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## (Regional)-Dos And Don'ts For Planting And Direct Harvest Of Dry Edible Beans



By: Roxie Graham-Marski Posted at: 05/09/2013 11:02 AM

*Photo: A dry bean grower direct harvests a field of beans with his combine.*

(PANHANDLE)-Direct harvest of dry edible beans is not new to the United States. It is the most common harvest method for dry edible beans in Michigan and North Dakota. But producers in western Nebraska, northeast Colorado, and southeast Wyoming are still discovering the details that will make the system work well for them.

Following are a few direct harvest related practices to consider for the 2013 bean growing season:

**Do** select fields with the most productive soils. Direct harvest combine headers perform best with bean plants that are tall, have long branches, and good growth. **Do** soil test and apply recommended levels of soil nutrients for good plant growth. But **don't** over-fertilize because the goal is bean seed yield, not just growthy plants.

**Do** leave ample surface residue from the previous year's corn or wheat crop that will protect the soil and emerging bean plants from wind erosion. The field must be very level after planting, which will leave the field vulnerable to wind erosion unless there is significant surface residue from last year's crop or from a growing cover crop. If you use tillage, **do** use a finishing tillage tool that leaves the field level and firm for the planting operation.

**Don't** use row cleaners on planters, or shanks between rows of planters, because these devices will leave small ridges which will hold the combine header off the soil surface. **Don't** create ruts or ridges with tractor or planter tires, because these ridges will hold the header off the soil, and bean plant branches and pods will tip into the ruts, increasing harvest loss.

**Do** leave the soil surface as level as possible after planting or harvest loss will be excessive. Remember the "Smith Two Rules of Direct Harvest": Rule No. 1 - Each inch the combine header is held off the soil surface means a loss of about four bushels per acre bean yield. Rule No. 2 - Cutting or losing one pod per plant means a loss of about four bushels per acre bean yield. These are very general statements, but both demonstrate the importance of keeping the field level, and selecting a variety with high pod placement and with a plant structure that allows the header to lift the pods above the sickle.

**Do** select at least three varieties to plant in the same field to learn which varieties or types of plants work

best for you for direct harvest. **Do** select varieties that stand tall, have long branches, and have most pods positioned high in the plant. **Don't** select prostrate growing varieties, or varieties with short structured plants with short branches or pods attached directly to the main stem.

That said, **don't** give up yield potential or seed quality - these are still primary variety characteristics. Visit with bean processors and neighbors who use direct harvest about varieties that have worked well with direct harvest.

**Do** consider some configuration of narrow rows and higher plant population. Traditional varieties may not exhibit increased yield with narrow rows or higher plant population, but the more upright, structured plant types tend to respond favorably to both narrow rows and higher plant population.

**Don't** consider cultivation between rows for weed control. The cultivator tools, even if set to operate "flat," will leave small ridges that will hold the combine header up off the soil surface. One more good reason to consider narrow rows and higher plant populations is that both help compete with mid- and late season weeds. Thirty-inch rows are often vulnerable to late season weeds. Row spacings of 22, 20, 15, 10, and 7 ½ inches work well with direct-harvest systems. Depending on the narrow row spacing and bean variety, plant populations between 90,000 and 115,000 plants per acre perform well for direct harvest.

Many beans that are direct harvested are planted with a drill. **Do** use a disk drill with heavy openers and good down pressure to achieve proper planting depth. **Do** achieve good seed furrow closure and firming to insure adequate soil seed contact. **Don't** use a shoe drill as these normally leave significant ridging which will hold the header off the ground at harvest.

**Don't** plant late in the planting season for direct harvest. Direct harvest tends to extend harvest date. Plant in late May or early June, not late June, for direct harvest.

If good soil moisture isn't present for rapid and uniform emergence of bean plants, **do** irrigate timely so bean plants emerge early and uniformly. Uniform emergence is very important because if parts of the field or some plants within the row are late emerging and thus late maturing, the entire field will have to wait to begin direct harvest.

Bean plants should be direct harvested as soon as the bean seeds have dried down to a moisture content acceptable by the bean processor. As time progresses beyond this point, the plants begin to "melt down," resulting in increased harvest loss. **Do** manage the crop for early and uniform emergence, and uniform growth and maturity.

**Don't** allow pivot tires to create excessive soil ridges beside the tire tracks. These ridges will either hold the header up and cause high harvest loss, or if you try to "cut through" the soil ridges, an excessive amount of soil will go into the header and eventually into the grain tank. Minimize ridge size by using a wider pivot tire, directional watering, and by not over-watering. If pivot wheel track ridges exist, some growers harvest "around the pivot" parallel to the wheel tracks to avoid excessive harvest loss or excessive soil taken into the combine.

As with any other crop practice, success of direct harvest comes with good planning and then careful management of the details.

--John A. Smith, Professor Emeritus and John A. Thomas, UNLBoxButteCounty Extension Educator