

## **Forthcoming Field Trial, Results Forthcoming**

Results from farmer trials included the following: 1) an emergence observation (data not yet analyzed), 2) a mid-season plant vigor evaluation (data not yet analyzed), 3) an end-of-season interview, 4) yield data from 1m<sup>2</sup> x 1m<sup>2</sup> sub-samples across all farms and sites, and 5) buckwheat rate trial examining average (55 lbs live seed per acre) and high (100 lbs live seed per acre) seeding rate treatments. Specific management recommendations were provided to growers regarding seeding date, water management (based on seeding date), fertility, seeding rate and depth, and harvest practices.

## **Farmer Observations on the Potential of Buckwheat in their Farming Systems**

Based on researcher observations and grower input from end-of-season interviews, the following results and observations were obtained:

### ***Overall performance was directly related to stand establishment and vigor***

- Buckwheat did very poorly, but it was external conditions. Farmer has grown lots of buckwheat in the past that did just fine. Germ was good and so was early growth. His soil was damaged by being plowed too early, which messed with the soil structure, then it was really hot and dry and he didn't water it.
- Competition with weeds was an issues, Lambs Quarter especially. Weather was also an issue, and lack of water
- Did not suppress weeds if not vigorous
- Performance was variable, decent overall, best in lowland
- The buckwheat suppressed weeds, but only when it could grow vigorously, had a tough time competing with the wild mustard
- Weeds grew where it didn't germinate well, the timing was difficult, and this farmer couldn't get the buckwheat to dry down
- It did suppress weeds, and worked even better when interplanted with the birdsfoot trefoil
- Buckwheat suppresses weeds sort of, especially when grown with favas
- Looked good, not excellent. Especially for seeding late around June 15th or so.
- Buckwheat suppressed weeds well: Yes, pretty much. Think it did. Wasn't too dirty. Had some shade.
- It finds enough moisture to grow unirrigated, provides good shade cover for the soil, and is excellent habitat for pollinators
- No weed pressure, very few weeds germinating by the time he plants, the weed pressure is mostly from winter grasses; no major challenges, OG certified so can't spray and has some weeds. Does a lot of pre-plant cultivation. Cultivated 3 times before he planted using a finish disk.

### ***Farmers liked the flexibility of the grain, and found ways to experiment with it***

- Nice that it could be planted late, but stayed too wet, low input is nice likes that it is not necessary to cultivate the buckwheat

- It was easy to grow, a good green manure to rejuvenate soil, it grew well with birdsfoot trefoil
- Buckwheat is versatile and equals pancakes
- Interested in yield data, uses it as a summer cover crop along with fava beans. Plants it early in spring where mid-season crops will go.

### ***Harvesting buckwheat is an impediment***

- Harvest was difficult, adjusting the combine correctly was hard, the seed was too fluffy, he had to have the fan speed on the combine turned down
- Timing is difficult, and this farmer couldn't get the buckwheat to dry down
- Was supposed to sell it but he couldn't separate out the weed seeds with his combine so it was unsellable (for this reason has no future market objectives for growing buckwheat)
- Can't plant it thickly enough to be profitable, when he planted it thickly it lodged and he couldn't pick it back up with his combine (and this grower has a pick-up combine, the only one with)
- Harvested a little for household use (made pancakes!), and used as food for geese and ducks
- Big seed, looked healthy, good stem, held up good. We were just too late. Would have liked to be able to swath and pick-up combine, but don't have pick-up header. Was vigorous, didn't lodge.
- Got a bag, fed it to the ducks through the winter. The combine bogged down, didn't have a pick-up header so couldn't harvest it all. Standing in the field, burnt some of it the other day. Too thick of a stem for the combine to harvest.
- Sells to Ukrainian and Russian population, would sell to that. But didn't get enough. Was too damp even at harvest. Would have molded. Ropy. Would need to swath it and then use a pick-up header. Swath and dry, hope for 7-8d good dry weather. Bill's perspective is its so moist around here is hard to dry. Humidity he thinks is a problem. To be consistent.

