



Every Beet Counts...

Slow Down Your Defoliator

Although flail type, condition and configuration play a major role in the defoliator's performance; operational ground speed continues to be the most overlooked aspect of this implement's operation. Year in and year out, revenue per acre can be dramatically decreased due to growers topping faster than the recommended 2-3 mph. Research conducted by Dr. Larry Smith indicates significant incremental losses in recoverable sugar as defoliator ground speed increases. As a rule of thumb, for each 1 mph increase in speed between 2 and 5 mph, approximately 7 pounds of recoverable sugar per ton is lost – based on the 2010 beet payment, that's **\$36 per acre lost** for every 1 mph above the recommend operational ground speed. With the above in mind, make sure that your defoliator crew, and not just your truck drivers, understand that "Speed Kills".

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 Mike Metzger - Editor
 mmetzger@minndak.coop

There is no doubt that this year's harvest will be a challenging one. With an estimated crop that is only two-thirds the total volume of last year's boomer, it is incredibly important that each grower deliver as many good beets as they possibly can. Minn-Dak has been and always will be a very volume-sensitive business. The more beets we have to process, the better per acre return to each grower - it's that simple.

Taking the above into consideration, the Ag Staff hopes that "cherry-picking" will be a common sight this year with many growers harvesting pockets of viable acres amongst their diseased and drowned-out sugarbeets. Since the feedback buzzing around the coffee shops and cafes regarding this harvest practice has been very mixed and with many considering "cherry-picking" a waste of time and/or money, a model was designed to show the benefits of the unique harvesting concept:

Beet Payment:		\$47 / Ton	\$55 / Ton	\$63 / Ton
Harvested Yield	14 TPA	(\$73.78)	\$30.29	\$134.36
	12 TPA	(\$69.18)	\$20.02	\$109.22
	10 TPA	(\$64.58)	\$9.76	\$84.09
	8 TPA	(\$59.98)	(\$0.51)	\$58.96
	6 TPA	(\$55.38)	(\$10.77)	\$33.83
	4 TPA	(\$50.77)	(\$21.04)	\$8.69

Using last's year's beet payment of \$55 per ton as a line in the sand, this model's parameters were set downward to the 2011 Federal Crop Insurance payment per ton of \$47.00 and upward an equal value on the positive inverse. Assuming a 16.3% sugar and a crop insurance guarantee level of 75%, the model includes numerous factors for harvest inputs ranging from fuel, labor and machinery wear and tear all the way to the reimbursement from the Minn-Dak Trucking Payment – no stone was left unturned. Numbers expressed in a red background indicate that the harvest inputs will exceed the projected return per acre at that beet payment level. Green numbers are just the opposite, showing a per acre return to the grower above and beyond his harvest inputs (after insurance has paid up to the growers guarantee).

Using a beet payment of \$55 per ton as an example, it is interesting that there is a clear benefit to the grower to go after a field that would only average 10 tons per acre. While this year's payment has yet to be determined, if market prices would allow the payment per ton to exceed the \$60 mark – it would make it feasible (and profitable) for a grower to make money even harvesting fields with yields as low as 4 tons per acre. This is why implementing a "cherry-picking" system is going to be so very important - You will be making more money per acre on your own farm while doing what is right for the Cooperative.

Harvest Loss Appraisal - Find Out What's Really Going on...

The harvest loss appraisal technique was developed as a tool for both the grower and agriculturist to use as a method of evaluating what tonnage is actually being left out in the field. This quick analysis can (and has) saved Minn-Dak growers thousands of dollars by measuring tonnage not going into the truck and allowing for corrective action. It doesn't take much harvest loss to add up to big dollars - just one lost two-pound beet per 10' of row equates to a 2.4 ton per acre loss!!!

Conducting a Harvest Loss Appraisal:

1. Pick a random spot in the field behind the last round of the harvester.
2. For 22" Rows mark out 110 square feet. This equates to:
 - 6 Row Lifter - 6 rows wide X 10 foot length
 - 8 Row Lifter - 8 rows wide X 7 ½ foot length
 - 12 Row Lifter - 12 rows wide X 5 foot length
3. Glean the area, picking up any small pieces which have been broken off of the beet due to the harvester or defoliator, down to the diameter of a dime. Dig down the rows looking for broken tails remaining in the ground.
4. Weigh up the collected pieces (A pocket fish scale works very well).
5. Subtract the weight of the bucket from the weight of bucket and beets.
6. Take the weight of the beets and divide it by 5. The result will equate ton per acre loss.

Example: A beet weight of 3.75 lbs. divided by 5 = **0.75 tons per acre**

So What's Considered an Acceptable Harvest Loss???

LOW
0 to 1/2 Ton Per Acre

ACCEPTABLE
1/2 to 1 Ton Per Acre

HIGH
> 1 Ton Per Acre
Adjustments Recommended

Setting Lifter Wheel Pinch Points To Maximize Profit

Getting the beet out of the ground intact and without damage can be a big challenge as harvest conditions change from season to season, from field to field and even within the same field. Although each brand of harvester has multiple settings, one adjustment that remains constant between all lifter types and brands is the machine's pinch points.

Pinch point settings should be adjusted to represent the average individual beet weight that is being harvested. Consider the following chart:

22" Rows - 150 to 175 Beets / 100'	Avg Beet Wt. <u>Lbs.</u>	Pinch Point Setting <u>Inches</u>
18 to 22 ton	0.9 to 1.2	1 1/2 to 1 3/4
22 to 26 ton	1.1 to 1.5	1 3/4 to 1 7/8
26 to 30 ton	1.3 to 1.7	1 7/8 to 2

The 5-yr average beet weight for Minn-Dak is 1.46 lbs. With that in mind, most of the pinch points in this area should be set at 1 3/4" to 1 7/8" for most digging conditions. Wider points generally load more mud and snap beets while narrower

points will load less mud and typically slice beets. It is recommended that your pinch points be checked every year measured at the tightest point of the wheel with the lugs together.

Since consistency from row to row is vital in maximizing the harvester's extraction performance, take note to make sure each wheel is running true and is not bent or worn - also make sure that the unit's strut is not bent or twisted. While a 1/4" wobble in each wheel might not seem like a big deal, keep in mind that your pinch point on that row set for 1 3/4" will be running anywhere from 1 1/2" to 2" - if both wheels are bent then your point could be running from 1 1/4" to 2 1/4"!!!

Adjusting harvester pinch points is done simply by adding or removing shims. These shims are typically 1/8" thick and you should always have the same amount of shims in all the wheels. An odd combination of shims is usually a sign of one of the problems listed above.



Before measuring your pinch points, take the time to spin the wheels and check for bent wheels and bad and/or loose bearings. If you find a problem, make sure you correct it before taking your measurements.