Calculating your crop's bottom line

Dr. Melanie Stock
USU Assistant Professor / Extension Urban & Small Farms Specialist
Certified Professional Soil Scientist, SSSA
@usu_smallfarms

Cut flowers Session, USU Urban and Small Farms Conference
3/2/2021 @ 2:45 pm MST

Utah State University Extension

Utah Cut Flower Farm Association

Florage Fresh Cut Flowers

A word about cut flower economics

- Cut flowers can be *very worth* it to produce
- But not all cut flower crops bring in the same returns. Some might be whimsical to grow, but cost a lot to produce or have a low market
  - How much did they cost to produce? Supplies, labor…
  - What are sales like? How many stems are sold? For what price?

Peony Cut Flower Production Budget, One Field, Northern Utah, 2020

Maegen Lewis, Melanie Stock, Ruby Ward, Brent Black, and Dan Drost

REVENUES (Years 4–20)						
	Input	**Units**	**Total Stems**	**% Sold**	**Price/Unit**	**Total**
Peony Cut Flowers	Grade 1	Stems	370	100%	$ 5.00	$ 1,850.00
	Grade 2	Stems	180	100%	$ 5.00	$ 900.00
	Cull	Stems	80	70%	$ 2.00	$ 112.00
TOTAL ANNUAL REVENUES						**$ 2,862.00**
TOTAL COSTS						**$ 1,460.52**
NET PROJECTED RETURNS (14'x42' Field)						**$ 1,401.48**
NET PROJECTED RETURNS (ft^2)						**$ 2.38**

Let’s talk records and accounting!

- Reasons for record keeping + setting goals
- Types of information to collect, why, and how
  - Basic to advanced
  - Methods and tips
- Creating a budget out of your records
  - Track expenditures
  - Track income
  - Figure out the bottom line (net income)
  - Let’s start with an annual crop – my example will be snapdragons grown in a field.

Reasons to keep records

"The important thing to remember is that good records will help you succeed financially. The more detailed your records of costs and yield, the more you will be able to refine your production and marketing to maximize profits."
- Lynn Byczynski, *The Flower Farmer*

- Key info helps inform planning and decisions next season
  - I always think I'll just remember…
  - We don't realize many things without numbers
- Calculating your bottom line
  - Are you making money? Could you make more?
  - Is a crop underperforming (low yields / limited market)? Which are doing really well?
  - Are you spending a lot of time/effort/money on one aspect of farming that could be more efficient?

Setting goals

- Beginning or increasing note-taking can be intimidating.
  - Never enough time in a day
  - Every year make a goal to track one extra thing or one different thing (e.g. one crop per year)
- Reflect.
  - What methods for note-taking make you want to take notes?
  - Which make you dread it or put it off?
  - When do you have a little more time?
  - Which crops are you most excited about?
  - When is there a little more time?

Is a crop financially worth it?
Info for the bottom line (how much $ it makes)

- Start with **one crop**. Annuals with less fuss are easiest.
- Track **yield – the production per unit area (e.g. stems/bed)**
  - Timing of the harvest and harvest season length
  - Time from planting to harvest
  - Ideal to track for 2 years
- Track **economics?**
  - How much is spent on labor, seed, shipping, tilling, trellising, fertilizing, etc.
  - What are sales like? How hard is it to sell? Does it make a difference in bouquets?

Yield

Goal: figure out how many stems are produced per area in a year.

Step 1: define your area or bed.

