

Corn Harvest Fast Approaching

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Mid-South corn farmers are gearing up to harvest their share of what USDA predicts to be the second largest US corn crop ever. Most are also keeping a close eye on the weather as well as corn and energy prices, especially when you consider how

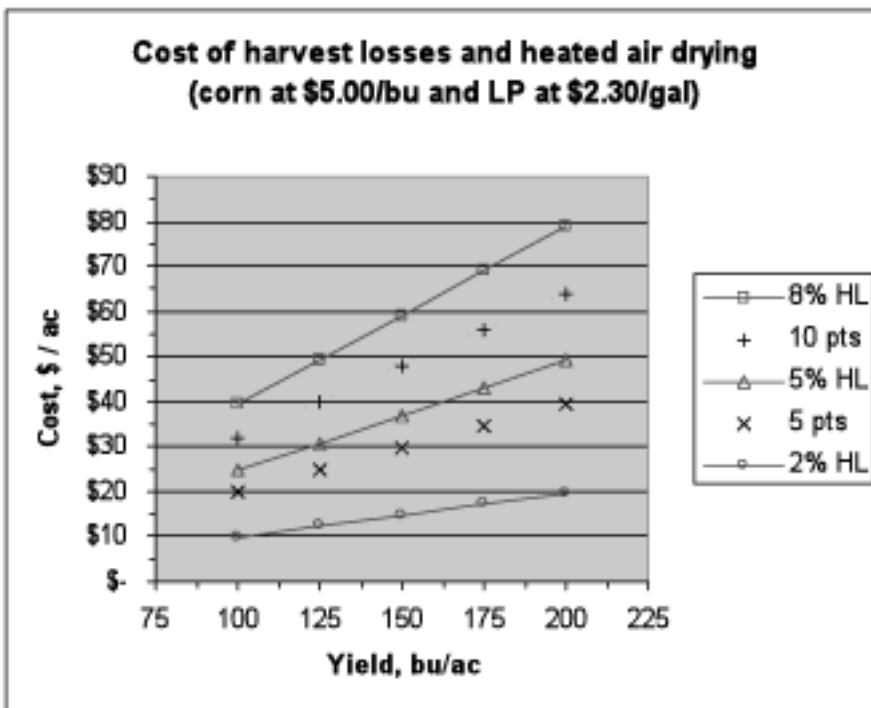
much higher they are this year over last year. With LP gas priced between \$2.20 and \$2.40 per gallon and corn prices around \$5.00 per bushel, many are considering whether to let the corn dry down in the field or harvest corn at 20 to 25 percent moisture and dry with heated air.

Of course, much depends on harvest capacity, the price of corn and drying energy (gas and electricity), drying efficiency and labor costs. Usually the trade-off boils down to weighing the cost of excess harvest losses against energy costs for drying. Excess losses are those incurred by leaving the crop to dry in the field and can be 2 to 8 percent above normal loss levels of 1 to 2 percent that have been reported for timely harvest.

To evaluate this year's harvest situation, let's look at typical yield levels, harvest losses and

remain unchanged, the cost of drying increases to \$49.12 per acre, which is \$12.18 more than the value of corn left in the field. On the other hand, there is definitely a value in having corn safely in the bin, especially with its high price and weather uncertainties. Interestingly, costs for field losses and drying are equivalent in this scenario when the price ratio of corn to LP is 2.9 (for example, with corn at \$6.65 and LP at \$2.30; or conversely, when corn is \$5.00 and LP gas is \$ 1.70).

In an exceptionally good drying season weather related delays and stalk diseases are



few, so harvest losses might be no more than 2 percent above normal levels. In this case, field drying would be the least cost option for all yield levels and corn prices if. Conversely, if we have hurricane related weather and/or high disease

Cost comparison between corn harvest losses and heated air drying (\$/ac) for different yield levels with today's energy and grain prices.

Assumptions:						
Base harvest loss: 1.5 %						
LP gas price: \$ 2.30 / gal						
Drying energy cost: 4.3 cents/bu-pt @ 5 points; 3.5 cents/bu-pt @ 10 points **						
Low excess harvest loss: 2 %						
Expected yield (bu/ac)	Harvest loss (bu/ac)	Value of harvest loss (\$/ac) at different corn prices (\$/bu)			Energy cost to dry 5 or 10 points of moisture	
		\$ 4.00	\$ 5.00	\$ 6.00	5	10
100	2.0	\$ 7.88	\$ 9.85	\$ 11.82	\$ 20.86	\$ 33.80
150	3.0	\$ 11.82	\$ 14.78	\$ 17.73	\$ 31.30	\$ 50.70
200	3.9	\$ 15.76	\$ 19.70	\$ 23.64	\$ 41.73	\$ 67.60
Medium excess harvest loss: 5 %						
Expected yield (bu/ac)	Harvest loss (bu/ac)	Value of harvest loss (\$/ac) at different corn prices (\$/bu)			Energy cost to dry 5 or 10 points of moisture	
		\$ 4.00	\$ 5.00	\$ 6.00	5	10
100	4.9	\$ 19.70	\$ 24.63	\$ 29.55	\$ 20.21	\$ 32.75
150	7.4	\$ 29.55	\$ 36.94	\$ 44.33	\$ 30.32	\$ 49.12
200	9.9	\$ 39.40	\$ 49.25	\$ 59.10	\$ 40.43	\$ 65.49
High excess harvest loss: 8 %						
Expected yield (bu/ac)	Harvest loss (bu/ac)	Value of harvest loss (\$/ac) at different corn prices (\$/bu)			Energy cost to dry 5 or 10 points of moisture	
		\$ 4.00	\$ 5.00	\$ 6.00	5	10
100	7.9	\$ 31.52	\$ 39.40	\$ 47.28	\$ 19.57	\$ 31.70
150	11.8	\$ 47.28	\$ 59.10	\$ 70.92	\$ 29.35	\$ 47.54
200	15.8	\$ 63.04	\$ 78.80	\$ 94.56	\$ 39.13	\$ 63.39
** Energy cost based on \$2.30 /gal LP for gas and 8 cents/kwh for electricity.						
Total operating drying costs should include energy, labor and equipment repairs.						

corn prices at a fixed drying cost for each operation. For example, consider a potential corn yield of 150 bushels per acre, excess harvest loss of 5 percent above normal losses of 1.5 percent and a selling price of \$5.00 per bushel. The value of the extra corn left behind in the field (7.4 bushels) is \$36.94. Comparing this figure with the cost of artificial drying shows that \$30.32 per acre is needed to remove 5 points of moisture from a bushel of corn. So, the economics for this comparison favors heated air-drying (Figure 1). In fact, at this 5 percent loss level, energy costs for drying 5 points of moisture are lower than the value of the crop left in the field for 4.00 corn at all yield levels.

In contrast, if corn is harvested at 25 percent moisture, dried 10 points, and all other figures

pressure, harvest losses can be much above normal (8 percent or more) and heated air drying for 10 points of moisture is highly favored for all yield levels with corn priced above \$4.00.

Heated air drying becomes more favorable as corn prices, yield levels, and harvest losses increase, but obviously less favorable with increases in LP gas prices. A spreadsheet is available to compare specific drying costs with harvest losses for different yield levels and corn prices at www.bae.uky.edu/ext/Grain_Storage.

Cost comparison between corn harvest losses and heated air drying (\$/ac) for different yield levels with today's energy and grain prices. Δ

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