Compensation with an Unmanaged Hay Crop-share Agreement
Brent Carpenter, July 2013

It is common to harvest hay from a neighbor's acreage that would otherwise be unused. This practice can have some temporary advantages for both the landowner and the operator, but there are often questions about equitable compensation.

The table shows estimates for the economic costs of harvesting hay where the landowner contributes only land. No nitrogen or application costs are estimated, only the value of the phosphate and potash removed by the crop. According to the National Research Council, removal rates are 12 and 47 pounds respectively, per ton of cool season grass hay.

Incentives are upside down in this situation. The cost of harvest exceeds the value of the crop, so the parties have to agree how to share an economic loss. Perhaps not realized, the negative gap has generally widened in recent years with much higher prices for fertilizers and relatively moderate increases in grass hay values over time, excluding drought conditions. If gross returns are shared based on each party's contribution to costs, the split is 64-36. This arrangement cost the landowner $49 and the operator $29, per acre.

Production Costs of Unmanaged Mixed Cool-Season Grass Hay			
Yield, tons per acre	*2.6, 1500 lb bales*		1.95
Value per ton	*$45 per bale*		$60
Hay value per acre			**$117**
	Land Owner	Operator	Enterprise Total
Operating costs per acre			
Phosphate	11	0	11
Potash	63	0	63
Net wrap	0	12	12
Bale hauling	0	9	9
Machinery fuel, repair, maintenance	0	14	14
Operator and hired labor	0	9	9
Operating interest	0	4	4
Operating costs per acre	**$74**	**$48**	**$122**
Ownership costs per acre			
Machinery overhead and depreciation	0	23	23
Real estate charge	50	0	50
Ownership costs per acre	**$50**	**$23**	**$73**
Total costs per acre	**$124**	**$71**	**$195**
Percent of total	64%	36%	100%

* Yields and prices for air-dry hay, i.e., 90% dry matter.

In practice, the landowner may choose to ignore a land rental rate just to have the field cut. If the real estate charge is set to zero, the landowner contribution is the value of the two major plant nutrients—$74 per acre with a two ton yield. Now, the landowner contributes roughly one-half the total recognized cost of $145. In a 50-50 arrangement each party receives the equivalent of $58.50 per acre or $22.50 per bale as cash or hay. The net effect is the operator loses about $13 and the landowner foregoes rent and donates about $16 of fertility per acre.

If this is a friendly agreement on small acreage and the soil levels of these nutrients are very high or even in excess, the 50-50 agreement may be workable for both parties temporarily. However, for multiple seasons or fields with only moderate levels of phosphate or potash, high fertilizer prices setup a strong disincentive for the landowner to allow uncompensated nutrients to be hauled away. In this case, it is better to let the standing crop “go to waste”.

Over time, grass stands are permanently harmed if nutrients are not replaced at the rate of removal. It is important for all parties to appropriately account for the value of the nutrients and find a way to equitably share in the cost of replacement.