

Snap Beans



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Two Onion Farm

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Park Ridge Organics LLC

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Emerald Meadows

Location	Belmont, WI	Fond du Lac, WI	Columbus, WI
Acres in vegetables	4	7	15
Acres in Snap Beans	0.12	0.5	4 to 6
How these tasks are done for Snap Beans			
field prep/tillage	with a tractor	with a tractor	with a tractor
direct seeding	by hand	with a tractor	with a tractor
cultivating	by hand	with a tractor	with a tractor
spreading amendments	with a tractor	with a tractor	with a tractor
mulch laying	with a tractor	do not do this task for beans	do not do this task for beans
laying irrigation lines	by hand	by hand	do not do this task for beans
laying row cover	by hand	by hand	do not do this task for beans
spraying for pests or diseases	do not do this task for beans	with a tractor	do not do this task for beans
harvesting	by hand	by hand	with a tractor
hauling harvested crop from the field	with a tractor	with a tractor	with a tractor
incorporating residues	with a tractor	with a tractor	with a tractor
farming style	certified organic	certified organic	certified organic

Varieties & Schedule

Varieties	<p>BUSH: Provider - green bean. We have always grown this as our earliest variety because it is said to have good germination in cool soil. Carson - has been our favorite yellow bean. Much better than Gold Play, which has very small pods Jade has been acceptable as a late season green bean. POLE: Northeaster, a Green Romano type, is our favorite for high yield. Others we have tried (Fortex, Marvel of Venice, Blue Lake) have not yielded enough to justify the time spent constructing and deconstructing trellis</p>	<p>BUSH: Carson- yellow (easy to hand harvest) E-Z Pick- green (short harvest window, high yield) Jade- green (long harvest window) Provider- green (prefer for earliest planting, medium harvest window)</p>	<p>BUSH: carson, prevail, opportune, caprice</p>
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Planting Schedule	BUSH: Provider around 5/15-5/20. Carson 6/20-6/25. POLE: Northeaster 5/25-6/1.	Provider- 2nd week in May Carson- 1st week in June E-Z Pick- 3rd week in June Jade- 4th week in June Carson- 2nd week in July E-Z Pick- 4th week in July	We try to start April 20. We try to plant every 10 days in the cool part of spring. As weather warms we try to plant every 5 to 7 days. Our last planting is around August 1. Each planting is about 75% green, 25% yellow.

Field Prep

Preceding Cash Crop	Solanaceous crops > Pea/Beet/Spinach/Carrot > Spring Brassica > Bean	Anything but beans! We are on a not-enough-field-space kind of farm so crop rotation is tight. For us the field location is important (avoid the super rocky areas for beans- the beans tend to curl from lack of moisture and are spongy in texture). A previous lettuce planting or root crop planting is likely to precede beans since we plant multiple bean successions and usually a root or lettuce/greens planting is finishing when its bean time. For us it really comes down to what is open when its time to plant.	General rotation is oats with clover cover, followed with either field or sweet corn, followed with either soybean or snap bean. Snap beans are also periodically worked into the vegetable rotation if needed, usually following an early crop of lettuce, beets, or radish.
Preceding Cover Crop	Winter rye seeded preceding autumn	We use a mix of oats and hairy vetch primarily for cover cropping. This gets planted in August in areas that we are no longer using for the season. It ends up being patches around the farm and occasionally a larger area. Overall about 30% of the farms tilled land gets covered crops each season. It is by chance if a bean planting ends up following a cc area. We typically try to plant heavier feeding crops into the cover cropped areas from the fall/winter prior, not beans.	rye grain, oats, volunteer weeds
Soil Amendments	Depending on soil tests, we have sometimes applied Midwestern Bio Ag blend with micronutrients for Boron and Manganese, and/or sulfur to lower pH when it is above 7.0. Typically no N is added before beans.	We apply our farm made compost to most areas of the farm in the fall of the season. As for specific fertility inputs, we do not use anything prior to beans.	Prior to corn ,7300 gal. liquid dairy manure or 1200 lb cpm.no fertilizer applied during bean growing season.

