

UTAH BERRY GROWERS ASSOCIATION NEWSLETTER

July 2010
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UBGA 5th Annual Winter Meeting was bigger and better than ever

Our 5th annual winter meeting was held on January 21st in Provo, in conjunction with the Utah State Horticulture Association (USHA), and was the best yet. The USHA held their meetings on the 20th and 21st, and put all of the common interest topics (both tree and small fruit) on the morning of the 21st for the overlapping tree fruit and berry crop session. In addition to USU speakers, guest speakers came from Oregon, Washington, Maryland and Indiana.

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“GAP” (Good Agricultural Practice) Certification

Our first speaker was Lynn Long from Oregon Cooperative Extension in The Dalles, OR. Lynn specializes in sweet cherry production systems, but has also been actively involved in “GAP” certification in Oregon’s fruit industry, and presented a history and overview of current GAP certification programs. GAP stands for “Good Agricultural Practices”. After some high profile food safety scares, produce brokers in Europe and elsewhere began requiring supplies to follow certain “good” growing and food handling practices to ensure food safety. Produce buyers require that suppliers undergo certification programs including specific record keeping practices, audits, and farm inspections. Lynn pointed out that there are 35 GAP certification programs currently available in the U.S., and mentioned that one vegetable grower had to undergo 7 audits of the same farm to satisfy the demands of 7 different buyers. The main focus areas for these audits and inspections are: Food Safety;

protection, safety and welfare of farm workers; safe use and storage of pesticides and fertilizers; and the use of integrated pest management to minimize pesticide use. Mr. Long then discussed several case studies where operations became certified under different GAP programs in order to sell fruit to the U.S. government, or to overseas produce buyers. The rules and regulations are all a bit daunting, but are worth learning more about if you plan to expand your markets.

Direct Marketing

Our next speaker was Wade Butler who talked about Direct Marketing. Wade and his extended family own and operate Butler Orchards in Germantown, Maryland. The farm was originally started as a small tree fruit orchard by Wade’s parents George and Shirley. They expanded into strawberries and raspberries, and began to specialize in pick-your-own sales and on farm entertainment. They now do pick-your-own strawberries, raspberries, blackberries, blueberries, peaches, cherries, cut flowers, and Christmas trees. Their on-farm market started out as baskets of fruit under a shade tree and has grown to a large modern facility that sells pre-picked fruits and vegetables as well as value-added products such as jams and jellies, frozen fruit drinks, pies, candies, baskets and a variety of related items. Their season starts with an Easter festival and ends with Christmas trees. One of their most popular



attractions is a fall pumpkin festival, complete with wagon rides and play time in the hay barn. Wade's presentation was brimming with ideas for selling not just your fruit, but a farm experience, to the customer.



Organic Fruit Production Trends

Our next speaker was Dr. David Granatstein from Washington State University Tree Fruit Research Center in Wenatchee. Dr. Granatstein specializes in organic orchard systems with an emphasis in orchard floor management. His presentation focused on national and international trends in market demand for organic fruit. He showed historical consumer demand data that indicated that the market for organic food grew from \$5 billion in 1999 to nearly \$25 billion in 2009. In California, organic strawberry acreage has increased from 500 acres to over 2000 acres over the past decade. However, organic acreage for raspberry and blackberry has remained relatively constant over the same period. In a comparison of management costs, he reported that organic strawberries had higher fertilizer and weed control costs. However, these were offset by higher prices so that returns were similar to conventional strawberries. In his final assessment, Dr. Granatstein said that the future demand for organic fruit is projected to continue increasing. However, growth in the local food movement may compete with organic in the premium produce markets.

