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COMPARISON OF AFPC REPRESENTATIVE GRAIN SORGHUM FARMS COSTS OF PRODUCTION TO USDA-ERS REGIONAL ESTIMATES



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The USDA-ERS develops and provides annual commodity costs and returns estimates for major agricultural commodities. USDA conducts surveys every four to eight years to determine production costs and returns for nine crops and three livestock enterprises. The surveys are typically administered as part of the annual Agricultural Resource Management Survey (ARMS) and are intended to reflect costs experienced by agricultural producers. The 2010 historical grain sorghum cost and returns estimates developed by USDA are based on a survey base year of 2003 and have been adjusted annually using price indices and other indicators deemed appropriate by USDA to reflect annual changes between survey base years. Both regional and whole United States estimates are available. Forecasted costs and returns are also developed as a part of the USDA Baseline projections; however, these projections are only provided at the national level.

The Agricultural and Food Policy Center (AFPC) at Texas A&M University develops and maintains fourteen representative farms in Texas and Kansas that grow grain sorghum. The representative farms are initially developed through a focus group interview process, and follow-up meetings are conducted every two to three years to calibrate the data. Projected prices, policy variables, and rates of change for variable and overhead costs are obtained from annual baselines generated by the Food and Agricultural Policy Research Institute (FAPRI) at the University of Missouri. Baseline data from FAPRI are used to adjust the representative farms between visits with the producer groups.

Cost categories are similar between USDA and AFPC; however, subtle differences exist. For example, USDA has a single entry for fuel, lube, and electricity, while AFPC has separate entries for fuel and utilities. Similarly, USDA lumps taxes and insurance versus the AFPC method of splitting out personal property taxes, real estate taxes, along with insurance. For conciseness, individual components of the AFPC and USDA cost estimates were aggregated and grouped into six major categories: seed, fertilizer, chemicals, fuel, other variable costs, and overhead. This grouping facilitates comparisons between the two different methods of estimating production costs. The AFPC representative farms utilize a whole farm approach to allocating fixed costs versus a single commodity approach; so overhead costs are allocated by percent of receipts generated by grain sorghum on the representative farm.

Table 1 and Figures 1-14 display estimated costs of production for grain sorghum for AFPC representative farms along with their respective USDA-ERS regional estimates. Total costs are indicated by the stacked bars and seasonal cost per bushel are indicated in parenthesis on the top of the bars. On a cost per acre basis, 2010 USDA regional estimates are higher than AFPC representative farm estimates for all nine farms located in the Prairie Gateway USDA Farm Resource Region, a region covering the Texas Plains, Central Texas, and Kansas. Conversely, AFPC representative farms have higher estimated production costs per acre on three of the five representative farms located in the Fruitful Rim Farm Resource Region, a region that includes the Gulf Coast and Lower Rio Grande Valley of Texas.

The Texas Northern Plains grain farm (TXNP8000) is the only representative farm in the Fruitful Rim with higher costs of production for grain sorghum on a cost per bushel basis. This farm spends \$5.05 per bushel to produce grain sorghum while the USDA estimate for the Prairie Gateway is \$4.82 per bushel. TXNP8000 is primarily an irrigated farm that grows dryland crops such as grain sorghum on the corners of center pivot irrigated land, so yields are relatively low and, at least in part, lead to higher costs of production on a cost per bushel basis. The TXER3200 farm is a representative rice farm in El Campo, Texas that grows grain sorghum as part of its rotation. TXER3200 has estimated costs of production for grain sorghum of \$4.58 per bushel, a value equal to the Farm Resource Region in which it is located, the Fruitful Rim.

Source: <http://www.ers.usda.gov/data/costsandreturns/>

Table 1. Estimated Costs of Production for Grain Sorghum on AFPC Representative Farms by USDA-ERS Farm Resource Regions, 2010.