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Bed Prep	Flail mow and rototill winter rye to incorporate. Wait at least 3-4 weeks, then rototill once more before planting.	Primary field tillage is done with a rotavator. Ideally one pass is necessary in areas planted for the first time of the season. In areas following another cash crop within the same season, there are typically 2 passes. One to knock down previous crop residue (with a possible mowing before) and a 2nd pass to further breakdown of residue and make for a decent planting soil. Although with beans, the 2nd pass isn't always necessary due to the nice large seed size of the bean.	disc corn stalks, then field cultivator with 5 bar drag, or rototiller
Notes on Field Prep			Plan ahead to allow any organic matter to break down to minimize seed germination, emergence issues. Avoid cloddy seed bed which can lead to poor emergence and difficult mechanical weed control.

Seeding

Bed Width	BUSH beans 2 rows/bed, spaced 24" apart. Beds 5' OC. POLE bean rows about 6-7' apart.	BUSH beans: 3 rows in 60" bed, 15 inches b/n rows	BUSH beans: rows are 30 in, 6 rows per pass.
Spacing	BUSH beans seeded with Earthway bean plate. POLE beans - sow three seeds per spot, spots 12" apart.	Planet Junior planters: Hole 39 (biggest option) puts out about 30 seeds/foot. We seed heavy on most direct seeded crops on our farm to ensure good germination. Seeding depth is set at about 1 inch although it seems hard to control overall and is very depending on how fluffy the soil is that's getting planted.	1 to 2 inches. About 70 to 80 lb per acre.
Mulch at Seeding	POLE beans: 4' IRT Plastic mulch is laid over pole beans before seeding		

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Seeding Process	<p>BUSH: we mark rows with C-clamps on rear of rototiller hood. Then seed by hand using bean plate on Earthway seeder, 1 pass per bed.</p> <p>POLE: lay tape measure along edge of plastic mulch. Sow using jab planter from Johnny's. One person jabs planter in mulch and other person drops seeds in. When seedlings emerge, we walk through field and manually widen the hole in the mulch above any seedlings which are trapped under mulch.</p>	<p>We use a 3 row belly mounted set up with Planet Junior Planters on our Allis G. We have a 3-4' stick handy on the G to use to rattle the seeder hoppers to ensure that the seeds are not getting hung up. It also works great to push away crop debris that might get caught up in the seeder shoes.</p>	<p>Use a tractor pulled 6 row planter. Planter makes a mark for the next pass. Plan for unplanted tracts for tractor to drive on at harvest.</p>
Inoculation		<p>We don't use and fertility amendments BUT we do use inoculant on all bean plantings. Guard N is the brand we are using. The directions call for a slurry but we have found it really messes up smooth seed distribution out of the hopper so we just add some dry to each hopper.</p>	
Water at Seeding	<p>Crop is watered in with drip tape immediately after seeding.</p>	<p>If no rain forecasted within 2 days of planting, we use our Water Reel to overhead water bean plantings.</p>	
Row Cover	<p>Floating row cover is laid over newly seeded beans if degree day models indicate seed corn maggot is laying eggs around planting time. No hoops used. Individual pieces of cover are stored over winter rolled up on 10' long steel pipe. Two people unroll cover by each holding onto one end of pipe and walking down bed, unrolling cover behind them. Edges of cover are buried with dirt thrown on cover every few feet. Cover is removed as soon as seedlings emerge. Hand crank is inserted into end of bare piece of pipe and locked in place with pin inserted through holes in pipe and crank. Pipe and crank are placed into movable spooling wagon at end of bed. We shake dirt off cover and roll it up.</p>	<p>no protection for newly planted crop</p>	<p>We sometimes use frost cover in fall.</p>

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Germination	Seed corn maggots are biggest problem. We use row cover to protect against them and avoid freshly incorporated soil organic matter at planting.	We speak sternly and directly to the planting and make sure they know who is boss. If they don't germinate we let them know that their kind will be punished and possibly prosecuted. We also just hope for the best and make sure they get watered within a few days of planting.	Plant into moisture. Avoid cloddy seed bed.

