RADISHES / SALAD TURNIPS

Raphanus raphanistrum sativus

Final Crop Analysis

Estimated Harvest goals:

Market	**Total Yield Goal** [lbs/units]	**Notes**
CSA	1664 radishes	4 radishes per CSA member at 4 pickups 104x 4 x 4 =1664
FM	28lbs in total	Dispersed 3-5 lbs at each market which makes no sense, so approximately a basket at 2-4 markets seem more fitting
BIG Y's	135 lbs in total	BIG Y A – 60 BIG Y N -45 BIG Y GF 30 lbs
Student Biz/ Dining	None	I feel like this may change if we have a surplus or need something to do with them

Cultivars/varieties and seeds:

Cultivar	**Source**	**Amount**	**Cost**	**Org or Untreated?**
Crunchy King	Johnny's	5000	21.40	Org
Sora	Johnny's	5000	11.30	Org
Pink Beauty	Johnny's	12675	12.30	Org
KN Bravo	Johnny's	2287	13.52	Org
Hakurei	Johnny's	11353	23.20	Org

Reasons for selecting these cultivars:
I selected these for a few reasons, a lot of them were from the past student farmer's as well as some sway from a few of the UMass Dining Chefs. Also, Jackie recommended a few and I didn't totally feel strongly about them. I did however make sure to have the generic "red" radish but also keep it spicy with some new and fresh ones. People love purple.

Did the variety description meet your expectations? Why or why not?
As of the first week of October, the radishes and salad turnips that have come in to their size. We keep forgetting to harvest and offer them, but we will fix that soon. They look good visually and are spicy to the taste. As of 10/1 the variety descriptions online do meet my expectations, but they will be easier to tell when they come to their full fruition.

Would you recommend these varieties again?
Yes, they have been hashed and fleshed out by past student farmers and seem to continue to be a primarily reliant crop and don't require too much work as they are direct seeded.

Make suggestions for two other varieties you think would be interesting to try in 2020. List your reasons.
Make sure to understand the poundage / the yield better than I did because a lot of my notes don't totally make sense. By this I mean how much yield per foot, have a strong idea of what this means. I also would wish I understood the purpose of radishes / salad turnips better, so I could better gear which markets we send them to. Luckily, nothing is set in stone and we can still offer to dining even though that was initially planned. We shall see how this turns out. Two new varieties I will recommend trying are the Green Luobo because it's green and fun, also meant to be fermented and the Shunkyo Semi Long because the shape is different and long.

Farmer Notes: *Make sure to ask questions and do your research, this crop can be deceivingly confusing.*

How and when the crop was seeded/transplanted:
Direct seeded on July 31st direct seeded using the JANG JP, the Roller code used was 13/64 and M-6 / M-12 at a Hole Depth of 2 mm.

Field Planting Info

Planting #	Plant date	Number of row feet planted	Rows per bed	Planting method	Notes on survival in field
1	8/31	550ft	3	DS with the Jang	Didn't really receive that much attention, suffered a lot of pest and maggot damage

Direct seeding:

Planting #	Seed date	Seeder Used	Settings Used	Notes on germination
1	8/31	JANG JP	Hole depth 2mm Roller Code 13/64	Took easily

Farmer Notes: *Varieties included Crunchy King, Sora, Pink Beauty, KN Bravo, and Hakurei. It was planted in row that had lettuce and cucumbers before it, also since it was a new seeder we made sure to follow it check that the seeds were getting properly buried, extra seeds are good for the case of trial and error.*

Planting Information:

Expected yield/ft: 1lb per foot
Direct seed or transplant: DS
In-Row Spacing: 1 inch

Between Row Spacing: 6 inches

Number of Rows Per Bed: 3

Bed Feet planted: Length of B

Field Planted In: approximately 550 feet

Number of succession plantings: N/A 1 (five varieties in one row)

Broadcast Fertility: 5/13 Composted Chicken Manure 1000 lbs/acre

Additional Fertility: None

Cultural practices:
After the seeds germinate, the crew crawled once or twice after that it was relatively hands off. "Table" Radishes only take about four weeks so it's great that they got in by the end of July considering how busy things were whereas daikon radishes will take about two months to reach their size. If there was more time it would have been great if we could have done another quick crawl and thinned them out.

Notes on Irrigation: No irrigation used in B, radishes typically don't need a uniform water system as the South Deerfield fields are relatively moist and soft ground.

Diseases observed:
I believe that there was a little alternaria leaf spot because of the damage on the foliage. This can be easily prevented by buying or selecting disease free seeds or treated seeds, look for the hybrids. This can also be caused by certain debris left in the soil, like cruciferous weeds. Crop rotation is important.