Maximizing Nutrition Utilizing Soil, Water and Fruit Analysis

Our next speaker was Mr. Kraig Klicker of SoilTech Northwest, based in Washington. Kraig works through Wilbur-Ellis in consulting with tree fruit growers throughout the Pacific Northwest on fertilizer management. His specialty has been improving nutrition in apples to reduce the incidence of bitter pit and other nutrient deficiencies that adversely affect packout. However, his presentation on having both soils and irrigation water tested to better understand nutrient availability pointed out some important principles that would be just as applicable in berry crop production. He also talked about the importance of tissue analysis. In addition to the normal leaf analysis, they have had some success with analyzing developing apple fruit early in the season and then making recommendations for mid-season fertilizer additions that will improve the harvest fruit quality and storability.

AFTERNOON SESSION

Strawberry and Bramble Management in the Eastern U.S.

After lunch, we again heard from Wade Butler of Butler Orchards. This time, his presentation focused on their strawberry and bramble management systems. A major crop on their farm is pick-your-own strawberries. Although they have experimented with more modern systems such as raised-bed plasticulture, they continue to use conventional matted row management as it seems best suited to their environment and their U-pick clientele. Their fields receive a liberal fall application of straw mulch for mid-winter protection. The straw also helps keep the developing fruit clean and support customer traffic in the following spring. They run sprinklers for spring frost protection, pumping water from a pond on their farm. They primarily grow eastern strawberry cultivars such as Earliglow, Allstar and Jewel.



Their raspberry production is limited to fall-bearing cultivars which they mow to the ground each year to keep labor manageable. However, they do grow black raspberries and thornless blackberries which both require more intensive management. They have grown several semi-erect blackberry cultivars, and some of

the erect types from Arkansas. Several of their biggest blackberry pest problems are thankfully not problems in Utah. These include Japanese beetle and orange rust disease. Another of their common problems is fruit rot resulting from frequent spring rains. Historically, this has not been a problem in Utah. However, the last few wet springs have given us some indication of what the Maryland growers deal with every year.



Berry Insect Pests: Raspberry Horntail & Spotted-wing Drosophila

USU Extension Entomologist Dr. Diane Alston gave an update of insect pests of concern to berry growers. First, she talked about the Raspberry Horntail which has become the major raspberry pest in Northern Utah. She gave an overview of a new horntail bulletin available on the USU Extension website (www.utapests.usu.edu), and outlined the identifying features and life cycle of the adult insect, and estimates as to the time of adult emergence. According to published management guidelines from California, the management



threshold for horntail is 3 actively wilting canes per 100 row feet. Common damage levels in Utah in 2009 were 10 to 20 wilting canes per 100 row feet. Suggested cultural management strategies included keeping the planting as healthy as possible, pruning out infestations before they can become established, and possibly planting resistant cultivars. Dr. Alston presented data from the Kaysville plots where there appear to be dramatic differences in insect preference among the plots in the cultivar trial. For example, among the summer-bearing types Royalty, Cascade Dawn and Cascade Delight seem to be much less attractive to the insects than Willamette, Lauren, Reveille or Canby. Among fall-bearing types Himbo Top, Polana and Joan J had fewer incidents of wilted canes than Heritage or Polka. It will be interesting to see if these cultivar differences hold up for a second season. In addition to cultural control, she provided a list of insecticides available for controlling the adult insect.

Dr. Alston also provided a warning regarding a new insect pest that has emerged in California, Oregon and Washington called the **spotted-wing drosophila**. This insect is a relative of the common vinegar fly that lays eggs in decaying fruit. However, this particular species also lays eggs in immature fruit where the larvae make the fruit unmarketable. It has caused economic damage in strawberry, raspberry, blackberry, apple, plum, cherry, peach, and other crops. Although the fly has not yet been observed in Utah, it has moved rapidly through the fruit growing regions of the West Coast, and Utah growers should be on the lookout.