Crop Maintenance

Irrigation	Minimal irrigation - once at planting, then 1x per week during blossom time if needed to supply 1-1.5" rain.	We use our Water Reel for direct seeded crops, including beans. Ideally they would get water on them once a week if we are in a dry spell. Sometime that might get stretched to more than a week if they are in growing stage.	none
Irrigation Modifications	We only irrigate at seeding and at blossom/podset	During flower stage and the start of bean development we would take special care to make sure they get overhead watered at least once a week if not twice (in the event of no rain) until harvest ready.	
Supplemental Fertility	None	None	
Weeding	BUSH: wheel hoe between rows 2-3 weeks after planting, and then hand weed once about a week later. POLE: Weed holes in mulch and hoe edges of mulch about 2-3 weeks after planting. Cultivate between mulch using wheel hoe or BCS rototiller.	We use a basket weeder for early cultivation, usually once or twice on a bean planting. After that we use our beet knife cultivators until the plants are too large to get over (maybe another 2-3 times). We will use shovel cultivators in tire tracks only once plants are large and flowering. A hand weed is usually only necessary once for beans and we wait until plants are about 8"-12" tall (or taller).	Rotary hoe or tine weeder at 3 to 5 days post plant. Follow with second pass of rotary hoe or tine weeder at 7 to 10 days post plant (at which time the plants are fully emerged). Follow with tractor mounted cultivator 2 times. Hand weeding if lots of grass escapes, usually only early plantings. Will also hand pull weeds that are difficult for the picker to handle-giant ragweed, pig weed, water hemp.
Insects	Potato leafhopper is a problem, but we have not done anything about it. Seed corn maggot - we use row cover at planting.	Ladybug larvae is really the only pest we encounter. They don't seem to do much damage.	Very minor European corn borer, Japanese beetle. Main disease is white mold. No treatment has been necessary. Crop rotation.

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Diseases	No major problems.	Not sure what specific diseases we get since we don't get too many problems with beans. Occasional foliage problems but typically occurs after beans have been mostly harvested.	
Trellising	<p>POLE: Trellis built ~2 weeks after planting (1) 7.5' tall t post pounded every 8'. (2) Single strand red baling twine stretched about 4" above ground along row, wrapped three times around each post. (3) Single strand of 9 gauge brace wire stretched along posts, wrapped around every 5th post and end posts. Wire fastened to other posts using regular wire t-post clip. (4) Zigzag untreated sisal twine between top wire and bottom twine, coming to bottom twine every 12", above each hole in plastic mulch. This provides vertical surface for plants to twine around.</p> <p>To remove trellis, cut red twine from each post and pull out of bean plants and throw in garbage. Then cut sisal twine from top wire and let plants fall. Remove wire from posts and spool for re-use. Pull out t-posts. Collect plants and sisal twine together and carry away for composting on compost pile - do not mow them in field to avoid twine-wrapping-in-mower disaster.</p> <p>We have used hortanova mesh in past but it was difficult to remove bean vines from hortanova at end of season.</p>	no trellising	