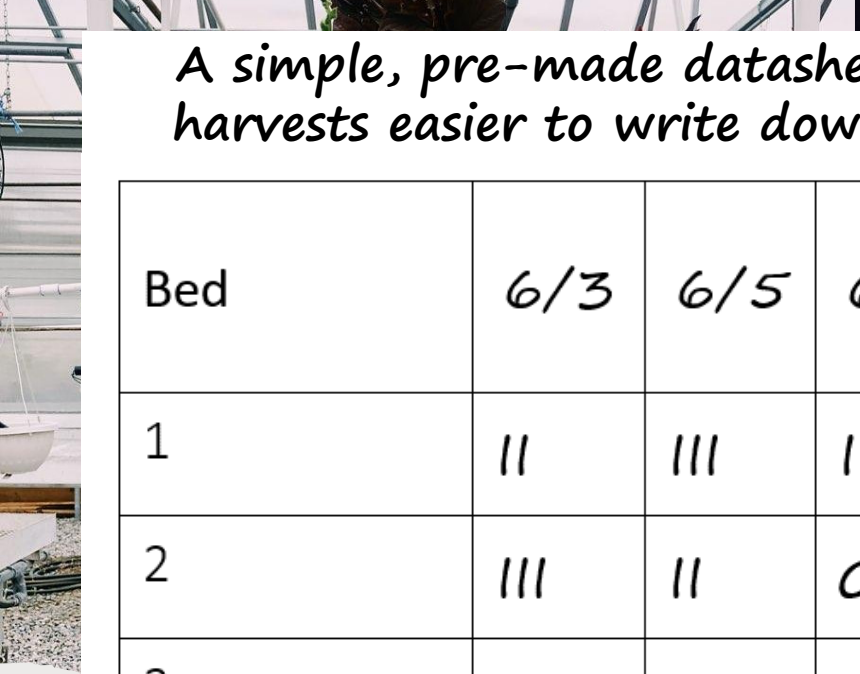
- Number or name each bed
- Measure bed size (L x W = A). May be done now or at planting
- Count the no. of plants, ideally after establishment and before production

Yield

Goal: figure out how many stems are produced per area in a year.

Step 2: record harvested stems.

- *Method 1* – write down the number of stems in every harvest
- *Method 2* – write down key dates (harvest start, end) and about how many harvests per week. Then count the number of stems in a harvest every so often.



A simple, pre-made datasheet makes harvests easier to write down quickly.

Bed	6/3	6/5	6/7	6/10
1	II	III	II	I
2	III	II	0	I
3	0	II	0	0
4	III	I	0	0
5a	10	6	12	0
5b	13	8	1	5
5c	9	12	8	3
6a	22	9	11	7

Track your harvest with a calendar, notebook, pictures, datasheets…whatever works.

pictures come with a date!

Observations are also helpful

Cultivar	Stems	Flower	Yield
‘LaBelle’	Shorter, weaker	Full double	High
‘Amandine’	Taller, sturdy	Fullest double	Medium
‘Gigi’	Taller, sturdy	Fullest double	Medium
‘Tecolote’	Shorter, weak	Weak, Single	Low

