Grain Hauling Cost Calculator

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Increased energy prices certainly impact most aspects of grain farming, including grain hauling costs. Diesel prices have fluctuated wildly during the past year, and while they almost doubled last fall's average of $2.65 per gallon this summer, they have come down a bit but are still over $4.00. A spreadsheet tool has been developed and made available to help folks quickly compare their costs to haul grain from the field to an elevator or storage bins OR from storage to two different elevators. It can be used to determine hauling costs (including labor as an option) and evaluate grain bids so they can make the most profit.

Table 1. Truck, trailer and fuel costs.

Fuel Cost $ / gal	Truck Capacity bu	Overhead: Fixed Cost* $ / mi	Overhead: Repairs & tires $ / mi	Fuel: Efficiency mpg	Fuel: Cost $ / mi	Ownership & Fuel Cost: $ / mi	Ownership & Fuel Cost: cents / bu-mi
4.30	950	1.74	0.54	6.0	0.72	3.00	0.32

* Fixed costs include depreciation, interest, taxes, insurance and license.

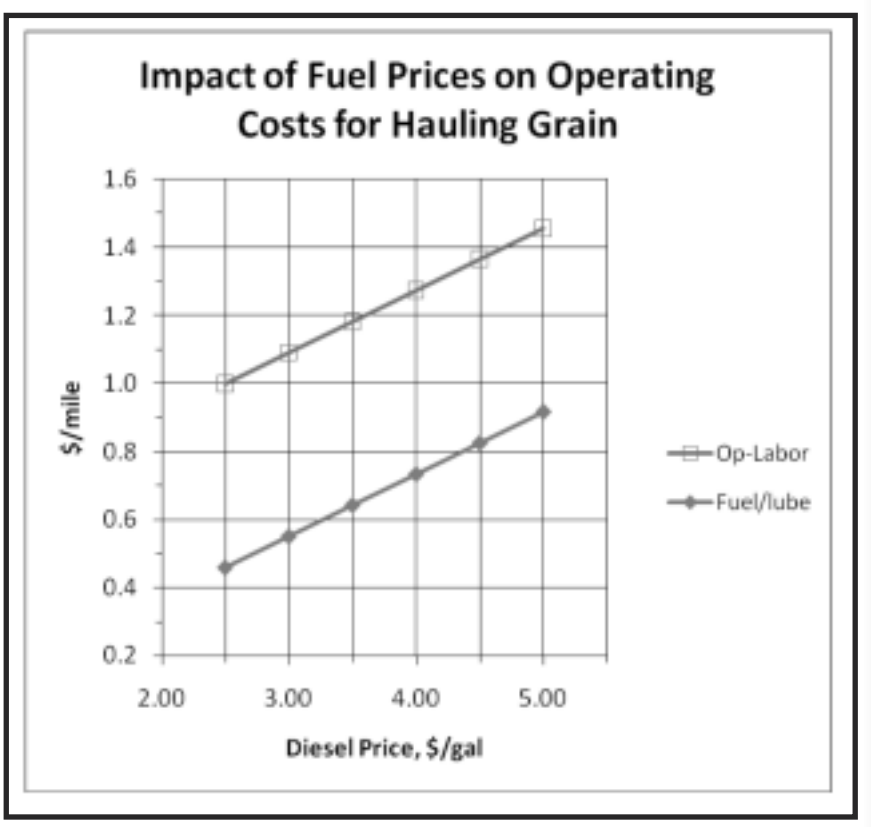
Table 2. Grain hauling cost--comparison between two elevators/grain buyers.

Buyer No.	One-way Distance miles	Wait & Unload Time min	Fuel Cost cents/bu	Ownership Cost cent/bu	Labor: Cost $ / h	Labor: Time** h	Labor: cents per bu	Total Cost cents per bu
1	5	15	0.75	2.40	12.50	0.47	0.62	3.84
2	20	12	3.02	9.58	12.50	1.09	1.43	14.30

** Assumes an average speed of 45 mph.

This information can also be used to keep track of machinery costs or determine reasonable custom hauling rates.

As a starting point, fixed and operating costs were determined from the "Grain Truck Transportation Cost Calculator" posted by William Edwards at Iowa State University, which uses annual truck ($5410 overhead + $2100 operating) and trailer ($3270 overhead + $600 operating) costs, driven 5000 miles each year. As shown in Table 1, this boils down to $1.74 per mile in overhead costs, with $0.54 per mile for repairs and tires. With a diesel price of $4.30 per gallon and fuel efficiency of 6 miles per gallon, the fuel cost is $0.72 per mile and the subtotal operating cost (less labor) is $3.00 per mile.



*** Fixed costs include depreciation, interest, taxes, insurance and license.**

Labor charges are optional but include time differences to drive and wait between two elevators/delivery points to figure total hauling costs (Table 2). In the example shown, elevator 1 is 5 miles from the farm and takes 15 minutes to sample and unload grain, resulting in a total hauling cost of 3.8 cents per bushel for the farmer, counting fuel and labor for the return trip. In comparison, the second elevator is 20 miles from the farm, takes 12 minutes to sample/unload grain and costs 14.3 cents per bushel. In this case, the second elevator must offer 10.5 cents more per bushel to attract this farmer, assuming all other factors are equal (discount schedule, etc.). Of course, ownership and operating costs can be adjusted in the spreadsheet along with fuel and labor to fit each operation and calculate the total hauling costs. It is available at the UK Biosystems and Agricultural Engineering website (www.bae.uky.edu/ ext/Grain_ Storage).

**** Assumes an average speed of 45 mph.**

The Iowa State calculator was also used to look at how operating costs (minus labor) are impacted over a range of diesel prices, with results shown in the adjacent graph. Comparing diesel prices from last year at $2.65 per gallon to this year at $4.30, fuel and lubrication costs increased from $0.50 per mile to $0.80, with operating (minus labor) impacted proportionately, increasing from $1.02 to $1.32. Δ

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