Harvest and Yields

Harvest Window	<p>BUSH: Provider: Harvest begins 46-52 days after planting and continues for 17-21 days</p> <p>POLE: Northeast: Harvest begins 51-55 days after planting and can continue for 24 days after planting, although we sometimes stop picking before then if yields have declined</p>	<p>Seasonally: Early July through early October</p> <p>For each planting: approximately 5 days for E-Z pick, all other varieties approximately 7-14 days. Shorter harvest windows later in season for all types.</p>	<p>Start harvest first of July, and continue until frost. Each planting is harvested over a period of 5 to 7 days.</p>
Harvest Procedure	<p>Usually in afternoon. Pickers sit on strap-on milking stools and pick one row at a time into procona crates. When crate is mostly full, we dump beans into a large plastic tub of cold water with a vented plastic harvest crate inside the tub. This tub is kept shaded. When tub is full it brought into shed. We then pull vented crate out of water, weigh the beans in it and put them in the cooler. Harvest procedure is the same for BUSH and POLE beans</p>	<p>All harvesting is done by hand into 5 gallon buckets and then transferred into black bulb crates at ends of rows. Ideally we harvest after morning moisture is gone but in reality, that is not always possible. Our bean harvesting crew averages around 15-18lbs per hour.</p>	<p>Tractor and pixall bean picker. Start when dew, rain is off plants. do not harvest in mud. hand harvest in muddy field conditions.</p>
Cleaning		<p>Beans come into pack shed in dirty field bulb crates. Crates are soaked and washed in Oxonia solution before clean produce goes in them. Beans get a soaking and swishing in Tsumani solution in stainless steel sinks before going into clean crates (approximately 20lbs per crate).</p>	<p>Bean vibratory table. Beans need to be dry.</p>
Packing	<p>Beans are weighed on a scale into individual bags for CSA boxes</p>	<p>Full crates hang out to drip dry for up to 1 hour on drying racks then they are stacked 6 crates high. We use black trash bags and bag from bottom up (bottom three crates) and then another black bag or large pallet bag to cover the top three crates.</p>	<p>Market beans, csa beans cleaned back into plastic, vented harvest bins. Wholesale beans cleaned into 1/2 bu or 1 1/9 bu wax box. 10 lb, 25 lb respectively.</p>
Storage	<p>50 degree cooler. A stack of vented harvest crates filled with beans is nested into a solid harvest crate. The entire stack is covered with a poly bag to preserve moisture.</p>	<p>All stacks are on mini pallets and moved into walk in cooler using hand truck. Temp of walk in cooler is about 40 degrees.</p>	<p>Store in cooler at about 45 f.</p>

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Length of Storage	1 day	6 days	We try to have beans used within 3 days, but store longer. Yellow beans will start to look bad at damaged areas after 3 days. White mold in the field will shorten storage life. Sanidate may improve storage.
Yields	BUSH: 1.2-2.4 lbs/bed foot, typically about 1.6 (2 rows/bed) POLE: typically about 1.75 lbs/bed foot (1 row/bed), has been as high as 2.3	Provider: 1.5 lbs per bed foot Carson: 0.8 lbs per section bed foot E-Z Pick: 0.75 lbs per section bed foot Jade: 1.2 lbs per section bed foot	Yields vary widely with weather. Range 1000 to 6000 lb per acre.

Marketing

Markets	CSA	CSA, farmers market, on-site farm stand, direct to grocery, direct to restaurant	CSA, farmers market, direct to restaurant, wholesale through a distributor
CSA	Each packing day we divide previous day's bean harvest among boxes. Standard sized shares typically receive 6-12 oz beans per week, sometimes as much as 16. Typically give out 5-6 times per year.	We have three size shares, all are delivered every week (20 weeks). Ideally shares will receive the following amount of beans in a weekly share: Quarter Share= .6lbs (given up to 13 times) Half Share= 1lb (given up to 13 times) Full Share= 1.5 lbs (given up to 13 times)	1 to 1.25 lb lg., .65 to .75 sm.
Farmers Market Prices		\$3.50/lb for green and yellow in early season. We drop to \$3 when other vendors have beans or we have a surplus. On sale occasionally for \$2.50/lb.	\$3/lb
Direct to Grocery Prices		\$2.50-\$2.75/lb for green and yellow	
Direct to Restaurant Prices		\$2.50-\$2.75/lb for green and yellow	varies \$1 to \$2/lb
Wholesale Prices to Distributor			