



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

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

This budget contains costs (preplant and site preparation, establishment and maintenance, and harvest and processing) and returns for the production and sale of snapdragon cut flowers that were grown in a field (14 feet by 40 feet, the size of one high tunnel for comparison). Production methods, yield, costs, and pricing were determined from Utah State University research trials, as well as feedback from Northern Utah producers. The costs and returns represent typical production in Northern Utah, but should be adjusted where necessary for individual situations. Site selection, variety, pest management, and other practices will impact costs and returns to a cut-flower operation.

Farm

This publication assumes the use of one 14' x 40' field, with two beds, each 4' x 40' and spaced 7' apart from center to center, using a variety of cultivars including, 'Animation', 'Chantilly', 'Legend', 'Madame Butterfly', 'Monaco', 'Potomac', and 'Rocket' planted in soil with black plastic mulch with drip irrigation. All costs represent the production of multiple cultivars within the 560 ft² field on land currently owned.

Crop Pricing

Stem pricing was calculated based on market testing conducted with florists across Cache Valley and the Wasatch Front from May through September of 2019 and 2020. Pricing will vary by geographical region. Average prices were used to calculate revenues in Table 1. High-quality, marketable stems were sold in bundles of 5 stems for \$6.00 (\$1.20 per stem) and low-quality, cull stem bundles sold for \$3.75 (\$0.75 per stem). Stems

were graded as marketable when they were at least 18 inches, straight, and undamaged. Cull stems were shorter than 18 inches, deformed, or damaged. Stems were sold through a local cut flower co-op for a fee of 30% of revenue, which is calculated as 100% of marketable stems sold and 40% of cull stems sold. This cost is included in expenses.

Calculated Yield

Yield data for stem quantity and quality from Northern Utah were totaled across two harvest periods. The first period represents yields of a typical harvest season from June-July. After yield declined in July, stems were cut back and allowed to regrow for a second harvest period in August-September. On average, harvest during the first period produced 1,277 marketable stems and 1,665 cull stems. Harvest during the second period produced 363 marketable stems and 796 cull stems. Based on market demand in 2019, 100% of marketable stems (i.e. 1,640 marketable stems) and 40% of cull stems (i.e. 984 cull stems) are sold each year.

Supplies

Production supply costs were based on average prices available in Logan, UT, and online in fall 2020, but may vary across regions and suppliers. All supplies must be purchased in year 1, but many last multiple years. Therefore, the cost of each input is annualized across the quantity used per year and the number of years until replacement.

Preplant and Site Preparation

- Tiller rental. One half-day rental annually.
- Slow release fertilizer (14-14-14). 1.8 lbs of a 5 lb bag are needed annually; a 5 lb bag is purchased every two years.
- Urea fertilizer (46-0-0). 0.9 lbs of a 5 lb bag are needed annually; a 5 lb bag is purchased every five years.
- Drip irrigation kit. 250 ft of dripline will be used and replaced each year from a kit with 1000 ft of dripline; a new kit is purchased every four years.
- Plastic mulch (1-mil). 80 ft of one, 600 ft roll will be used and replaced each year; a new roll is purchased every seven years.

Establishment and Growth

- Snapdragon plugs. 576 plugs are needed in the 125-cell tray size.
- Stakes. One pack contains 12 stakes and three packs are needed; stakes are replaced every three years.
- Trellis. 76 ft of trellis will be used and replaced each year from a roll of 328 ft; one roll is replaced every four years.
- Water usage. 192 gallons per irrigation with 46 total irrigation events (irrigation frequency dependent on month and environmental conditions) = 8,832 gallons. The price of water per 1,000 gallons varies across Northern Utah, and a median residential rate of \$1.62 per 1000 gallons is used here.
- Insecticide. One, 16 oz bottle is used each year.
- Fertilizer (20-20-20). 0.32 lbs of a 4 lb bag are needed per year; one 4 lb bag is purchased every five years.

Harvest and Processing

- Harvest snips. One pair is replaced after two years of use.
 - Buckets. Six, 5-gallon buckets are needed each year and will be replaced after four years.
- Preservative. 5 lb of a 10 lb package is used each year; one package is replaced after two years.

- Rubber bands. Half of one, 1 lb bag is used each year; one package is replaced after two years.

Hired Labor

Labor was priced at \$13.53 per hour (\$12.00 per hour plus employer-related costs), per feedback from local growers and within the low-end of wages reported by the USDA-ERS (2019). Quantity of hours per activity was averaged across 2018-20 field trials. Depending on available tools, the region, and experience, labor costs may vary.

Summary of Results

The net income resulting from stems harvested from a 14' x 40' field (two, 3' x 40' beds) and sold at a price of \$1.20 per marketable stem (100% sold) and \$0.75 per cull stem (40% sold) is \$116.41 (\$0.21 per sq. ft) for the first harvest period, \$154.32 for the second harvest period (\$0.28 per sq. ft), and \$270.74 (\$0.48 per sq. ft) totaled across harvest periods in one year (Table 2).

