

Residue and Tillage Management, Ridge Till

346

Washington Conservation Practice Job Sheet

November 2005



What is Ridge-Till?

Ridge-till systems manage the amount, orientation, and distribution of crop and other plant residues on the soil surface year-round, while growing crops on pre-formed ridges alternated with furrows protected by crop residue.

Purposes

Ridge-till systems can be designed to accomplish one or more of the following conservation purposes:

- Reduce sheet and rill erosion
- Reduce wind erosion
- Maintain or improve soil condition
- Reduce soil particulate emissions
- Modify cool wet site conditions
- Manage snow to increase plant available moisture
- Provide food and escape cover for wildlife

Where Practice applies:

This practice applies to all cropland and other land where crops are grown.

This standard includes tillage and planting methods commonly referred to as ridge till or ridge planting. It does not include no-till planting on ridges, or bedding or listing operations that bury crop residues.

Criteria Applicable to all purposes

Residues shall remain on the surface from harvest until planting with no additional disturbance.

Ridge height shall be maintained throughout harvest and winter seasons by controlling equipment and livestock traffic.

After planting, residues are maintained in the furrow until new ridges are rebuilt by cultivation. Maintain original ridge height and shape with cultivation.

A stable outlet must exist where ridges direct runoff to areas of concentrated flow.

Row grades shall not exceed those given in the following table.

10-Year EI	Maximum Row Grade (%) ¹
<100	9
100 – 150	7
>150	6

¹ Based on existing water erosion prediction technology.

When irrigation is used with this practice, use the row grade limitation for the next higher 10 year storm EI value.

Where residue is less than 30 percent, use the row grade limitation for the next higher 10 year storm EI value.

Additional criteria to reduce sheet and rill erosion

Residue and soil from the ridge is moved to the furrow area between the ridges.

After planting, the top of the ridge shall be maintained at a minimum 3 inches higher than the furrow area between the ridges.

The ridge shall be shaped to direct runoff to the protected furrow area.

Additional criteria to reduce wind erosion

Wind erosion prediction using current prediction technology shall account for ridge height, spacing and orientation to the direction of erosive winds.

Additional criteria to maintain or improve soil condition

The cropping system will be evaluated using the current approved soil conditioning index procedure and result in a positive trend.

Additional criteria to reduce soil particulate emissions

The amount and orientation of residue needed and the amount of soil disturbance shall reduce wind erosion to the tolerable soil loss value (T). Wind erosion shall be measured using the current approved wind erosion prediction technology. Calculations shall account for the effects of other practices in the conservation management system.

Additional criteria to manage snow to increase plant-available moisture

During the time that significant snowfall is expected to occur, the minimum distance between the bottom of the furrow and the top of the stubble shall be:

- at least 10 inches for crops with a row spacing of less than 15 inches;
- at least 15 inches for crops with a row spacing of 15 inches or greater.

If this minimum distance cannot be achieved, ridges shall be oriented not to exceed 45 degrees from perpendicular to the prevailing wind direction during periods of expected snowfall.

Additional criteria to modify cool wet site conditions

Ridge height prior to planting shall be at least 6 inches.

Additional criteria to provide food and escape cover for wildlife

The amount of residue and height of stubble needed to provide cover during winter months shall be determined using an approved wildlife management plan. Stubble shall remain standing over winter.

Record the planned purpose-specific practice specifications in Table 1.

The considerations section in Residue and Tillage Management: Ridge till practice standard (346) provides detailed discussion of additional activities and descriptions of their effects for successful implementation of the practice.

Ridge-Till Design and Specification Worksheet

Producer:		
Planner/Field Office:		
Critical Seasons:	Evaporation:	Snowfall:
Date:		Crop Year:

Practice Purpose (check one or more that apply)

<input type="checkbox"/>	Reduce sheet and rill erosion	<input type="checkbox"/>	Reduce soil particulate emissions
<input type="checkbox"/>	Reduce wind erosion	<input type="checkbox"/>	Modify cool wet site conditions
<input type="checkbox"/>	Maintain or improve soil condition	<input type="checkbox"/>	Provide food and escape cover for wildlife
<input type="checkbox"/>	Manage snow to increase plant-available moisture		

Table 1 Specifications (and application record)

Tract	Field	Crop	SCI	Soil Loss (sheet / rill)	Soil Loss (wind)	Stubble Height	Wildlife Habitat Evaluation	Ridge height	
								Post Harvest	Post planting

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