### ***Identifying a market in advance will be critical***

- He might like to grow as bedding hay in the future
- The crop was not harvested, it was worked back into the soil
- Has grown buckwheat for Patagonia in the past, they wanted to make noodles with it but they didn't. They are very interested tho. Has grown 10 acres for customers/production in the past. He only wants to grow buckwheat as a cover crop unless he can make more money per pound selling it as a specialty item. He had someone come teach him and his crew how to make buckwheat soba noodles
- Wants to plant a larger trial if possible. He would be interested in any culinary varieties that he could sell for a higher price. Would be interested in a Russian culinary variety

### ***Locking in best management practices in advance is critical for such a short-season crop***

- Should have watered but ran out of time/didn't

- Even in unideal conditions for grain, very useful as a summer cover crop, but pay attention to changing conditions
- He hadn't planned on watering but he did so it would germinate. It was planted so late.
- Plant it somewhere where it can access moisture
- Water was his biggest issue, all the rest was pretty equal
- Will plant earlier, water it, and use manure or fertilizer
- Use fertilizer, don't overpack when you plant it, water it, if lodging is a concern, plant thinner and use less fertilizer
- Planted on 6/16, normally plants a month earlier. Put the buckwheat in ground that had been worked early and didn't plant spring cover on it. Did stale seed bed before planting and didn't have an issue with weeds
- Reed canary grass was its biggest competitor, and not watering it was an issue. This farmer claims the crop needs to be irrigated. Also had trouble planting earlier in the season because of weather.
- [Researcher observation relevant to many farmer comments]: Spring 2022 was cold and wet early, and then dried out fairly rapidly, delaying seeding while also making growth difficult past germination
- Buckwheat won't take frost, even the most minor frost will be bad
- No, he did not/does not water buckwheat when he grows it (despite late planting date) (Hedlin, 6/16 planting)
- Got planting depth right, his planting grew well, he planted in fertile soil that had been fertilized to grow vegetables

***Variety performance varied and did not produce an obvious preference***

- Overall germination was good
- No "worse" variety
- Horizon was the most variable, Kitawase did the best, it was competitive with the weeds and didn't lodge (Hidden River)
- Koma was the worst, it lodged and was hard to harvest but it did smother the weeds
- Mancan performed (Fagerness). It sprouted almost as fast as Horizon, had more mass (he's using it as a green manure), and didn't lodge (none of his varieties lodged)
- WSU variety as not as good, maybe yield was the same but he thought it looked more yellow. Also the WSU variety didn't have the mass and yield that the other varieties had (Fagerness)
- All went well, good emergence, Kitawase was faster (Hedlin)
- None lodged and either Koma or Kitawase was 6-8 inches taller than the others; All came up, all were good.
- Could grow commercially with a little higher ground. Koma was the best, WSU had a hard time coming up. #3 going from house to road 1-3, with #3 on far side of driveway/gravel road. Was a nice even stand, come up even, could be varying by other factors, but just seemed to do best.
- He like Mancan the best. WSU Pop and Mancan looked the most lush to him. WSU Pop was not as good (the 2nd planting he put in was better). He had no clear favorite, but he liked the ones that were denser/more lush as he was growing it for ground cover

### *Farmers are interested in specialty markets*

- Trying to expand grains/dry goods market. Will sell packaged grains at Farmers Markets, Webstore, CSA and hopefully SWWA Food Hub

### *Producers had remaining questions*

- Is there a difference between indeterminate varieties and determinate varieties?
- Is the indeterminate v determinate a factor in what varieties to grow for culinary purposes?
- Performance of different varieties. Interested in ones that are early, or if there are flavor differences among varieties. Also interest in yield data

### *Producers had observations*

- Buckwheat contamination with wheat/other crops has not been a problem, it's usually in full bloom when he turns it in, but that anything that regrows is killed by frost. He says he has no issues with buckwheat contamination
- Study up on how they grow it in other places. Find a market for it first. It is easy to grow but hard to sell for a profit
- Make sure can get it in early enough. Grow on a sufficiently dry site.
- Put on some cow manure and chicken manure on this ground. Even if don't put down, grow on the better ground. Definitely need to swath it. If the summer was really hot, might be able to combine it standing up. If the stem was under 15% moisture he thinks could possibly combine it. Get it on flat, level, not shaded ground, a southern elevation (more heat).