Alternative Berry Crops and Machine Harvesting



Next on the program was Sam Erwin. Sam is a fruit grower, nurseryman and equipment dealer based in Indiana. His nursery Indiana Berry Company has been a frequent contributor to the UBGA. As a fruit grower and equipment dealer (Hadwin Supply), Sam has a wealth of experience in mechanical berry



harvesting. He has had experience machine harvesting blueberries, red raspberries, black raspberries, blackberries, muscadine grapes, currants, gooseberries, elderberries, and autumn olive. Sam's talk focused on the different design parameters of mechanical harvesters and discussed the advantages and disadvantages of different picking systems, catching and conveying systems, and cleaning and fruit handling features. He also talked about some of the other specialized equipment of interest in berry production including airblast sprayers, mowers and shielded weed sprayers.



Raspberry Cultivar Trial

The last speaker of the day was Extension Fruit Specialist, Dr. Brent Black, who gave an overview of the bramble cultivar trial at the Kaysville Research Farm. The Kaysville location has 16 different cultivars of summer raspberries, and an additional 10 fall-bearing raspberry cultivars. Brent showed comparisons of initial establishment, winter survival, yield, fruit size and the preferences of a taste panel, then gave a report card for these cultivars. Among the best summer-bearing cultivars across all these characteristics were Cascade Delight, Cascade Bounty, Reveille, and Georgia (an as-yet unreleased selection from Maryland). Among those scoring consistently below average were Coho and Lauren. In both of these cases, winter injury was extreme which consistently resulted in very poor yields and poor stand establishment.

Comparisons of 19 blackberry cultivars were also presented. Winter injury varied dramatically among seasons. In the spring of 2008, most of the cultivars had experienced severe winter injury, whereas injury was much less pronounced in the spring of 2009. Across both seasons, Chester showed the highest winter survival of any thornless blackberry, with only Illini Hardy (thorny) showing less injury. As expected, the trailing types from the Pacific Northwest showed the most injury, with complete dieback in 2008 and 60 to 80% dieback in 2009. When the trailing types did fruit, they were among the favorites for fruit flavor. Not surprisingly, total yields were a function of the degree of winter injury.

Both the raspberry and blackberry trials will be carried through the 2010 season and then complete results will be published in future issues of the UBGA newsletter. Come to the Kaysville farm tour on August 17th if you want to see this cultivar trial first hand.



If you missed the winter meeting but want to know more, most of the speakers' presentations have been posted on the USHA website (www.utahhort.org).

Herbicide Recommendations for Weed Control/Management in Blackberries and Raspberries*

Extracted from the 2010 PNW Weed Management Handbook with local modifications for Utah by:
Ralph E. Whitesides, Extension Weed Specialist
Utah State University

The control or management of undesirable vegetation in berries can increase crop yield, extend crop life, reduce nutrient and water requirements, and facilitate harvest operations. In many cases using herbicides for weed control is one of many tools used in an Integrated Weed Management (IWM) program. IWM takes advantage of cultural, mechanical, and chemical weed control strategies in the best possible way with the goal of maintaining weed densities at manageable levels while preventing shifts in weed populations to more difficult to control weeds. The following list of herbicides provides some suggestions for chemical control of weeds in blackberries and raspberries. Common names and trade (brand) names are used in this list of recommendations. No discrimination is intended and no endorsement is implied by the addition or omission of a product from this list.

Repeated use of the same herbicide in continuous monoculture cropping systems seems to promote the development of resistant weed populations most rapidly. Herbicide users should rotate herbicide mode of action (not just herbicides as some commercial products with differing trade names have the same mode of action) to reduce the potential for the development of herbicide resistance in weeds. Specific herbicide group numbers are listed for each active ingredient to indicate their mode of action.

Always read the Herbicide Label before making application.

Established Plantings—Postemergence Directed Applications in Berry Rows

clove or clove leaf oil (Matran EC, Matratec) - (non-selective contact herbicide)

Rate 5 to 8% dilution in 25 to 100 gal of water, depending on weed size, temperature, and sunlight intensity.

Time Before weeds are 6 inches tall.

