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Big Horn County sugar beet producers use budget tools from RightRisk.org – Part II

By James Sedman and John Hewlett

In the previous installment in this series, Big Horn County producers Ken and Rich Riff are contemplating purchasing a strip-till machine to reduce tillage passes and soil erosion.

The Riffs need to quantify and calculate the effects purchasing this machine may have on per-acre profitability for their 200 acres of sugar beets and the risk management implications of the purchase. They choose to use the partial budgeting tool available at RightRisk.org.

Partial Budget Data and Assumptions

The partial budget outline at RightRisk.org addresses the four major changes the purchase of a strip-till machine might imply: added revenues, reduced expenses, reduced revenues, or added expenses. Estimates for income and expense adjustments should be as accurate and quantifiable as possible to ensure meaningful results from the analysis.

In the added revenues column, the Riffs conservatively assume a 1-ton per acre yield increase by using strip-till ($60/ton sugar beet price). This increase comes from increased soil moisture and less stress on the crop. Normally, the Riffs use three secondary tillage passes: disk twice ($20/acre/trip) and roller harrow once ($15/acre) after primary tillage (plowing at $45/acre). With the strip-till machine, the Riffs can reduce tillage to one disking pass. They will also eliminate two fertilizer applications that took separate trips across the field ($15/acre/pass) because they will apply those with the strip-till machine. Reduced repair costs ($10/acre) will be realized in the reduced expense column. The Riffs expect reduced irrigation expenses of $10/acre because the increase in soil moisture should eliminate the need to irrigate the crop up.

The Riffs cannot identify any reduced revenue that might result from purchasing the new machine. The machine cost would be the main added expense. We will assume the $25,000 machine has a five-year useful life with an amortized cost of $5,775 per year (five year amortization, 5 percent interest rate). Assuming the Riffs will use this machine on 200 acres of sugar beets, the per-acre cost of the initial purchase would be $28.88. The Riffs estimate the actual application cost of using the machine to be $40/acre, and repair costs (bearings, points, and other wear items) to be $5/acre. An additional glyphosate application, valued at $13/acre, will be required to control early weeds.

Analysis Results

Using the simple partial budget tool from RightRisk.org, the Riffs determine the added revenues and reduced costs of the strip-till machine are $200/acre, while the added costs and reduced revenues are $91.88/acre, resulting in a net benefit of $108.12/acre. Therefore, the Riffs determine that purchasing the machine is an operationally sound decision. These results are shown in Figure 1.

In the next installment in this series, we will analyze the effects of this purchase on the Riffs' risk management planning for their sugar beet enterprise and their overall farming activities.

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For more information

The academic professionals at RightRisk.org have created a set of tools for partial, enterprise, and whole farm budgeting to assist producers in risk management planning. To access these resources, visit RightRisk.org and click Risk Mgt Tools under the Resources tab. RightRisk.org additionally offers numerous free courses and links to example producer profiles showcasing a wide range of production situations and risk management planning.

Figure 1. Example Partial Budget

			Partial Budget For:		Riff Brothers Strip-till Machine Purchase	
	Positive Effects			Negative Effects		
	Added Returns			Added Costs		
	one ton per acre yield increase ($60/ton)	$	60.00	Initial Machine cost	$	28.88
		$	-	Strip-till machine operation	$	40.00
		$	-	Repair costs	$	10.00
		$	-	Additional Glyphosate Application	$	13.00
		$	-		$	-
	Total Added Returns	$	60.00	Total Added Costs	$	91.88
	Reduced Costs			Reduced Returns		
	Primary tillage (plowing)	$	45.00		\	
	Secondary tillage (1 disking, 1 packing)	$	40.00		$	-
	Fertilizer Application (2, $15/acre)	$	30.00		$	-
	Tillage equipment repair costs	$	15.00		$	-
	Irrigation cost (sprinkler to irrigate up crop)	$	10.00		$	-
		$	-		$	-
		$	-		$	-
		$	-		$	-
	Total Reduced Costs	$	140.00	Total Reduced Returns	$	-
	Total Positive Effects			Total Negative Effects		
	(Added Returns + Reduced Costs)	$	200.00	(Added Costs + Reduced Returns)	$	91.88
				Net Benefit of: Riff Brothers Strip-till Machine Purchase	$	108.12

Research gleans best turf grass options for Central Great Plains

By Anowar Islam

Turf species require large amounts of irrigation water to produce good-quality turf.

In the semi-arid Central Great Plains (CGP) of Wyoming where average annual precipitation is low (less than 14 inches), water availability for turf grass irrigation is limited.

Scientists in the Department of Plant Sciences in the UW College of Agriculture and Natural Resources evaluated several turf cultivars at the James C. Hageman Sustainable Agriculture Research and Extension Center (SAREC) near Lingle. Cultivars included cool-season grasses Kentucky bluegrass ('Bandera', 'Common 85/80', and 'Midnight'), tall fescue ('Blackwatch', 'Tar Heel II', and 'Watchdog'), and warm-season grasses buffalograss ('Bison', 'Bowie', and 'Cody'), and blue grama ('Alma', 'Bad River', and 'Hachita').

Start Study in 2009

Irrigation management included irrigated vs. rain-fed. Seeds were broadcast in May 2009 onto a clean, firm, and smooth seedbed then softly raked-in and rolled into the soil. Seeding rates (pure live seed) were 175, 436, 87, and 131 pounds per acre for Kentucky bluegrass, tall fescue, buffalograss, and blue grama, respectively.

Anowar Islam leads a plot tour during a field day at the James C. Hageman Sustainable Agriculture Research and Extension Center near Lingle.

During establishment in 2009, rain-fed plots received irrigation water as needed to ensure good emergence. The supplemental water added to the irrigated turf grass plots was 9, 9.5, and 10.5 inches in 2009, 2010, and 2011, respectively. On average, the irrigated plots received 67 percent more water than the rain-fed plots. Other management included biweekly mowing to control weeds and stimulate growth. Plots were fertilized with 50 pounds per acre of nitrogen as urea and phosphorus as mono-ammonium phosphate, and 20 pounds per acre of sulfur as elemental sulfur in mid-September in the second and third year of the establishment.

Time Makes a Difference

Turf performance was similar among irrigated and rain-fed treatments in 2009. However, differences occurred as time advanced. Coverage of turfs was similar in both irrigated and rain-fed conditions for the entire evaluation period. In general, better performance and turf quality in terms of vigor and color were obtained in irrigated plots. Plant vigor and color rankings were tall fescue, Kentucky bluegrass, buffalograss, and blue grama under irrigated conditions. However, under limited irrigation, plant vigor and color were superior for the warm-season turf species, buffalograss and blue grama.

Tall fescue cultivars 'Tar Heel II' and 'Watchdog' performed very well under rain-fed conditions showing their superior drought tolerance and low-water requirements comparable to 'Cody' (buffalograss), and 'Bad river' (blue grama). There was little-to-no weed invasion in tall fescue turf plots over the three-year evaluation period indicating its superior competitiveness to weed infestation. Tall fescue cultivars 'Tar Heel II' and 'Watchdog', blue grama cultivar 'Bad River', and buffalograss cultivar 'Cody' were the most promising drought-tolerant cultivars. These cultivars may have potential for use in the CGP of Wyoming, and perhaps beyond, under limited irrigation or low-management practices.

For more information, please contact me.

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