Potential Disease Threats: What should farmers of the future expect to see?
Something to look out for is downy mildew, this is such a common disease and can affect the crop at the most important stage right when it's germinating. This can be managed by early in the day irrigation and good air circulation, damp conditions allow this disease to do well. Another generic threat to look out for is seed decay, make sure to pick a treated seed.

Insect Pests observed:
Cabbage root maggots and flea beetles
Damage caused: cosmetic really, but small and large holes in the crop, inside flesh did not seem to be affected
How was it scouted or observed: Post-harvest, damage is noticeable.
Action(s) taken: Sorted for quality, at this point not much to do. The threshold for "ugly" vegetables for the CSA is greater than say for Big Y and Dining. Ugly vegetables are in and acceptable to an extent.
Potential Insects: In the future the farmer should look out for cabbage root maggot, cutworm black, cutworm variegated, flea beetle crucifer.

Do you think the production practices needed for this crop was worth the yield that we received?
I think putting over row cover even without hoops would be helpful and create a layer from the pests and hopefully a barrier between any other potential threats. This could be to protect from small critters like mice, squirrels, deer, and whatnot. Most of the damage was cosmetic and although this was predominantly a CSA crop in 2019, it's worth considering the cost benefit / opportunity cost of better preserving them so that you can sell more of them to your wholesale markets.

Harvest & Storage:

When was the crop ready for harvest? How did you know?
The table radishes were ready about four weeks after seeding, The diameter reached the size bigger than a ping pong ball and the daikon were ready about 2 months after the initial seeding and those resembled the size of a small sweet potato.

How was it harvested?
Picked and or picked and topped. This year we didn't bunch them with the foliage because of damage so they were not bunched like they usually are, but given out "loose" as seen in the photo at the beginning of the crop analysis.

How was it washed at the wash station?
Straight to the root washer! One black crate in and pushed through with our awesome broom.

List different post-harvest practices for each market (if any)
Same for all.

List different shipping practices for each market (if any)
Same for all, difference when going for catering is it goes in a wax bushels rather than a typical lock lid for the CSA.

What different or improved harvest and shipping recommendations can you make?
If their topped there are no greens to really go bad, so they can last longer in storage

Storage and post-harvest handling:

Curing: Not necessary.

Washing before storage: Yes! in the root washer, unless they are going to be in cooler awhile before they are handed to CSA members because then get them dirty

Storage Requirements: Table radishes topped can be stored 3-4 weeks at 32 F and 95% relative humidity in breathable packaging, i.e. the black crates. The daikon radishes can be topped and stored in similar conditions although they can last 3-4 months which is significantly longer.

How should this crop be processed for long term storage: Where your crop was stored this fall?
Brand new cooler baby! Long term storage isn't great, but I bet you could push it a wee bit more than 2 weeks, especially if they are topped, instead of a black crate I would recommend putting them in the white bags to prevent air bacteria

How well did this crop fair in storage and how did it enter storage?
Well for the most part, seemed like we had an excess more so of the turnips than the radishes

Were there any problems in storage?
No! They didn't last really all that well past two weeks so try to move them on the faster side.

What different or improved storage recommendations can you make?
Try to be more in loop about harvest because it happens very quickly especially with us not being on the farm as often. Account for what's coming out of the field and going in the cooler / what you can move to the CSA members vs wholesale.

Actual Yields and Sales: CSA

Date	**Week #**	**Unit** lbs., bunches, bags	**Amount Per share**	**Total brought to CSA**	**Notes**
9/20	2	radish count	Full 5 Half -3	4 black trays	estimate
10/11	6	radish count	Full - 6 Half - 6	5 black trays	Inside Barn market,
10/18	7	salad turnips	Full-1 Half-1	4 black trays	People didn't seem to know what they were

Other Markets – UMass Catering

9/18	Catering	$1.00 per lb	10 lbs	$10.00
10/22	Catering	$1.00 per lb	10lbs	$10.00

Review and Recommendations:

What was different between what was done and what was planned?
I had originally picked 5 varieties in total, but the radishes ended up all looking the same and the Daikon, purple salad turnip was the only one that really was different from the others and variation in size.

What worked really well and should be continued?
They were a good as I like to call taste breaker crop, it's not so much of a staple crop but one that they can add to their greens or something for a little bit of spice. Both salad turnips and radishes can be fermented!

What changes would you recommend for next year?
I would personally choose less varieties, and focus on growing two specialty radishes and salad turnips.

Should we grow this crop again? Why or why not?
Yes solid crop, but I think we can downsize how many varieties we grow!