



Heated Greenhouse
Crate Growing Over Winter



- *Owner Anna Jane Kocon
- *17 years flower farming, 8 years business owner
- *Year round flower production
- *Growing region Northeastern US
- *Rhode Island Zone 6b, we are coastal with a Microclimate (salty air)



1/3 owner of Farm and Flora Collective

- *Three women owned businesses: Wildseason Florals, Brigid Finn Fine Gardening, LSFCo**
- *LSFCo uses 3 heated greenhouses, and 1 unheated greenhouse**
- *Shared utility costs, collaborative space usage, bulk soil/plant shipping and sharing**
- *Monthly rent and building maintenance**
- *Separate project from home farm and leased parcels**



Farm and Flora Collective is ending, but it provided an important stepping stone to moving our winter production to our home farm...not to mention boosted my knowledge and confidence on how to translate it to the home farm....

We are currently building a heated greenhouse on our home farm. We will be primarily focusing on precooled tulips...but also will be growing butterfly ranunculus, anemone, foxgloves and snapdragons in there over winter



**With the support of
The Farm and Flora Collective...I was willing to try heated winter
crate growing with these realistic considerations:**

- *upfront overhead—a big investment to start without guarantee of success**
- *forfeiting “calmer” Winter months—no psychological or physical rest during Winter—though the work is definitely a different pace**
- *Long growing period in tricky and unpredictable season—skilled growing knowledge required**
- *Small margin for error—profitability can get razor thin based on how Winter fares and the \$ return takes 4 ish months**
- *Every single stem MUST sell for top dollar—no “hoping” they will sell...THEY HAVE TO SELL....you can not CHANCE it.**



Planting schedule for Winter Crate Growing:

- *All crates dumped, cleaned and ready by mid-late September
- *Soil purchased (we use PROMIX 830) and delivered by mid September-6 pallets of 40 x 50lb bgs
- *All Crates filled and amended by Oct. 1-15
-1/2 soil bag per crate, 1/2 cup “booster” mixed into top few inches-fill to just below handle of crate
- *All crops soaked, planted and recorded by the end of October (sometimes later based on shipping issues)
- *We are usually aiming to have the majority of this done before we dig out our dahlia field-mid November





Crops We Currently Grow at Farm and Flora Collective

- *Butterfly Ranunculus
- *Italian Ranunculus
- *Foxglove
- *Tulips
- *Narcissus
- *Sweet Peas
- *Anemone
- *snapdragons

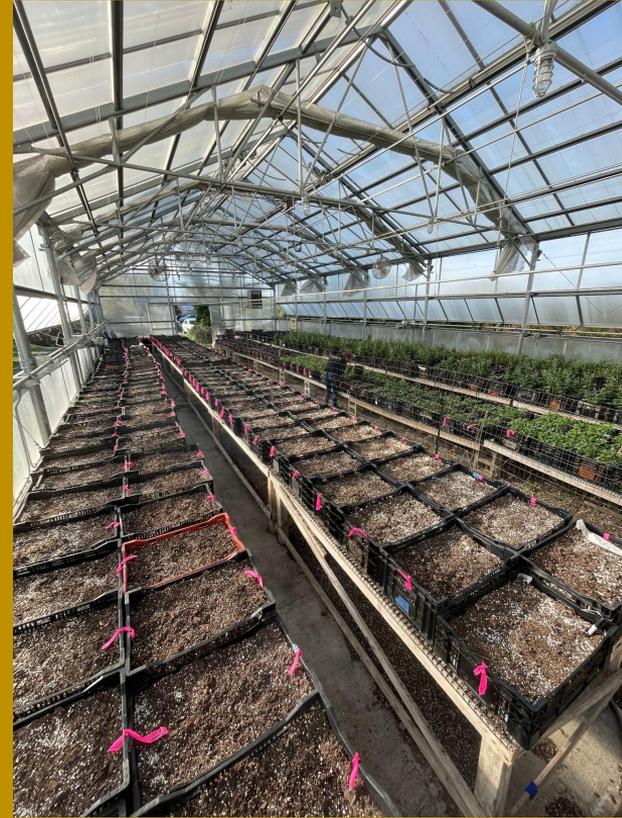


Other Crops we have tried in this setting with mediocre results

- *Snapdragons - chantilly and madame butterfly
- *Viola/pansy - aphid prone
- *Delphinium - bellamosum series - not enough stems to make it worth the space
- *nigella - spindly (tried two years)
- *freesia - long grow time, rodent pressure
- *lisianthus - thrips
- *heirloom mums - thrips and time of year was tough
- *dahlias - we tried plugs and tubers - it was ok but the time of year was hard

