

Management of Unharvested Sugar Beet 2009

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Introduction

- During the 2009 Sugar Beet Harvest, extremely low temperatures (as low as -13.9°C/7.0°F) persisted from October 8th to October 14th
- This frost event resulted in significant unharvested sugar beet acreage in Southern Alberta.
- Seedbed management for 2010 cropping was a concern to growers.
- A strip trial was initiated to evaluate different tillage options on unharvested sugar beet.

Objectives

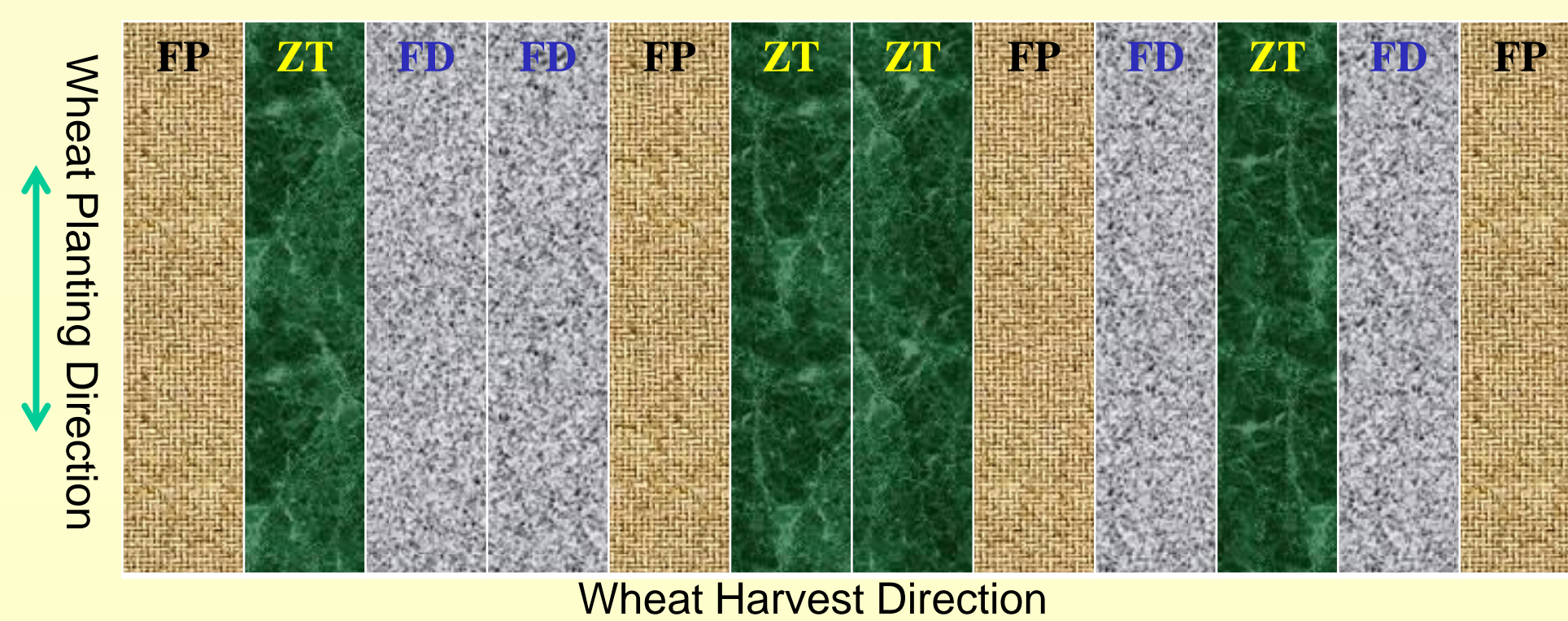
- To evaluate 3 different tillage options on unharvested sugar beet to determine the best seedbed management method when planting to wheat in 2010.

Methods

- November 26, 2009 – Unharvested sugar beet strip trial with 3 treatments and 4 replications in a randomized complete block design.
- May 26, 2010 – Spring wheat planted @ 120lbs/ac with a Conserva-Pak Air Seeder, low disturbance hoe opener on 9" spacing.
- Direction of wheat planting – Parallel to sugar beet rows.
- Plant Nutrition – 120lbs N/acre and 40lbs P₂O₅/acre applied at planting.
- Oct 15, 2010 – Wheat samples harvested with a Winter Steiger Plot Combine and adjusted to 13.5% moisture.