When things are a little slower…

- Total up the stems you harvested

stems ÷ area of bed = # stems per ft^2

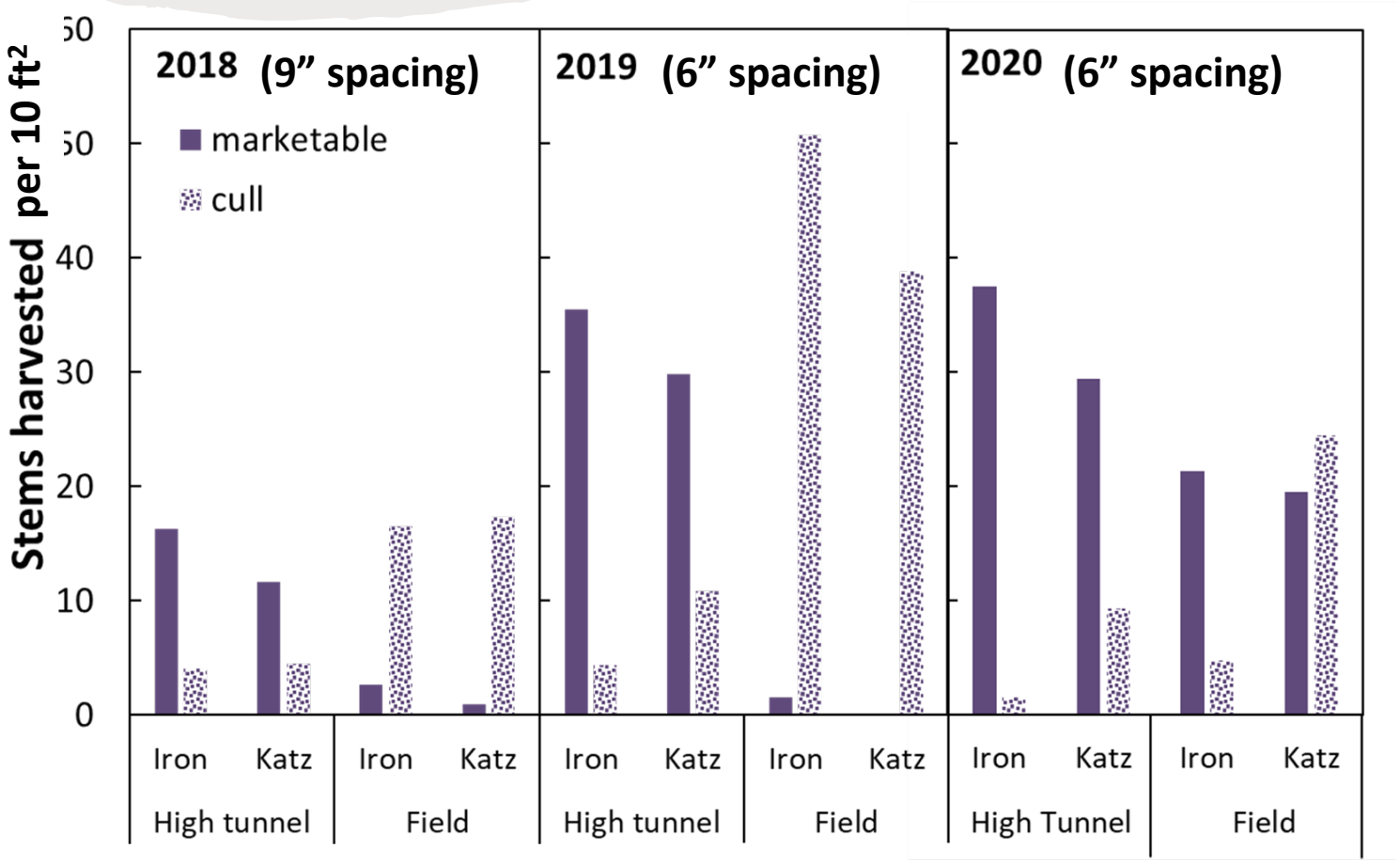
or

stems ÷ # plants = # stems per plant

- Can also look at crop timing – some cultivars are less productive, but come in at key times

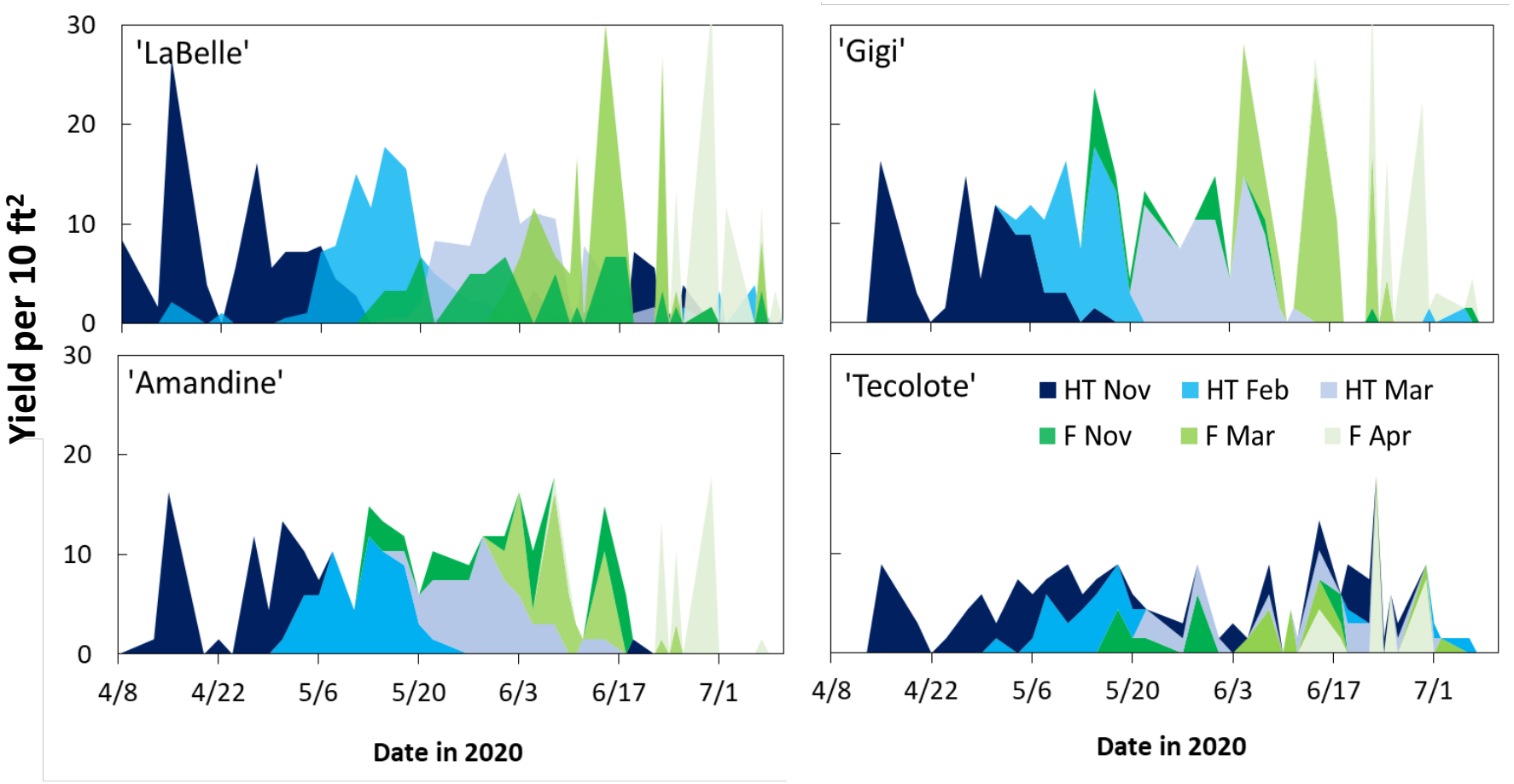
Here's what you can do with harvest data

