

The ever-rising cost to fuel food production in the Mountain States

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5 FACTS

1. Diesel prices have skyrocketed \$1.50 per gallon from 2021 to 2022.
2. Escalating fuel prices continue to drag down farming margins, despite high crop prices.
3. In the mountain states, total acreage and crop choice are the major influencer of fuel usage.
4. Idaho, Montana and Washington use more fuel for crops than Wyoming and Utah.
5. Elevated fuel prices force farmers to switch to less fuel intensive crops, threatening food security and hurting farming communities.

Introduction

Record high fuel prices concern all consumers and farmers are no exception. Planting, growing, and harvesting are fuel-intensive processes, which eat away at a farmer's supply of gasoline, off-road diesel, and road diesel. Despite progress, alternative fuels are a far-off solution, so providing a reliable and affordable fuel source protects the nation's food supply.¹ Current outlooks predict further price escalations and supply shortages of diesel – a main component of agricultural fuel usage.

Diesel prices skyrocketed \$1.50 per gallon from 2021 to 2022, averaging \$5.32 per gallon. This has impacted farmers all year, with the peak price of \$5.81 in June. Relief is still unseen in the forecast with diesel prices expected to remain high in 2023 – an average of \$4.29 per gallon.² The war in Ukraine and the associated ban on Russian petroleum, low domestic oil production, and the increased seasonal demand are huge drivers of the escalating price. Experts see no resolution to the ongoing problem of high diesel prices.³

At the farm gate, escalating fuel prices will continue to drag down margins, despite high crop prices. A recent letter to President Biden from the American Farm Bureau President Zippy Duvall reads, *“Every input that arrives on our farms and ranches is transported by a diesel engine, whether that is by boat or barge, rail or truck. Our crops are planted by diesel engines and harvested by diesel engines. High diesel prices are severely impacting our farmers and ranchers, causing increased costs to consumers, and adding to food insecurity.”*

Farmers in the Western States are also facing this concern which is intensified by crop type and large land areas. Idaho, Montana, Utah,

¹ “Going Green: Can Electric Tractors Overtake Diesel?” by Lindsay Campbell on 28 March 2022 at <https://modernfarmer.com/2020/03/going-green-can-electric-tractors-override-diesel/>

² “High Diesel Prices Put Strain on Farmers,” by American Farm Bureau on 4 November 2022 at <https://www.fb.org/newsroom/high-diesel-prices-put-strain-on-farmers>.

³ “Diesel Prices To Stay High in 2023,” by Mark Dorenkamp on 10 November 2022 at <https://brownfieldagnews.com/news/diesel-prices-to-stay-high-in-2023/#:~:text=%E2%80%9CWe're%20looking%20at%20diesel,drag%20down%20margins%20next%20year>

KEY INFORMATION COLUMN

Idaho, Montana, Wyoming, Washington, and Utah have a variety of crops that use varying amounts of fuel.

Washington's ag fuel use is high, followed by Montana and Idaho. Utah and Wyoming are comparably low.

Washington, and Wyoming have a variety of top crops that use varying amounts of fuel.

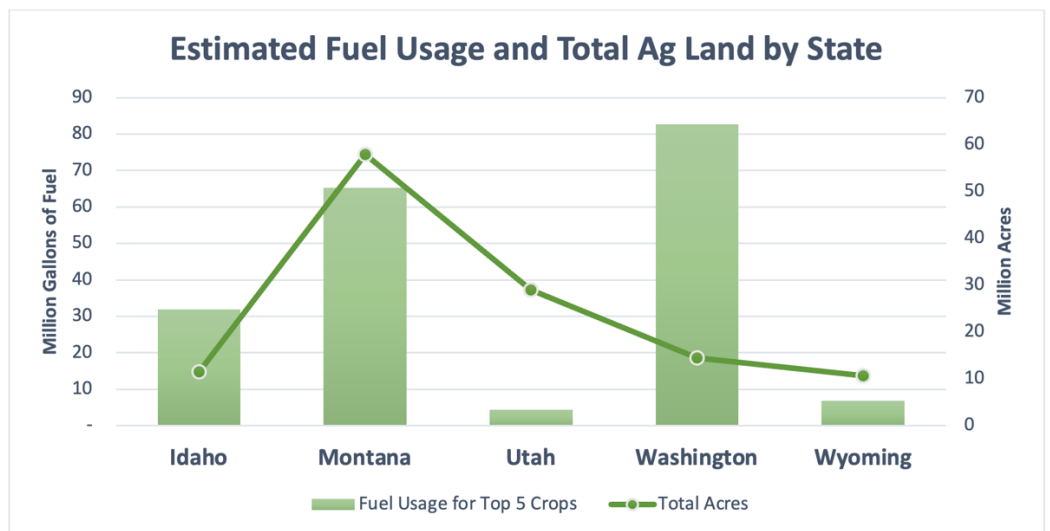
Understanding the regional dynamics of farm fuel usage emphasizes the importance of diesel to the nations supply of apples, potatoes, wheat, hay, and many other crops.