Remarks OMRI (Organic Materials Review Institute) listed and approved herbicide for in-crop use. Apply before crop emerges, or between rows after emergence; avoid contact with desirable foliage. Directed sprays or hooded sprayers are recommended to protect desirable foliage. Works best on annual weeds less than 6 inches. Performance may be erratic depending on environmental conditions. Bright sunlight improves efficacy. No preharvest or re-entry interval.

glyphosate (numerous product names) - (non-selective systemic herbicide)

Blackberries only

Rate Consult labels

Time Apply to actively growing weeds.

Remarks Avoid treatments in late summer when sugars move toward crown. Select application equipment to prevent crop injury by directing spray, or use low-pressure hand-held sprayers or selective applicators. Adjust concentration depending on equipment. Consult label about rate and time of application, especially for perennial weeds. Mixing additional surfactant or ammonium sulfate as label instructs may improve control of slightly stressed weeds. Preharvest interval is 14 days. If repeat applications are necessary, do not exceed a total of 10.6 lb ai/A in 1 yr. Inhibits production of three amino acids and protein synthesis.

Caution Grazing is prohibited. In raspberries, the herbicide moves throughout the plant; excessive injury prevents labeling and use in this crop. Repeated glyphosate applications have created resistant biotypes of ryegrass in Australian and Oregon orchards. To avoid weed resistance, rotate weed control practices and use products from different herbicide groups.

Site of action Group 9: inhibits EPSP synthase

glyphosate (several products) - (non-selective systemic herbicide)

Blackberries only

Rate Wiper: 33% solution

Remarks Mix 1 gal product with 2 gal water and wipe weeds, avoiding contact with desirable vegetation. In severe infestations, reduce equipment ground speed or apply in two directions to ensure contact with wiper. (See remarks above.)

Site of action Group 9: inhibits EPSP synthase

limonene (lemon grass oil) (Green Match EX) - (non-selective contact herbicide)

Rate 7 to 15% depending on weed size and species; 14% dilution rate, 20% for spot treatment of difficult to control weeds.

Time When weeds are less than 6 inches tall and up to first fruit set.

Remarks Broad spectrum, non-selective contact herbicide that does not translocate. Spot treatments allowed in bearing crops up to one week before harvest. Do not exceed 8.5 gal/A per application in bearing crops. OMRI listed organic burndown herbicide for use in crop and non-crop sites. Foliage contacted by Green Match will be damaged. Directed sprays or hooded sprayers are recommended to protect desirable foliage. Coverage is very important. Leaf damage is visible within hours. Cool weather may slow activity. No re-entry interval. Causes fast wilting or necrosis of the leaves due to removal of waxy cuticle

paraquat (Gramoxone Inteon) - (non-selective contact herbicide)

Rate 0.5 to 1 lb ai/A (2 to 4 pints/A Gramoxone Inteon)

Time Apply late winter or early spring before new shoots emerge, or late summer or fall after training new canes.

Remarks Adjust spray volume to thoroughly wet weeds. Add a nonionic surfactant or crop oil concentrate as label specifies, taking care to avoid anionic formulations that react in the tank to form insoluble precipitates. Acts as a contact; absorbs energy produced by photosynthesis, forming peroxides that disrupt living cells.

Caution A restricted-use pesticide. Do not ingest or inhale spray mist. Wear protective face shields, respirators, and clothing.

Site of action Group 22: photosystem I electron diversion

sethoxydim (Poast) - (active of grass weeds, selective systemic herbicide)

Rate 0.47 lb ai/A (2.5 pints/A Poast)

Time Apply at optimum growth stage listed on the label; add 2 pints/A nonphytotoxic crop oil concentrate to improve leaf absorption.

Remarks Identify susceptible grasses. Control often is erratic if grasses are stunted or stressed from drought, high temperatures, or low fertility. Resistant grasses include annual bluegrass and all fine fescues, whereas quackgrass can be suppressed. Inhibits fatty acid production, cell membranes, and new growth.

Caution Preharvest interval is 45 days. Do not exceed 5 pints/A per season.