1. **Total yield**, the production of an entire year per unit area

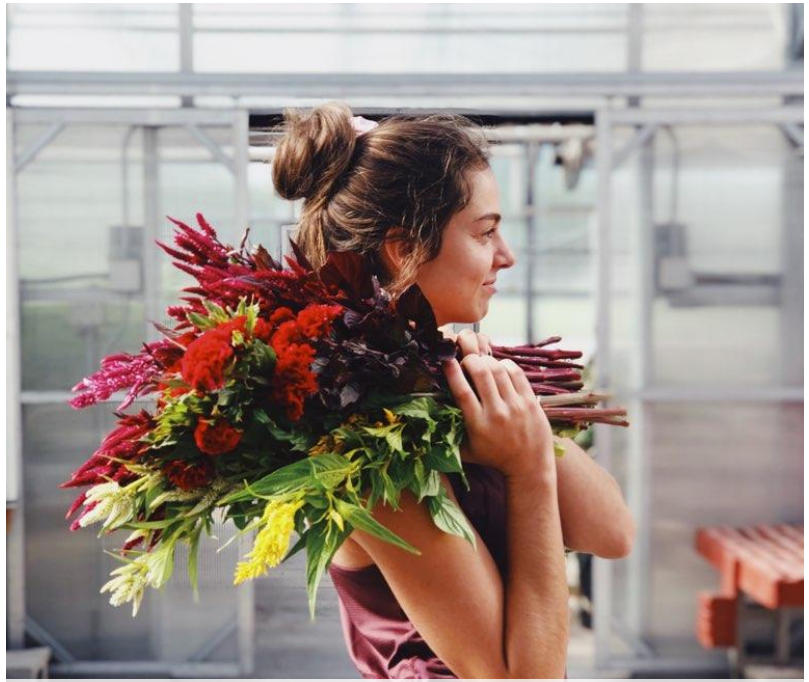


Here's another thing

2. **Daily or weekly harvests** – look at the timing.



Now let’s bring in the money side of things



Maegen Lewis
Graduate Research Assistant

Dr. Ruby Ward
Agriculture Entrepreneurship Specialist

Dr. Kynda Curtis
Agriculture & Food Marketing Specialist

Special thanks

USU flower sales & reporting

Now consider expenditures

- **What must you buy to produce the crop?**
  - How frequently do you buy it? How long does it last?
  - Write the purchase date on the item to track.
- Where do you source products? Do you need them all?
  - Seed, plugs, tubers – what is the price, quality, and shipping?
  - How much does shipping add up? Can it be found elsewhere?
  - Does the science of that amendment check out?
- **Labor: How many hours are you working?**
  - How do those hours divide among tasks?
  - What is your time worth?

Common **expenses** to consider

- Seeds/plugs/tubers
- Plastic mulch, frost blanket
- Land, water
- Stakes, trellis, drip kit
- Pest control products
- Fertilizer/amendments
- Snips, preservative
- Miles driven

Tip: save receipts – stuff them in a folder when times are hectic

- Keep track of how much you are spending to produce the crop
- How much does each cost and how long is it useful?
- Save receipts – stuff in a folder until there is time to add up expenses
- Total cost / useful life = Cost per year

Don’t forget labor!