Treatments

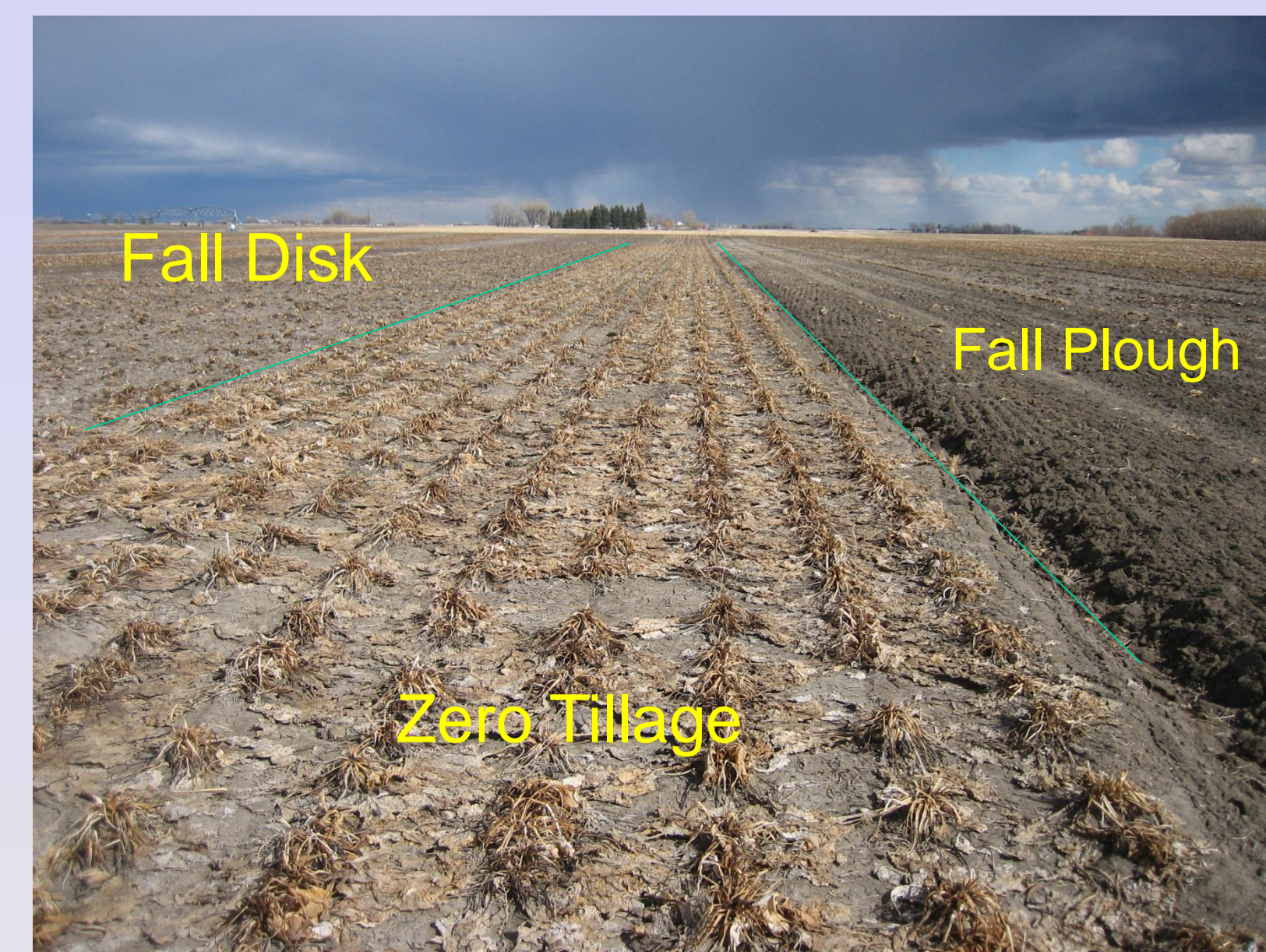
Treatment	Tillage Implement
Fall Plough (FP)	Moldboard Plough
Fall/Spring Disk (FD)	Tandem Disk
Zero Tillage (ZT)	None



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Unharvested Sugar Beet Strip Trial