Site of action Group 1: acetyl CoA carboxylase (ACCase) inhibitor

BLACKBERRIES AND RASPBERRIES—Established Plantings—Winter Applications that Persist in Soil and Kill Weed Seedlings Pre-emergence in Spring**dichlobenil (Casoron CS and 4G, Norosac)**

Rate 1.96 to 3.92 lb a/A (1.4 to 2.8 gal/A CS formulation); 4 lb ai/A (100 lb/A Casoron 4G)

Time Apply in late fall or early spring (before May 1) shallow incorporation or sprinkler irrigation will reduce volatility and enhance weed suppression when applied under conditions of high temperature.

Remarks Weigh and distribute uniformly exact quantities over precisely measured areas to ensure accurate applications. The CS formulation (liquid) may allow more precise application rates. Inhibits cellulose and cell wall formation.

Caution Grazing livestock is prohibited. Do not apply during shoot emergence.

Site of action Group 20: inhibits cell wall synthesis Site A

diuron (several products)

Rate 1.6 to 2.4 lb ai/A (2 to 3 lb/A of the 80% formulation)

Time Apply in winter as single application, or apply half-doses in October and March.

Remarks Reduce rate or rotate to other herbicides after weed control is achieved. Sprinkler irrigate if applied before fall rains begin. Spray soil around base of plant avoiding crop foliage. Can be rotated with simazine or other herbicides (except terbacil) to reduce weed shifts. (Inhibits photosynthesis.)

Caution Do not use within 1 yr after planting. Do not use on plants being tip layered. Do not apply on very sandy or gravelly soils.

Site of action Group 7: photosystem II inhibitor

napropamide (Devrinol 50DF)

Rate 4 lb ai/A (8 lb/A Devrinol 50DF)

Time Apply in fall through spring before weeds germinate, or apply foliar-active herbicide to control existing vegetation.

Remarks Irrigation or shallow incorporation is recommended for treatments made November through February, if no rain falls within 2 wk after applying. Irrigate within 24 hours to wet soil 2 to 4 inches deep when applied March through October. Excessive plant residues on soil surface reduce performance. Inhibits root growth.

Site of action Group 15: inhibits very long chain fatty acid synthesis

norflurazon (Solicam DF)

Rate 1.95 to 7.8 lb ai/A (2.5 to 10 lb/A Solicam DF)

Time Apply as directed spray from fall to early spring, before weeds emerge and when crop is dormant.

Remarks Soil surface must be weed free and relatively free from plant residues or debris. Apply only once per year. Temporary bleaching or chlorosis may occur. Inhibits yellow pigment formation and bleaches green chlorophyll.

Caution Do not apply to nursery stock.

Site of action Group 12: bleaching; inhibits carotenoid biosynthesis

oryzalin (Surflan AS)

Rate 2 to 6 lb ai/A (2 to 6 quarts/A Surflan AS)

Time Apply late fall or early spring to bare soil or after existing vegetation has been destroyed by tillage or use of a foliar-active herbicide.

Remarks Use higher rates or split treatments and apply in fall and spring for longer residual control. Irrigate with at least 0.5 inch water or rain to activate herbicide. Shallow cultivation can control newly germinated weeds without reducing herbicide activity. Allow 24 mo before planting vegetables after berries. Inhibits mitosis, primarily in roots.

Site of action Group 3: microtubule assembly inhibitor

simazine (Princep)

Rate 1.6 to 4 lb ai/A (3.2 to 8 pints/A)

Time Apply in winter as single application, or apply half-doses in October and March.

Remarks Reduce rate or rotate with other herbicides after weeds are controlled. Requires surface moisture to activate. Apply half-rate on plants less than 6 mo old. Can be rotated with diuron or other herbicides (except terbacil) to reduce weed shifts.

Site of action Group 5: photosystem II inhibitor

terbacil (Sinbar)

Rate 0.8 to 1.6 lb ai/A (1 to 2 lb/A Sinbar)

Time Apply higher rate on fine-texture soils or soils high in organic matter, in fall or early spring before fruit set, while weeds are small.