Our Biggest Enemies of Heated Winter Growing:

- * **Lack of airflow** – fans running, open sides as much as possible but we don't live there, so it can be tough
- * **deep freezing temps** – electricity goes out or edges of structure freeze – frost damage to foliage must be cleaned off
- * **powdery mildew** – get ahead of the issue – airflow, spraying schedule of rotating zerotol and neem oil
- * **aphids/thrips** – literally daily scouting and catch early – spray with organic insecticidal soap or other treatment (may need to forfeit crates or move them to prevent further infection)
- * **fungus gnats** – HUGE ISSUE – disinfecting crates prior to plantings, weekly spray of zerotol, larvae eats roots of young plants
- * **rodent** – everybody is there but primarily rat and mice





Non toxic Chemicals, fertilizers and treatments of Winter Grown Crops

- *Zerotol - a hydrogen peroxide preventative for fungus gnat and powdery mildew - we use this to clean everything
- *Neem - primarily used for powdery mildew in this setting
- *Pyganic - aphid
- *Conserve - aphid, fungus gnat, thrips
- *Azamark - aphid, thrips
- *Organic custom fertilizer top dress from Buxton Hollow Farm
- *Organic liquid feed through watering - sea crop 16, AGT-50
- *Mycorrhizal inoculant "ultrafine endo" powder mixed with first watering after transplant
- *Do not use fish emulsion in winter - attracts critters and molds easily



Rodent Control—they can easily take you out in one night BE PREPARED

- “JAWS” rodent traps-weekly disinfected and rebaited-lots of traps
- Dogs-let them pee and poop around
- Cats-nothing beats a good barn cat
- Dog and cat hair balls stuffed into holes you see the rodents coming from
- Peppermint oil is also helpful honestly-it is aggressive for their little noses
- We have found keeping crates on tables very helpful-but still need trap maintenance





All greenhouses have automatic heat (natural gas) to 42 F and kick on at 34F.

*Anemone (ETA late Jan-Feb), Italian Ranunculus (ETA March) and Butterfly Ranunculus (ETA March) are all soaked for 3 hours, with an additional 30 minute fungus soak and directly planted into the crates

*Snapdragon-madame butterfly and chantilly series-November plug arrival, plant direct into crate and ETA March-April

*Narcissus and Tulips are planted 50-60 bulbs per crate on arrival-succession planted and bloom Jan-March

*Foxglove are ordered plugs directly planted on arrival mid Nov into crates-ETA early April-VERY successful in this technique

*Sweet Peas are started in house in October and transplanted in mid November to crates-ETA late March-we think direct sown seed is best for overwinter growing



Now for a reality check...what does all this COST???

Gross Profit:

It only includes the costs associated with the certain crop, not the fixed costs of the farm (mortgage, weekly salary employee, etc)

Net Profit:

What is left after all costs are calculated. Meaning all farm set expenses beyond just the expenses incurred in growing the specific crop.



Yearly General Costs for Winter Growing

- *\$600 month rent/utility=\$7800 year ($\frac{1}{3}$ of total as we share with Jill and Brig)
- *8 palettes of potting soil and fert=\$6200 plus delivery fee (which has skyrocketed lately)
- *farm labor=around \$14,000 between Nov-March (varies a bit with extra folks) for salaried employee
- *Corms, bulbs, plugs, etc.=\$12,000 per season (varies and this does not include the unheated and home farm production)

We put out roughly \$40,000 to Winter Grow at Farm and Flora Collective before the end of the year



Italian Ranunculus-ETA March

Dream earnings:

- *86 crates x 12 plants=1032 plants
- *if each plant produces 3 good stems at \$2.50 per stem=\$90 per crate potential earning
- *86 crates COULD produce 3096 stems and earn=\$7740

Expenses:

- *12 plants x .70 cents x 86 crates=722.40
 - *\$8 soil per crate x 86=\$688
 - *Cost of labor hard to establish-mostly crate filling, planting and then watering through Winter-estimated \$1500
- Total expenses: \$2910.40

Gross \$7740-expense \$2910.40=FROM THIS CROP
\$4829.60

(Does no include rent or unseen costs/crop loss)





Foxglove-ETA late March early April

Dream earnings:

*90 crates x 6 plants=540 plants

*if each plant produces 2 BIG stems at \$5 per stem=\$60
per crate potential earning

90 crates COULD produce 1080 stems and earn=\$5400

Expenses:

*6 plants x .50 x 90 crates=\$270 plants

*\$8 soil x 90 crates =\$720

*Cost of labor hard to establish-mostly crate filling,
planting and then watering through Winter-estimated
\$1500

Total expenses: \$2490

\$5400-\$2490=**\$2910 profit**

(Does no include rent, maintenance, pest treatment or
unseen costs/crop loss)





Anemone-ETA Mid Feb

Dream earnings:

*86 crates x 15 plants=1290 plants

*if each plant produces 4 good stems at \$1.50 per stem=\$90 per crate potential earning

*86 crates COULD produce 3096 stems and earn=\$7740

Expenses:

*15 plants x .50 x 86 crates=\$645

*\$8 soil per crate x 86 crates =\$688

*Cost of labor hard to establish-mostly crate filling, planting, watering, spraying and harvest-estimated \$1500

Total expenses: \$2833.00

\$7740-\$2833=**\$4907 profit**

(Does no include rent,unseen costs/crop loss, delivery expenses etc etc)





Tulips-ETA Jan-March (precooled)

Dream earnings:

*60 crates x 50 bulbs=3000 tulips

*if each bulb produces 1 good stem at \$3.00 per stem=\$150 per crate potential earning

*60 crates COULD produce 3000 stems and earn=\$9000

Expenses:

*50 x .40 bulb x 60 crates=\$1200

*\$6 soil per crate x 60=\$366

*Cost of labor hard to establish-mostly crate filling, planting, watering, and harvest-estimated \$500

Total expenses: \$2066.00

\$9000-\$2066=**\$6934 profit**

(Does not include rent,unseen costs/crop loss, delivery expenses etc etc)





Butterfly Ranunculus - ETA March

Dream earnings:

- *172 crates x 4 plants = 688 plants
- *if each plant produces 4 good stems at \$4 per stem = \$64 per crate potential earning
- *688 crates COULD produce 11,008 stems and earn = \$44,032

Expenses:

- *4 plants x \$2.64 each x 688 = \$7265.28 in plant cost
 - *\$8 soil x 688 = \$5504 soil cost
 - *Cost of labor hard to establish - mostly crate filling, planting and then watering, spraying through Winter - estimated \$2500
- Total expenses to grow the crop = \$15,269.28

Gross \$44,032 - expense \$15,269.28 = **FOR THIS CROP**
\$28,762.72

(REMEMBER - This is just a vacuum of looking at this one crop in this one context - Does not include rent, unseen costs/crop loss, delivery expenses, other farm expenses etc etc)





**Overall Potential profit to gain from Winter Grown Flowers
(does not include income from CSA sales, dahlia tuber sales, consulting services and
winter courses we teach online):**

Butterfly ranunculus, Italian Ranunculus, Anemone, Foxglove, Tulips=\$45,000.00

Narcissus=\$2500

Sweet Pea=\$2500

Gross profit on these crops alone-about \$50,000

Other ongoing Farm expenses: \$30,000 (over the 4 months of growing with no cut flowers being sold)

Roughly \$20,000 net profit to gain from growing Winter flowers if everything goes perfectly-no mistakes, no loss, and every single stem is sold for top price. Is \$20,000 worth 4 months of stress fest?



Almost more important MAJOR benefits of the Farm and Flora Collective:

- *Mother plant and other plant storage we normally would not have room for
- *Plenty of Work in a safe location for employees through Winter
 - *Propagation and seeding space
 - *Dahlia tuber storage
- *A constant very busy florist IN HOUSE to be selling to—but she cannot move all our flowers
- *We are first to market by almost 2 months before everyone else in our area
- *We grow an entire plant sale here, AND can presprout large amount of dahlias





Ask yourself these things:

- *How much money would you need to earn to make the stress and risk level worth It? (keeping employees working all winter is a huge bonus here)
- *How will you get the flowers where they need to go in the Winter months? (freezing temps, storms, vehicles)
- *Why do you want to do this? What are your business and personal goals?
- *Do you have a market that can pay top price for your flowers in late Winter?...and what if they aren't "top price" worthy? Where will they go?



I hope I did not
scare you too much!
But I also hope I saved
you a lot of trouble.

Thank you!
Q and A time!