Diesel Fuel Usage by State

The Western States are home to a diverse agricultural industry, ranging from dryland grains to irrigated specialty crops. The diesel fuel usage is also varied across the region. Using each state's five most valuable crops and the associated fuel requirements for each commodity, this study estimates the total fuel usage for Idaho, Montana, Utah, Washington, and Wyoming. All references to fuel usage will be based on these top five crops for each state.^{4, 5}

Idaho	Montana	Utah	Washington	Wyoming
Potatoes	Wheat	Hay & Haylage	Apples	Hay & Haylage
Hay & Haylage	Hay & Haylage	Wheat	Wheat	Corn
Wheat	Barley	Corn	Potatoes	Barley
Barley	Lentils	Cherries	Hay & Haylage	Wheat
Corn	Peas	Barley	Hops	Sugar beets

A comparison of the western states shows that total acreage is not the only factor driving fuel demand, with crop choice being a major influencer of fuel usage. For example, Washington – despite being one of the smaller farming regions by acreage – has many specialty crops which are the highest consumers of fuel. Montana follows in second because it is the largest farmable area. Idaho's mix of specialty and traditional commodities ranks third. Utah and Wyoming are comparably low in total fuel usage.⁶



⁴ USDA NASS at https://www.nass.usda.gov/Statistics_by_State/

⁵ Enterprise Budgets were used from University of Idaho and Washington State University to estimate fuel usage by commodity. It was assumed that agricultural practices would be similar enough between states that fuel usage assumptions by crop could be used synonymously across state lines.

⁶ Agricultural land values include cropland, pasture, and range. Unfortunately, no data exist to look just at total cropland acres by state. Pasture and range are lower fuel consumers. This is a possible explanation for Utah's high agricultural land area but low total fuel usage.

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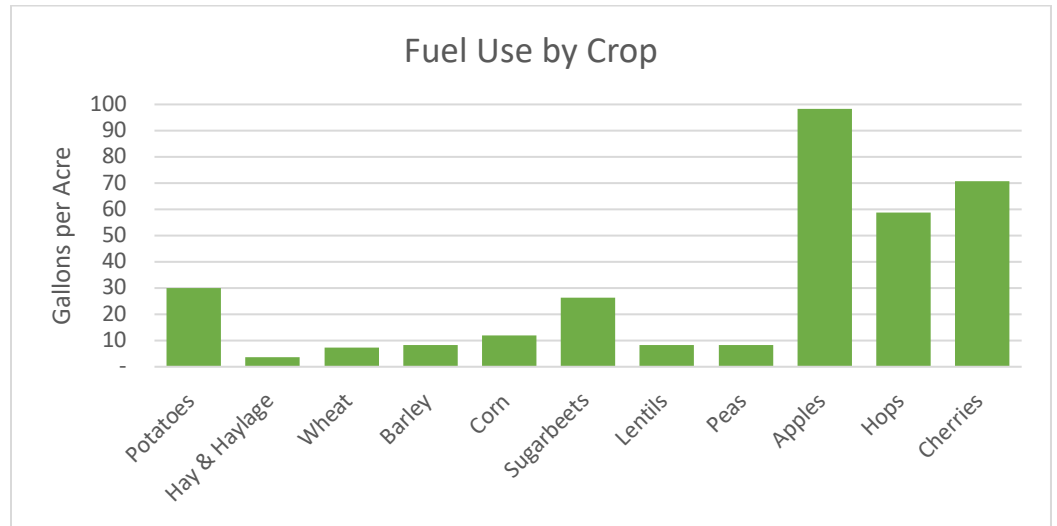
Grain crops typically use lower amounts of fuel.