Remarks Sprinkler irrigate if rain does not follow application in 2 wk. Reduce rates by as much as half or rotate with other herbicides after weeds are controlled. Calibrate sprayer and apply with tractor-mounted, fixed-boom sprayer using a constant speed and delivery rate.

Caution Do not apply on gravelly soils or soils containing less than 1% organic matter. Do not apply to weak plants or eroded areas with exposed roots. Avoid use for 2 yr if replanting is anticipated. Can be rotated with diuron or other herbicides (except simazine) to reduce weed shifts. Preharvest interval is 70 days.

Site of action Group 5: photosystem II inhibitor

*See 2010 PNW Weed Management Handbook - revised December 24, 2009 by Ed Peachey and Diane Kaufman - for more details on herbicides, rates, use sites, and times of application.



2010 Utah State University Fruit & Vegetable Research Field Day

Utah
Agricultural
Experiment
Station

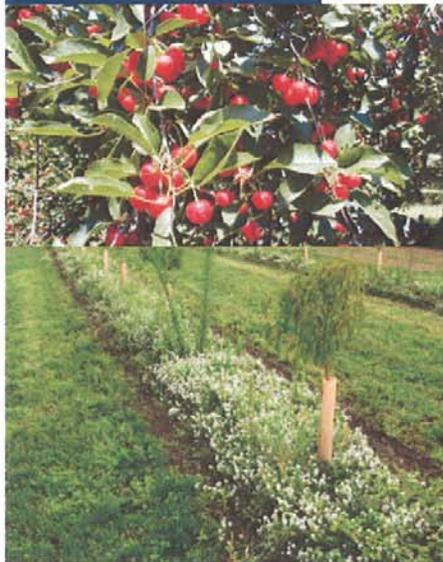
August 17

1:00 - 5:30 pm

(Concurrent tour tracks)

**USU Horticultural Research Farm
725 South Sego Lily Dr.
Kaysville, UT**

Contact for more info: diane.alston@usu.edu



Topics and Demonstrations:

Tree Fruits:

- Organic peach production
- Rootstock evaluations
- Irrigation scheduling
- New pest management technologies

Caneberry Fruits:

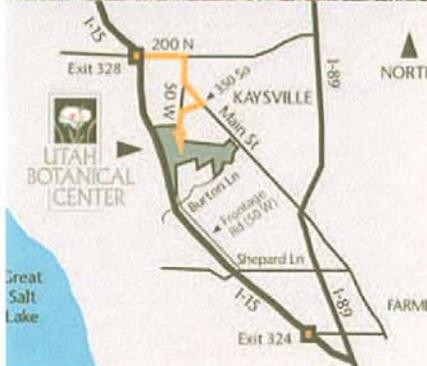
- Berry variety evaluations
- Blackberry training and trellis systems
- Insect caneborer studies
- Berry tasting

Vegetables:

- Organic vegetable production
- Cover crops
- Onion nitrogen management and crop rotation / pest management

Pesticide Laws & Safety:

- Pesticide license recertification CEUs offered





New High Tunnel Publications

Several presentations at past winter meetings have focused on high tunnel fruit production, including one by Dr. Marvin Pritts of Cornell University in 2007, and one by USU graduate student Daniel Rowley in 2009. Daniel and fellow graduate student Britney Hunter just



completed a 3-year project funded by the Western Sustainable Agriculture Research and Education program (SARE) looking at fruit and vegetable cropping options for northern Utah high tunnels.

Of the various cropping options investigated, the most successful to date have been early-season strawberries, fall raspberries, early tomatoes and winter salad greens. Strawberry production was 4 to 5 weeks earlier in high tunnels than in the field. Both yields and fruit marketability were improved in the high tunnels. Early strawberries were sold for a 50% premium (\$4.50 per 1 lb clam-shell, compared to \$3 for in-season fruit) with demand exceeding the limited supply.