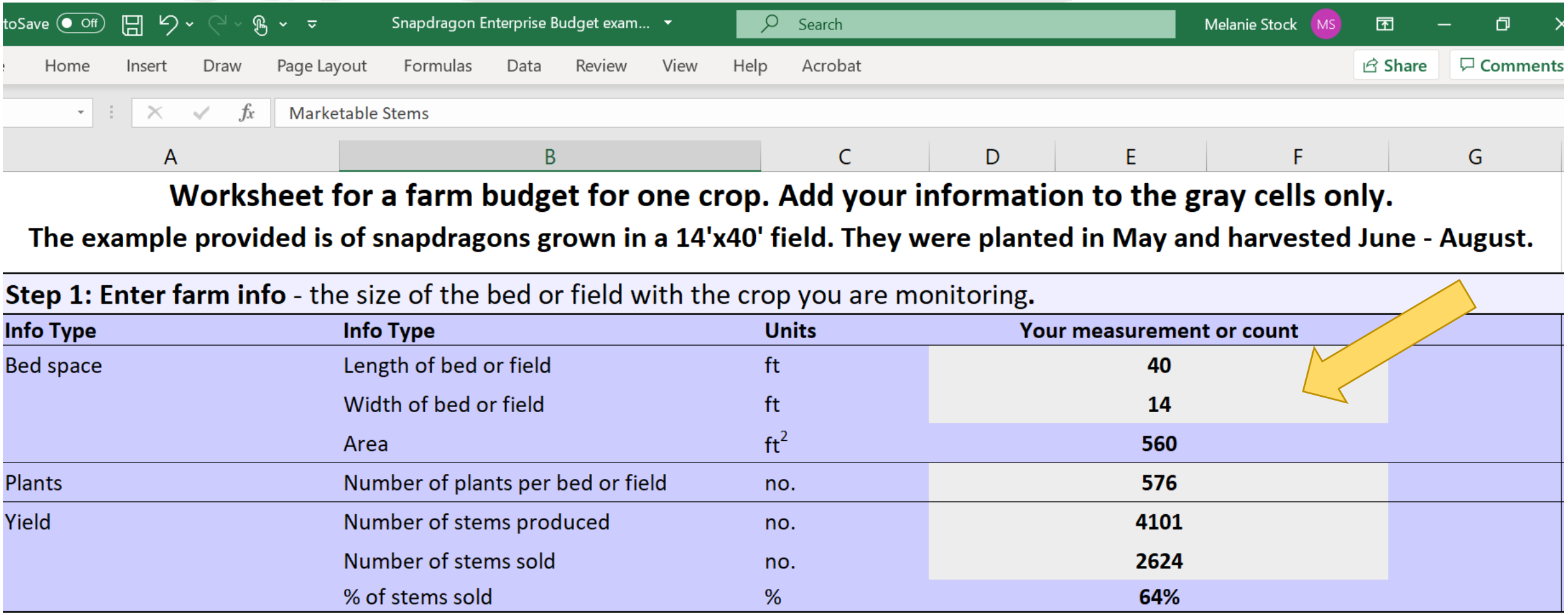
- Start seeds/plugs/tubers
- Apply fertilizer/amendments
- Install and fix irrigation, mulch, trellis, frost blanket
- Vent low or high tunnels
- Harvest and process stems
- Marketing/social media?
- Sell – time driving, at market, with florists
- Are kids helping?

Last piece of info - How well is it selling?

Assess the market. Track sales or stem use. How much sells – or doesn't – each day/week/month?

- Bouquets – estimates each week on stem use
- Save receipts from florists – how much do they pay and buy? Does it require a long pitch?
  - Price per stem or bundle
  - Holiday price bumps?
- Counts – periodically pick an average day and count how much and what goes into the compost

Bringing it all together – enter farm info



Worksheet for a farm budget for one crop. Add your information to the gray cells only.

The example provided is of snapdragons grown in a 14'x40' field. They were planted in May and harvested June - August.

Step 1: Enter farm info - the size of the bed or field with the crop you are monitoring.

Info Type	Info Type	Units	Your measurement or count
Bed space	Length of bed or field	ft	**40**
	Width of bed or field	ft	**14**
	Area	ft^2	**560**
Plants	Number of plants per bed or field	no.	**576**
Yield	Number of stems produced	no.	**4101**
	Number of stems sold	no.	**2624**
	% of stems sold	%	**64%**

Enter sales

Step 2: List sales by keeping a record of how many stems were grown, sold, and for what price.

