutions – to meet the ever-changing needs of their workforce.

Session Description:

Whether starting a new business or growing an existing business, all of the hard work that leads to success is made much easier and more productive when preceded by proper planning. In addition to covering the basics of a good start-up or growth plan, this presentation will:

- Help clarify your core business strategy,
- Consider the rules for winning in that strategy,
- Begin the development of your plan using a simple framework

Business plans developed using this process are valuable as a means of assessing feasibility, securing financing and guiding operations within the business.

365 Days of Not Feeding Hay Makes One Year of Not Feeding Hay

Biographical Information:

Jay Olsen
Farm/Ranch Management Instructor

Mr. Olsen was raised on a family farm and ranch in Manti Utah. He has cowboyed, farmed, and ranched in Utah, Florida and Idaho. For the past 16 years, Mr. Olsen has worked with farmers and ranchers in South Central Utah as a Farm/Ranch Management Instructor at Snow College. He has taught and advised over 350 farm families in business management. Mr. Olsen also teaches Snow College Agriculture classes and is currently the Director of Agriculture and Farm/Ranch Business Management at Snow College.

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He and his wife Lauri have four children.

Session Description:

Ranchers are wintering cows with no hay and reducing costs by 90%. This discussion will show examples of ranchers wintering their beef herd with no hay feeding. Be prepared to learn the secret of not starting your tractor all winter and saving hundreds of dollars in cow feeding costs.

Grazing Healthy Animals

Biographical Information:

Kerry A. Rood, MS, DVM
Utah State University

Session Description:

Kerry will discuss how to improve the health and wellbeing of livestock through preventative measures to avoid parasites, bloat and nutritional unbalance. He will also describe the body conditioning score for livestock.

Grazing Livestock: Health

Kerry A. Rood, MS, DVM
Extension Veterinarian

Topics

- Parasites
  - Internal
  - External
- Bloat
- Nutritional Balance
- Body Condition Scores

Internal Parasites: Life Cycle

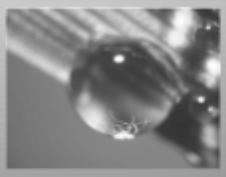
Direct Life Cycle

Indirect Life Cycle

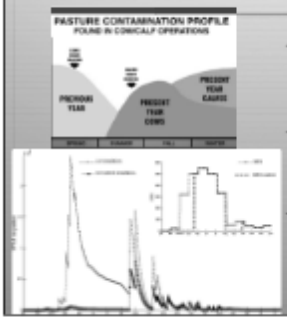
Which life cycle may me harder to control?

Infective stage

- For most parasites, it is the L3 stage of development
- L3 found on blades of grass
- Ingested while grazing
- Sensitive to low humidity and UV light
- Pasture is source for L3



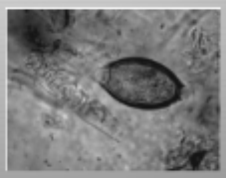
Pasture Parasite Load



- Cows and clavis are exposed in the spring from overwintered parasite larvae
  - Overwintered in egg
- After the pre-patent period, the newly acquired parasites begin to shed eggs onto the pasture
- Eggs per gram of feces

EPG

- Way to determine "relative" parasite burden
- Limitations
  - Some expertise
  - Microscope
  - Female worms
  - Worms might not be shedding



Anemia

FAMACHA

- *Haemonchus contortus*
  - Blood sucking
  - Low RBC's
  - Low Protein

Parasite Control

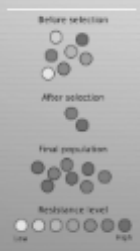
Management

- Rotate Grazing
  - Break LS cycle on pasture
- Mowing grass
- Harrowing field
- Graze when dew has burned off
- Pasture rest

Anthelmintic

- Different classes
  - Do not get all the parasites
- Resistance is developing
  - "nothing in biology is 100% other than death"

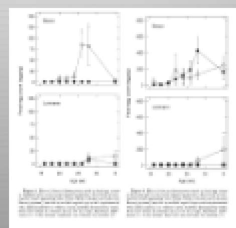
Parasite Resistance



- Rarely 100% kill rate
  - Improper dosage – too little
- Rarely rotate classes of dewormer
- Rarely incorporate other management strategies

Do some of the “natural” dewormers work?

- Not as effective, if at all
  - Tobacco – nicotinic receptors, but dose level might affect animal
  - Diatomaceous earth – might have some benefit
  - Garlic - ?

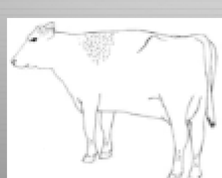


Bennett, 2011. Poultry Science 90:1416-1426

External Parasites

- Nuisance
- Irritant
- Transmit disease
- Anemia?
- Lice
- Horn flies
- Heel flies
- Nasal bots
- Stomach bots

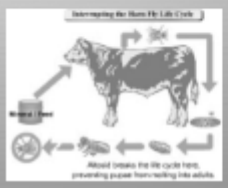
Horn Flies



Control

Insecticide

Insect Growth Regulators



Bloat

- Gas distention of the rumen
- Caused by trapped gas
  - Frothy – Rumen tympany
  - Free gas – eructate

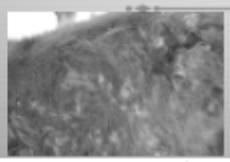
Frothy Bloat

- Legume or legume-dominate pasture
  - Alfalfa
  - Clover
- Soluble leaf proteins
- Saponins
- Hemicellulose
- Less bloat prone legume varieties
  - Sanfoin
  - Vetch's (peave and milk)
  - Birdsfoot trefoil

Prevention

- Mixed pastures (grass and legumes)
- Feed animals hay before grazing
- Surfactants
  - Poloxaline
- Ionophores (Rumensin)

Nutritional Balance



- Just because they are pasture does not necessarily mean all nutritional needs are being met.
  - Vitamin E and Selenium
    - White muscle disease
  - Vitamin A deficiency

Dermatopathy in juvenile Angus cattle due to vitamin A deficiency

Body Condition Score

Summary

- Parasites
  - Internal
  - External
- Bloat
- Nutritional Balance
- Body Condition Scores

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