Daniel also experimented with summer bearing raspberries and blackberries, but success was limited due to the difficulty of protecting the canes and buds through the winter. Inside the high tunnels, the winter temperature fluctuations seem to make the floricanes even more prone to winter injury. In the future, we'll be looking at more cold-hardy varieties, different tunnel designs, and altered management strategies to try and improve winter survival.

The results of Daniel and Britney's work are now available through a series of six bulletins and fact sheets posted on the USU Extension website (<http://extension.usu.edu/publications>). Bulletins have been published for raspberries, strawberries and tomatoes. The lettuce bulletin will be available shortly.

Currently available fact sheets:

1. Constructing a Low-cost High Tunnel
2. Fall-bearing Raspberries in High Tunnels
3. High Tunnel Strawberry Production
4. Strawberry Plug Plant Production
5. High Tunnel Tomato Production
6. Temperature Management in High Tunnels



Dear Produce Industry Member,

As a service to the produce industry, USDA's Agricultural Marketing Service (AMS) presents an interactive webinar entitled "How to Sell Fruits and Vegetables to the USDA." The webinar is hosted by Red Book Credit Services as part of its free Red Book University educational offering.

The speaker for "How to Sell Fruits and Vegetables to the USDA" is Ron Ulibarri, Acting Chief of the Commodity Procurement Branch of AMS Fruit and Vegetable Programs. AMS purchases fruits and vegetables from industry vendors for distribution to a variety of domestic programs including the National School Lunch Program. Overall, more than \$478 million is spent on close to one billion pounds of product each year. In this webinar session, both large and small sized fruit and vegetable growers and processors will learn how to sell to the USDA and what products the USDA purchases.

Following a formal presentation, participants in the webinar will have the opportunity to ask questions. Attendees of previous sessions have included growers and processors of all sized operations and others along the produce supply chain, as well as representatives from academia and government.

The free webinar will be held on **Wednesday, July 14 at 2:00 pm Eastern Time**. If you are interested, contact **Olga Kehmeier at Red Book Credit Services directly or complete the form below and fax or email it to Ms. Kehmeier**.

We know you won't want to miss this webinar, and look forward to your participation.

Christopher Purdy
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www.ams.usda.gov/fv



RED BOOK UNIVERSITY REGISTRATION FORM

Name of Webinar: "How to Sell Fruits and Vegetables to the USDA"
Date and Time of Webinar: **Wednesday, July 14, 2:00pm Eastern Time**
Name: _____
Title: _____
Company Name: _____
Address: _____
City, State & Zip _____
Telephone Number: _____
Email Address: _____

Fax or email your Registration Form to 913-438-0690 or email to okehmeier@rbc.com

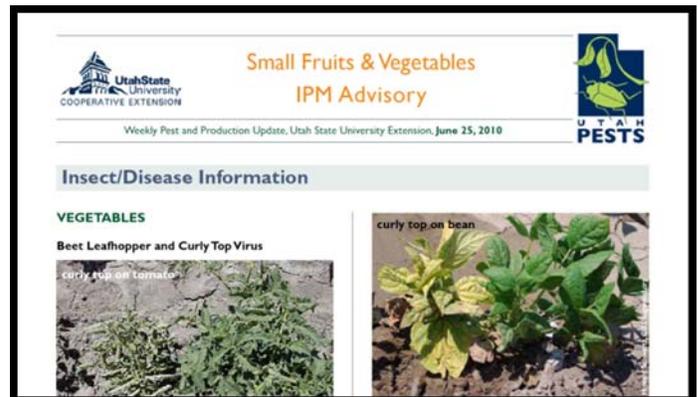
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SMALL FRUIT PEST UPDATES

The Utah State University Extension Integrated Pest Management Program sends out a weekly advisory on current insect and disease pests of small fruits and vegetables. You can subscribe to receive this advisory in your email box for no charge.

To subscribe, go to:

<http://utahpests.usu.edu/ipm/htm/subscriptions>.



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We hope you find the information in this newsletter useful. If you have comments regarding information in this newsletter, or would like to see in future newsletters, please contact:

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