REVENUES - Total Sales	Stem grade	Units	Total stems	Percent sold	Price or Cost/Unit	Total
	Marketable Stems	Stems	1640	100%	$1.20	$1,968.00
	Cull Stems	Stems	2461	40%	$0.75	$738.30
					Total Revenues >>>>>>	**$2,706.30**

stems sold x price per stem = total sales

total sales / land area = income per unit area

Enter expenses from supplies

Step 3: List operating expenses by recording what you buy, its price, and how many years it lasts.

SUPPLY EXPENSES	Item	Units	Price/unit	No. of Units	Years until replac	Annual expense
Preplant and Preperation	Tiller rental (4 hours)	Half day rental	$50.00	1	1	$50
	Slow release fertilizer (14-14-14) 5 lbs bag.	5 lb bag	$19.95	1	2	$10
	Urea (46-0-0) 5 lb bag.	5 lb bag	$19.99	1	5	$4
	Drip irrigation (kit - 1,000' drip)	Kit	$167.21	1	4	$42
	1 mil Plastic mulch (4'x600')	Roll	$60.95	1	7	$9
Planting and Maintenance	Plugs	Plug	$0.22	576	1	$127
	Stakes (36 - 1"x2"x48" stakes)	12 pack	$14.89	3	3	$15
	Trellis Tenax hortnova (4'x328')	Roll	$39.99	1	4	$10
	Water Usage	Thousand gal	$1.62	8.8	1	$14
	Fertilizer (20-20-20) 4 lbs.	4 lb bag	$19.99	1	5	$4
	Systemic insecticide (16 oz.)	16 oz bottle	$23.63	1	2	$12
Harvest & Processing	Harvest Snips	Snip	$6.08	1	2	$3
	Buckets	Bucket	$3.48	6	4	$5
	Preservative (10 lb.)	10 lb bucket	$29.99	1	1	$30
	Rubber Bands (1 lb.)	1 lb bag	$2.86	3	1	$9
					Total supply expenses >>>>>>	**$343**

List activities and labor hours for each

Step 4: List labor by tracking about how many hours are spent per activity through the year, at a practical hourly wage.					
LABOR EXPENSES	**Input**	**Units**	**Hours**	**Wage/hour**	**Annual Wage**
Preplant and Preperation	Soil tillage	Hours	4	$13.53	$54
	Apply preplant fertilizer	Hours	0.25	$13.53	$3
	Install irrigation	Hours	1.5	$13.53	$20
	Cover with plastic mulch	Hours	2	$13.53	$27
Establishment & Growth	Planting	Hours	4	$13.53	$54
	Trellising	Hours	2	$13.53	$27
	Pesticide applications	Hours	2	$13.53	$27
	Hand weeding	Hours	7	$13.53	$95
Harvest & Processing	Harvest	Hours	47	$13.53	$636
	Processing	Hours	23	$13.53	$311
				Total labor expenses >>>	**$1,255**

Any additional expenses

Step 5: List additional expenses costs you incur, such co-op fees or other membership fees.					
Co-op Fees	30% charge for stem delivery and sales	Dollar revenue	$2,706.30	30%	**$812**
				Total additional expenses >>>	**$812**

Step 6: List ownership costs, such as cash overhead, land, etc.	
Land	$20
	Total ownership costs >>> **$20**
	TOTAL COSTS >>>>>> **$2,430**

Ta-Da!

- This is the net income – total profit.
- You can do fun things with this, like change the price per stem, eliminate supplies, and see how the bottom-line changes.

The bottom line of this crop	
NET PROJECTED RETURNS per 14' x 40' field space >>>>>>	**$277**
NET PROJECTED RETURNS per ft^2 >>>>>>	**$0.49**
NET PROJECTED RETURNS per plant >>>>>>	**$0.49**

Summary

- Farming is NOT easy. Record keeping adds work. BUT is a non-biased way to assess + improve the bottom line.
- Start small to keep it manageable and fun. So much can be done in winter.
- You don’t have to track everything every year. Yield, sales, expenses are all great places to start. Be critical of everything you buy.
- Pictures, notes/datasheets, receipts.

Thank you!

- Please fill out my talk's eval + the farmer survey
- Contact Info:

Dr. Melanie Stock

melanie.stock@usu.edu

@usu_smallfarms

UtahStateUniversity EXTENSION

UTAH CUT FLOWER FARM ASSOCIATION

Florage FRESH CUT FLOWERS