Apples, hops and cherries tend to need more fuel use per acre.

Fuel Use by Crop

Certain crops are more fuel-intensive, such as a case of hops, apples, cherries, potatoes, and sugar beets. Frost protection, spraying needs, pre-planting preparation, planting processes, and harvesting intensity require more passes in the field and consequently more fuel. In states like Washington, specialty crops are the driver of the high fuel use.

Grain crops including corn, wheat, barley, peas and lentils are lower fuel consumers. Fuel demand for these crops spikes during planting and harvest, with some spraying needed in the growing season. These crops are large consumers when the total acreage farmed is considered, because they are typically farmed on a large scale. In this study hay is considered a low fuel demand crop. However, depending on region this assumption could quickly change as the number of cuttings and baling methods will influence fuel usage.



State by State Analysis

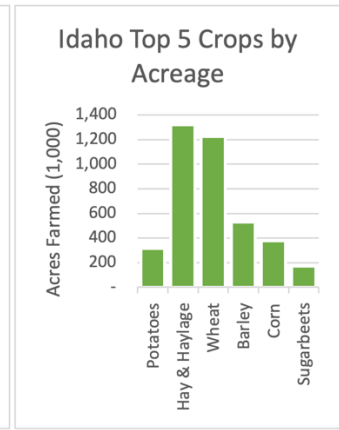
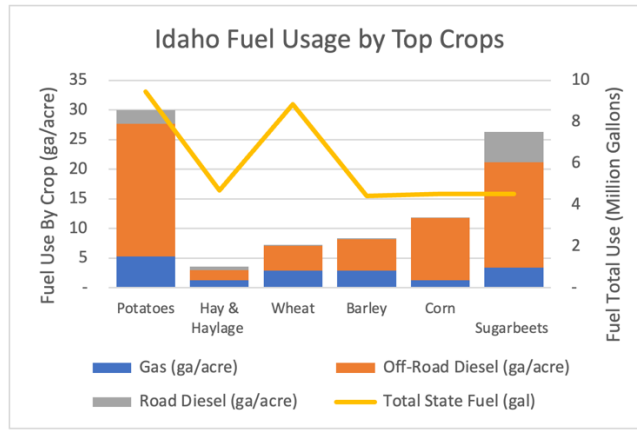
Idaho ranks fourth in agricultural acres and third in estimated fuel usage. Sugar beets were not included in the top five analysis, but this crop is included below because it is a large fuel consumer.⁷

On a per acre basis, potatoes, sugar beets, and corn are the most fuel intensive crops for farmers in Idaho. However, once total acreage by crop is accounted for wheat, hay, and barley are also significant consumers of total fuel. Wheat, hay, and barley are farmed on a very large scale throughout the entire state, whereas potatoes, sugar beets, and corn are limited to suitable regions.

⁷ The sugar beet crop value is not estimated by USDA NASS so it is not a ranked crop in terms of this study. However, it is a valuable crop to Idaho and was included for the state comparison because of its importance to the local economy.

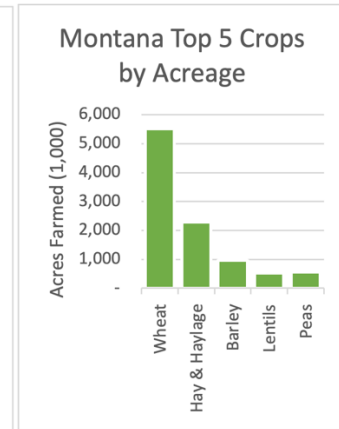
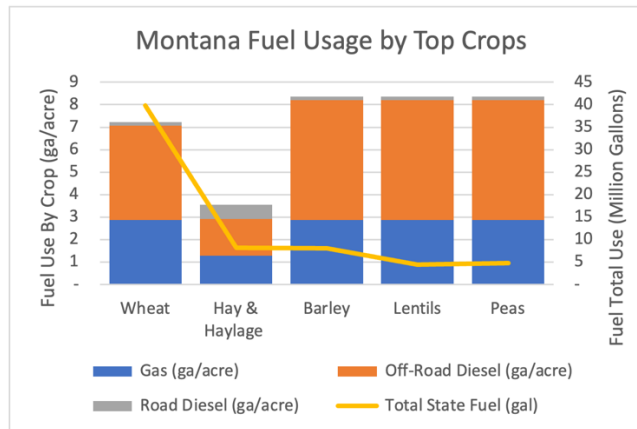
KEY INFORMATION COLUMN

