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# AGNOTES

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## Managing Unharvested Beets

### General Production Considerations on Unharvested Sugarbeet Acres

When sugarbeets are left unharvested there are management considerations that should be taken for crop production on those fields for the following year.

- **Make a map of the unharvested areas for reference in future years.**
  - Unharvested areas in a field may justify separate management practices in future years than the rest of the field.
- **Defoliate the sugarbeets.**
  - A flail shredder could be used as well.
  - Defoliating/shredding will accelerate the release of nitrogen for the subsequent crop.
- **It is recommended not to till unharvested sugarbeets.**
  - Deterioration of the sugarbeet root is enhanced when it is left in the ground surrounded by soil. The beet becomes mushy as it deteriorates.
  - Not being surrounded by soil creates a dry sugarbeet carcass and greatly increases the time to decay.
  - Tillage will lift the sugarbeet root out of the ground and deposit the root nearly entirely whole on the soil surface.
  - Multiple tillage passes would be required to incorporate, increasing fuel and labor costs.
  - Dried, non-decaying sugarbeet root carcasses on the soil surface become a nuisance for the next crop in rotation.

**Leaving sugarbeet roots intact in the ground provides the highest potential for root deterioration.**



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## Loose sugarbeet roots can float.

In spring flooding situations, they can travel onto neighboring fields causing issues for that crop or accumulate in ditches and plug drainage culverts.



If planting a row crop following unharvested beets, it is recommended to plant between the existing sugarbeet rows, leaving the unharvested sugarbeet roots undisturbed without tillage in the spring. Soybeans are a recommended 1<sup>st</sup> choice to be planted.



- If spring tillage is required, consider ways to maximize stand establishment.
- If seedbeds are poor consider increasing seeding rates by 10% to overcome potential stand establishment problems with small grains, corn, or soybean.

## Fertility Management on Unharvested Acres

### Nitrogen

- Defoliation/Flail shredding of tops will accelerate release of nitrogen for subsequent crops.
- N in the sugarbeet tops will be available very early in the spring.
- The sugarbeet root material will tie up (immobilize) nitrogen making nitrogen fertility management challenging.
  - Fall soil testing will not give an accurate index of available nitrogen.
  - Spring soil testing would offer a bit more insight than Fall.
  - Soil sample areas where beets were not harvested separately from the rest of the field as available nutrient differences are likely to occur.
- Additional actual Nitrogen will be needed for all non-legume crops.
- Each ton of sugarbeet roots with yellow tops will tie up about 5-6 lbs. per acre of soil nitrogen.
- Each ton of sugarbeet roots with green tops will tie up about 2 lbs. per acre of nitrogen.
- Planting soybeans on unharvested sugarbeet acres help to avoid N management concerns.
- Spring applied N on unharvested beet acres will be more available than Fall applied N as it is less likely to be tied up by the root material.
- Apply N fertilizer as close to planting as possible to reduce nitrogen immobilization as unharvested beets decompose.
- Banded N for row crops will be more effective than broadcast nitrogen.
- Side dress part of the nitrogen after crop emergence to maximize N use efficiency for long season crops like corn.
- N management to achieve malting barley quality will be more challenging on areas of fields where beets were left.

### Phosphorus and Sulfur

- P deficiency might occur on fields testing low or very low for phosphorus.
- Use past P soil test data on unharvested acres to determine fertilization level.
- Consider applying additional P fertilizer for crops with high demand.
- Banded applications of P in the spring will be most effective.
- Starter P is recommended where practical to use it.
- Sulfur deficiency is not very likely but might occur early in the spring and disappear as crops root into subsoil sulfur supplies.

### Potassium

- Leaving sugarbeet roots and tops shouldn't alter the content of available K in the soil.
- No additional K fertilizer should be required - follow normal soil test recommendations

### Diseases

- If unharvested areas had root disease present, these areas are likely to have increased inoculum levels in that part of the field for future sugarbeet crops.
- Plant small grains to reduce disease inoculum buildup on unharvested acres.
- If beets unharvested are in a field with an *Aphanomyces* history:
  - The next time beets are planted, plant a high tolerant *Aphanomyces* variety and use Tachigaren up to 45 grams.
- If beets unharvested are in a field with *Rhizoctonia* present:
  - Consider small grains instead of beans, corn or potato that build up *Rhizoctonia* inoculum.
  - The next time beets are planted, plant a variety with high *Rhizoctonia* tolerance (all seed comes with *Rhizoctonia* fungicide seed treatment).
  - Additionally apply a *Rhizoctonia* fungicide at-plant in-furrow and time a Post *Rhizoctonia* fungicide application at the sugarbeet 4-8 leaf stage.



## Crops to Consider on Unharvested Sugarbeet Acres

### Soybean – 1<sup>st</sup> choice

Soybeans are a legume and will use nitrogen available or make its own supply making them the best choice for Nitrogen management and lowering nitrogen input costs. Consider increasing plant populations by 10% if seedbeds are poor.

### Edible beans

Edible beans are a legume and will use nitrogen available or make its own supply making them another good choice for Nitrogen management and lowering nitrogen input costs. Consider increasing plant populations by 10% if seedbeds are poor.

### Small grains

Small grains will need an extra 30 - 40 lbs. of actual nitrogen added per acre to offset soil nitrogen tied up in soil by the extra sugarbeet organic matter.

### Sunflowers

Sunflowers are a deep-rooted crop that will be less affected by nitrogen immobilization since they are planted later. They may require an extra 30-40 lbs. of nitrogen per acre to maximize yield.

### Corn

Corn following sugarbeets can experience “fallow syndrome” requiring higher amounts of Phosphorous starter fertilizer, 10 gal/a of 10-34-0 is the high limit to be placed in-furrow. Corn will need an extra 30-50 lbs. of actual nitrogen. A population increase of 10% is recommended for poor seedbeds conditions.



## Contact Your Agriculturist

Contact your American Crystal Agriculturist for the most up-to-date information on issues affecting sugarbeets in your area.