Disclaimers

This project was funded by the Utah Department of Agriculture and Food (UDAF) through a Utah Specialty Crop Block Grant under a cooperative agreement. The information reflects the views of the author(s) and not UDAF.

References

Curtis, K., S. Olsen, T. Knudsen, and K. Wagner. 2015. [Utah Urban Small-Scale Mixed Vegetable Production Costs and Returns - 5 Acres, 2015](#). Utah State University Extension. AG/Applied Economics/2015-03pr.

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Table 1. Snapdragon cut flower production budget for one 14'x40' field, during April – September.

REVENUES						
	Input	Units	Total Stems	% Sold	Price/Unit	Total
1st Flush	Marketable	Stems	1277	100%	\$ 1.20	\$ 1,532.40
	Cull	Stems	1665	40%	\$ 0.75	\$ 499.50
2nd Flush	Marketable	Stems	363	100%	\$ 1.20	\$ 435.60
	Cull	Stems	796	40%	\$ 0.75	\$ 238.80
TOTAL REVENUES						\$ 2,706.30

OPERATING EXPENSES						
Supplies	Input	Units	Price/unit	Quantity	Years to Replacement	Annual Expense
Preplant & Site Preparation	Tiller rental	Half day rental	\$ 50.00	1	1	\$ 50.00
	Slow release fertilizer (14-14-14)	5 lb bag	\$ 19.95	1	2	\$ 9.98
	Urea fertilizer (46-0-0)	5 lb bag	\$ 19.99	1	5	\$ 4.00
	Drip irrigation kit	Kit	\$ 167.21	1	4	\$ 41.80
	Plastic mulch (1 mil)	Roll	\$ 60.95	1	7	\$ 8.71
Establishment & Maintenance	Snapdragon plugs	Plug	\$ 0.22	576	1	\$ 126.72
	Stakes	12 pack	\$ 14.89	3	3	\$ 14.89
	Trellis	Roll	\$ 39.99	1	4	\$ 10.00
	Water usage*	1000 gallons	\$ 1.62	8.8	1	\$ 14.31
	Insecticide*	16 oz bottle	\$ 23.63	1	1	\$ 23.63
	Fertilizer (20-20-20)*	4 lb bag	\$ 19.99	1	5	\$ 4.00
Harvest & Storage	Harvest snips	Snip	\$ 6.08	1	2	\$ 3.04
	Buckets	Bucket	\$ 3.48	6	4	\$ 5.22
	Preservative*	10 lb bucket	\$ 29.99	1	1	\$ 29.99
	Rubber bands*	1 lb bag	\$ 2.86	3	1	\$ 8.58
Total Supply Expenses						\$ 354.86

Labor	Input	Units	Quantity	Wage	Annual Wage
Preplant & Site Preparation	Soil tillage	Hours	4	\$ 13.53	\$ 54.12
	Apply preplant fertilizer	Hours	0.25	\$ 13.53	\$ 3.38
	Install irrigation	Hours	1.5	\$ 13.53	\$ 20.30
	Cover with plastic mulch	Hours	2	\$ 13.53	\$ 27.06
Establishment & Maintenance	Planting labor	Hours	4	\$ 13.53	\$ 54.12
	Trellising	Hours	2	\$ 13.53	\$ 27.06
	Pesticide applications*	Hours	2	\$ 13.53	\$ 27.06
	Hand weeding*	Hours	7	\$ 13.53	\$ 94.71
Harvest & Storage	Harvest*	Hours	46.70	\$ 13.53	\$ 632.19
	Processing*	Hours	22.8	\$ 13.53	\$ 308.82
Total Labor Expenses					\$ 1,248.82

Co-op Fees	Description	Unit	Quantity	Revenue	Fee	Total Cost
	30% delivery charge*	Stems	2624	\$ 2,706.30	30%	\$ 811.89
TOTAL OPERATING EXPENSES						\$ 2,415.56
OWNERSHIP COSTS						
	Land**					\$ 20.00
TOTAL OWNERSHIP COSTS						\$ 20.00
TOTAL COSTS						\$ 2,435.56
NET PROJECTED RETURNS (14'x40' Field)						\$ 270.74
NET PROJECTED RETURNS (ft²)						\$ 0.48

*Costs include first and second flush inputs.

** Land. One snapdragon field uses less than 2% of one acre and is assumed to be on land already owned. However, \$20 is used as a proxy (2% @ \$1,000 / acre lease) (Curtis et al., 2015).

Table 2. Net income for first flush, second flush, and the total across one growing season (1st & 2nd Flush).

Flush	Revenue	Costs	Net Income (14' x 40' field)	Net Income (ft ²)
First flush	\$ 2,031.90	\$ 1,915.49	\$ 116.41	\$ 0.21
Second flush	\$ 674.40	\$ 520.08	\$ 154.32	\$ 0.28
1 st & 2 nd flush	\$ 2,706.30	\$ 2,435.56	\$ 270.74	\$ 0.48