Idaho's top fuel use by crops includes potatoes and sugarbeets.



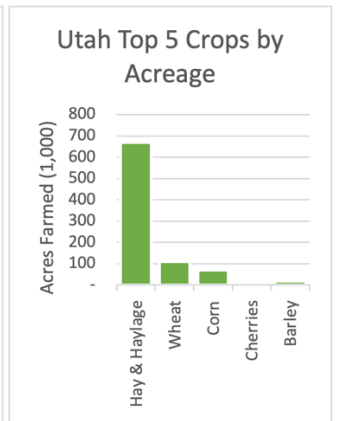
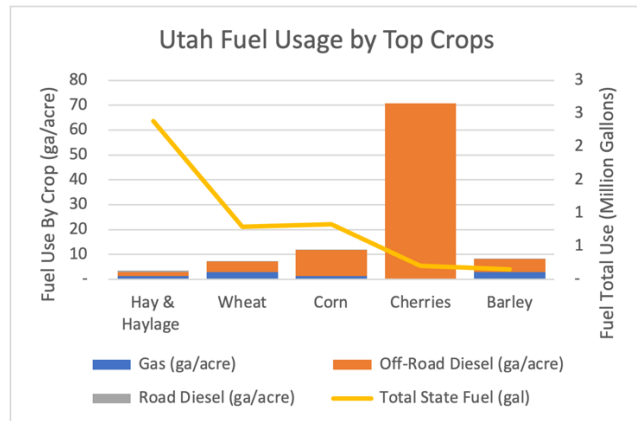
Montana's top five agricultural crops are similar in fuel usage, ranging from 3.56 gallons per acre to 8.36 gallons per acre. Grain crops including barley, lentils, peas, and wheat have almost the same production practices and the fuel usage is similar. The difference for Montana plays out, when acreage is accounted for, and the 5.5 million acres of wheat consumes the largest amount of fuel.

Montana's top fuel use by crops includes barley, lentils and peas.



In the Western States, Utah is the lowest consumer of fuel for farming. Utah's highest fuel consumption per acre is for cherry production, however, the acreage is small for this sector.⁸ When total acreage is accounted for, overall agricultural fuel consumption in Utah is driven by large areas of hay acreage.

Utah's top fuel use by crop is for cherries.

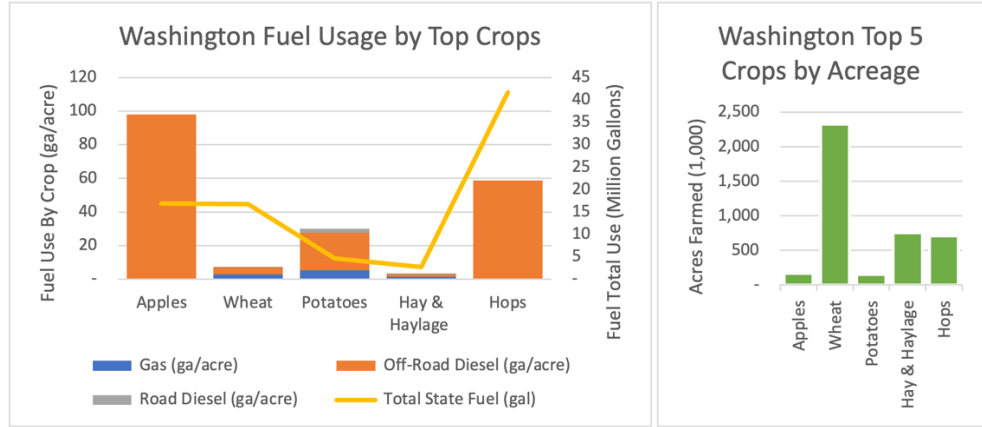


⁸ The fuel estimate for cherries, is a lump estimate of all fuel types.

