

Impact of Increased Fuel Prices on Profitability of Selected Crops in Big Horn Basin of Wyoming



Sara Skalsky, graduate student * Jim Jacobs, professor
College of Agriculture, Department of Agricultural and Applied Economics

UNIVERSITY
OF WYOMING

This University of Wyoming College of Agriculture bulletin is designed to help producers and others evaluate the impact of fuel and nitrogen prices on the cost of individual field operations and the profitability of selected crops in the Big Horn Basin of Wyoming. This is accomplished through a series of spreadsheets in B-1192, a publication of the UW College of Agriculture's Department of Agricultural and Applied Economics. The Fuel Impact spreadsheet estimates increased fuel cost per acre for selected field operations and equipment associated with per-gallon price increases for gasoline and diesel. This is followed by a series of budget spreadsheets for selected crops in the Big Horn Basin. These budgets can be used to evaluate the profitability of individual crops.

The selected crops include alfalfa establishment, established alfalfa, alfalfa seed establishment, established alfalfa seed, barley followed by alfalfa establishment, corn for grain, corn for silage, ryegrass established with malt barley, dry beans, barley, sugar beets, and ryegrass seed. Finally, the Nitrogen Response spreadsheet can be used to estimate the optimum level of nitrogen (N) and corresponding yield for malt barley, dry beans, sugar beets, and corn silage by entering the price of N (\$/lb), crop price, and harvest cost in the appropriate unit (\$/bu; \$/ton, etc). Information is provided below on the use of these spreadsheets to evaluate the impact of rising fuel and N prices.

The tabs below show a series of spreadsheets. The first spreadsheet (Fuel Impact) lists different field operations and the equipment used for each field operation. The purpose of this spreadsheet is to estimate the increased fuel cost per acre of each operation for associated with per-gallon price increases for gasoline and diesel. Once you enter the per-gallon price desired, the estimated per-acre increase in fuel cost for each operation above the 2002 price is provided in the last column of the worksheet.

Note: The Fuel Impact spreadsheet is linked to all the crop budgets provided.

The per-acre costs for the base crop budgets provided are based on 2002 fuel prices of \$1.39 and \$1.15 per gallon for gasoline and diesel, respectively. Once you enter today's fuel prices in the Fuel Impact spreadsheet, the corresponding per-acre cost of the field operations in each base crop budget is increased. The columns in the Fuel Impact spreadsheet are protected so the formulas cannot be changed.

Next is a series of spreadsheets that provide budgets for selected crops. These crop budgets are based on 2002 input prices and five-year average crop prices for 2000-2004. Click on the crop desired at the bottom of this spreadsheet to obtain the base budget for that crop. The crop budgets provide an estimate of return to management, breakeven price, and breakeven yield.

Note: For each crop budget you can change crop yield and price, amount of nitrogen (N) applied, and price of N (those four cells are highlighted) as well as the cost of other inputs (seed, chemicals, etc). A column is also provided to enter your own costs.

Note: Those cells with per-acre field-operation costs are protected because they are linked to the Fuel Impact spreadsheet. Also, cells that contain formulas are protected.

The last spreadsheet (Nitrogen Response) contains N-response functions for four crops (corn silage, dry beans, malt barley, and sugar beets). The estimated crop response to N is based on N rate studies conducted at the UW Powell Research and Extension Center. Estimates of the optimum level of N and corresponding yield can be obtained by entering the price of N (\$/lb), crop price, and harvest cost in the appropriate unit (\$/bu; \$/ton, etc) in the Nitrogen Response spreadsheet.

If you have questions, please contact the UW College of Agriculture's Department of Agricultural and Applied Economics at (307) 766-2386.

[Open
Spreadsheets](#)