Evaluation of Fall Plough, Fall/Spring Disk and Zero Tillage



March 30, 2010



May 26, 2010 – Direct Seeding Wheat Parallel to Beet Rows



June 30, 2010 Wheat Crop Development



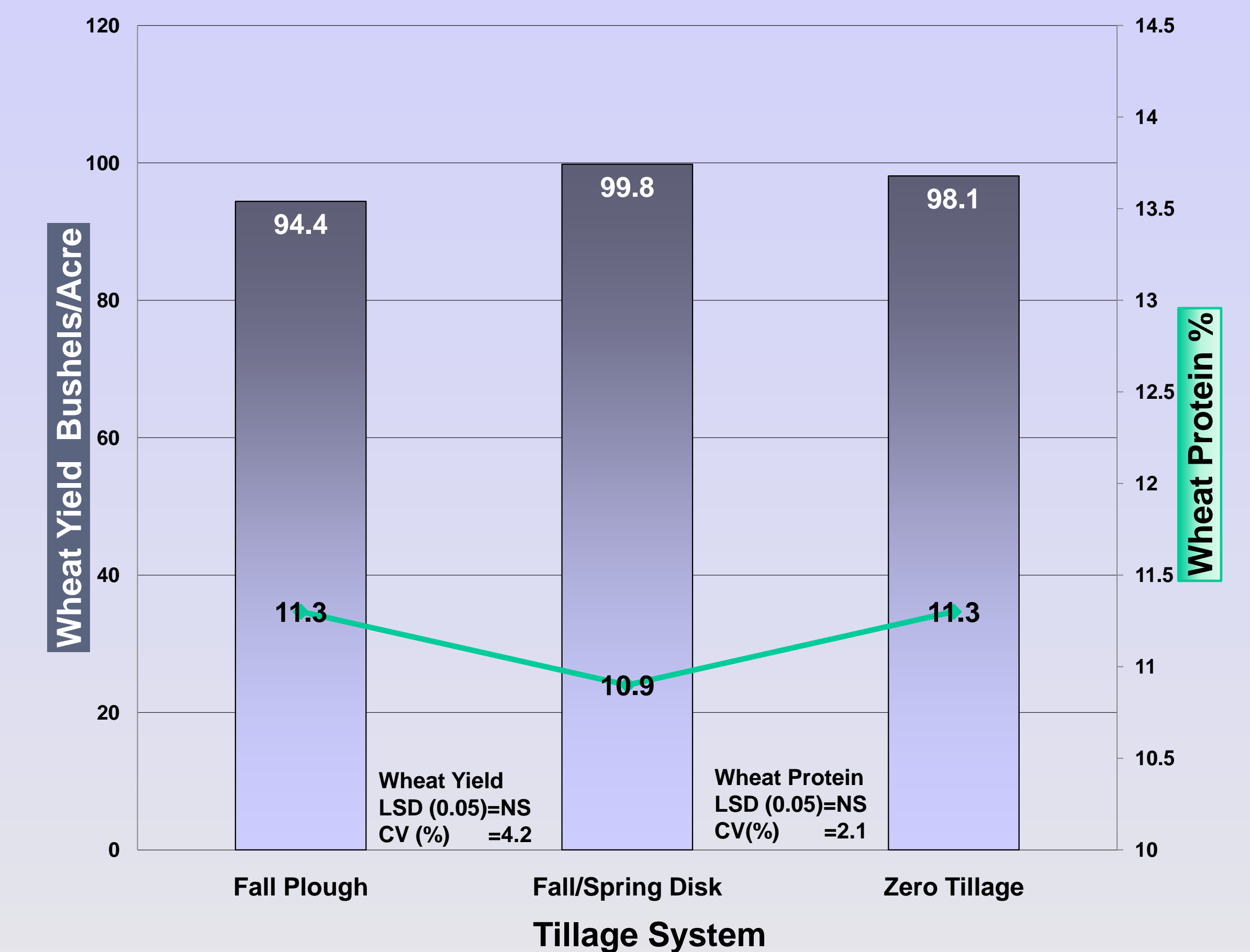
Mowing between individual tillage treatments



Wheat harvest samples weighed and moisture tested. Moisture was adjusted to 13.5%

Results

Wheat Yield and Protein Content



Wheat Harvest

- October 15, 2010
- Wheat was harvested perpendicular to the direction of the strips, giving 4 wheat samples per individual strip.
- Plot dimensions were measured after wheat harvest for accurate determination of wheat yield.
- The individual plot wheat samples were weighed and moisture tested.

Summary

- Average spring wheat yields were 94.4 bu/ac for fall ploughed strips, 99.8 bu/ac for fall/spring disk strips and 98.1 bu/ac for strips with zero tillage/direct seeded.
- The absence of tillage when sugar beet was left unharvested did not appear to result in any detrimental effects to wheat yield or protein content the following year.



Sugar beet carcass in Zero Tillage treatment one year after October 2009 frost event.

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