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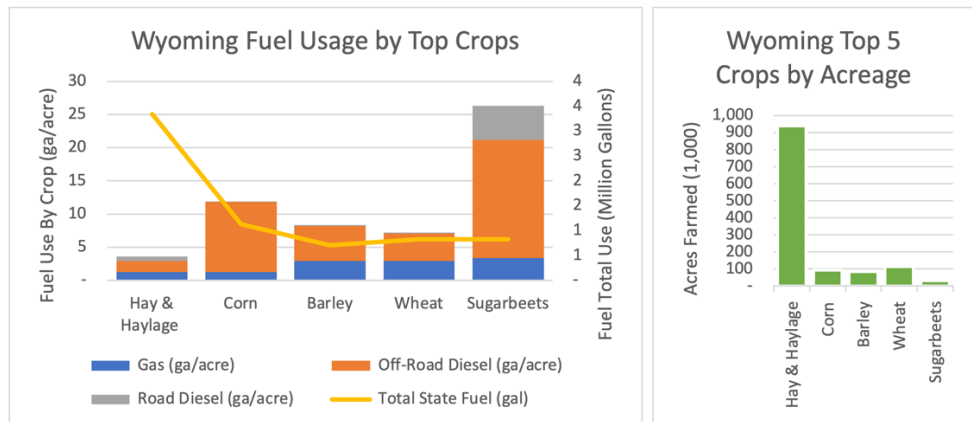
Washington state uses the most fuel on its apple crop.

Washington’s fuel consumption is driven by the presence of specialty crops like apples and hops. In addition to normal tractor work, apples require frost protection in cold springs. Frost protection is a fuel intensive process requiring propane and diesel to protect tender blossoms. Hops also require a large amount of fuel for growing and drying purposes. An enterprise budget for hops estimated fuel usage at \$150 per acre for the growing season, and \$250 per acre for drying (the drying cost was excluded because the type of fuel was unknown).⁹



Wyoming is the second lowest consumer of agricultural fuel within the Western States. Sugar beets are the only specialty, high fuel usage crop within Wyoming and the total acreage is small. Hay is the largest driver of total fuel usage because it is the largest crop by acreage.

Wyoming uses the most fuel on its sugarbeet crop.



Discussion and Conclusion

The use of fuel for farming is varied across the western states. Specialty crops and acreage totals are the driving forces to total fuel usage. Apples, cherries, hops, potatoes, and sugar beets are fuel intensive and require more fuel per acre. However, sizable regions of hay and wheat require large amounts of fuel to harvest.

Policies impacting fuel availability and price must consider the vulnerability of the ag industry in the western states. Elevated fuel prices and constrained supplies encourage farmers to switch to less fuel intensive crops and to stop farming less

⁹ The fuel estimates for apples and hops are lump estimates of all fuel types.

**KEY INFORMATION
COLUMN**

Potato production is fuel and labor-intensive.

productive ground, thus threatening food security and hurting farming communities. Consider two examples which illustrate the impact of high fuel prices on farming communities.

The first is potato production in Idaho and Washington. Potatoes are a fuel and labor-intensive crop. As fuel prices and supply become less reliable, farmers will look for lower fuel consuming choices, like hay and wheat. These new crops require fewer workers, meaning higher unemployment in farming communities and more attrition as families move for work, hurting the local economy and community.

The second example is dryland farming regions which often deal with grain production. Grain production operates on a very tight margin. Escalating fuel costs create a loss for low yielding acreages and farmers will choose to leave those grounds fallow. This is a loss of income for the farmer, and for supporting industries like seed and input suppliers, grain buyers, aerial applicators and more. The loss of income hurts the entire economy of these already struggling farming communities.

Ignoring the high fuel prices and unpredictable supply is not an option.

Policymakers in the western states need to protect the domestic supply of oil and encourage domestic production. This is the only solution that puts western state farmers and families first.

Nothing in this publication shall be construed as an attempt to aid or hinder the passage of any legislation.