	Yield --bu/Acre--	Variable Costs --\$/Acre--	Overhead Costs --\$/Acre--	Total Costs --\$/Acre--	Total Costs --\$/bu--
<i>Prairie Gateway</i>	68.0	149.96	177.82	327.78	4.82
TXNP8000	30.3	75.20	77.78	152.98	5.05
TXPG2500	30.4	44.99	90.98	135.98	4.47
TXEC5000	44.6	57.64	100.01	157.65	3.53
TXHG2000	67.0	171.50	117.47	288.97	4.31
TXWG1600	71.4	138.08	135.28	273.36	3.83
KSCW2000	75.0	102.67	171.05	273.72	3.65
KSCW4500	80.0	101.70	161.61	263.31	3.29
KSNW4000	80.0	108.94	146.34	255.28	3.19
KSNW5500	80.0	179.72	146.38	326.09	4.08
<i>Fruitful Rim</i>	65.0	118.06	179.58	297.64	4.58
TXMC1800	85.7	157.91	183.96	341.88	3.99
TXER3200	80.4	208.52	159.79	368.31	4.58
TXCB2250	71.4	126.19	146.98	273.18	3.82
TXCB8000	80.4	156.88	154.99	311.86	3.88
TXVC4500	70.0	88.22	170.80	259.02	3.70

Figure 1. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXNP8000) and USDA (Prairie Gateway), 2010.

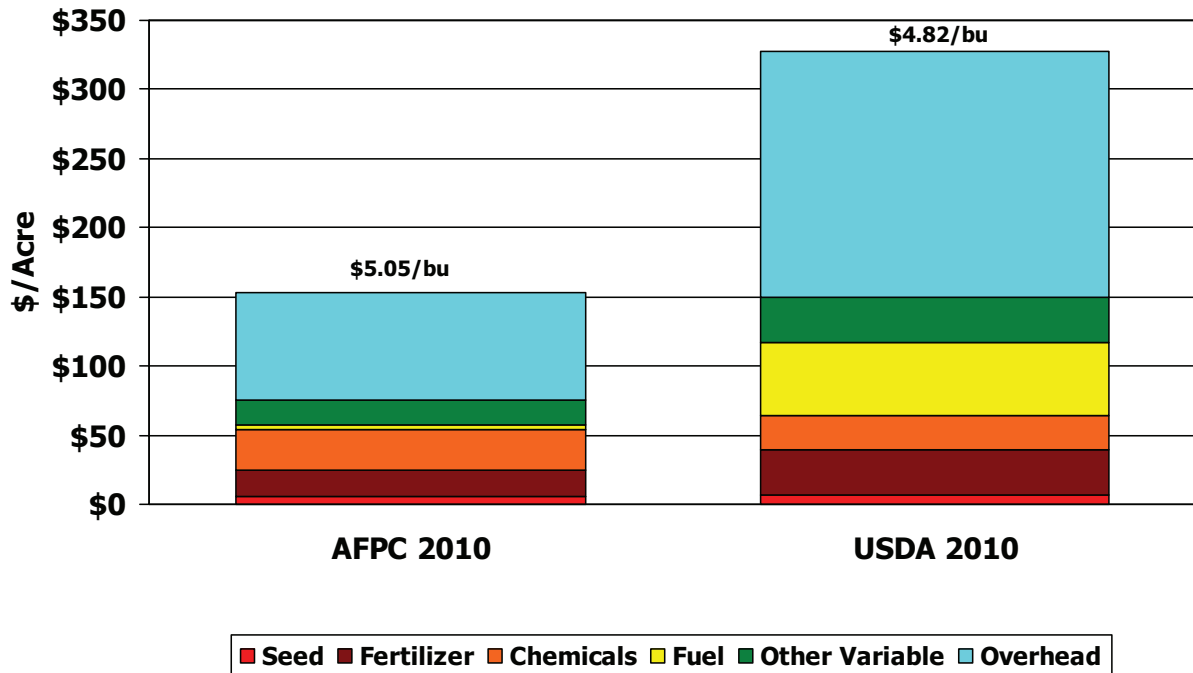


Figure 2. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXPG2500) and USDA (Prairie Gateway), 2010.

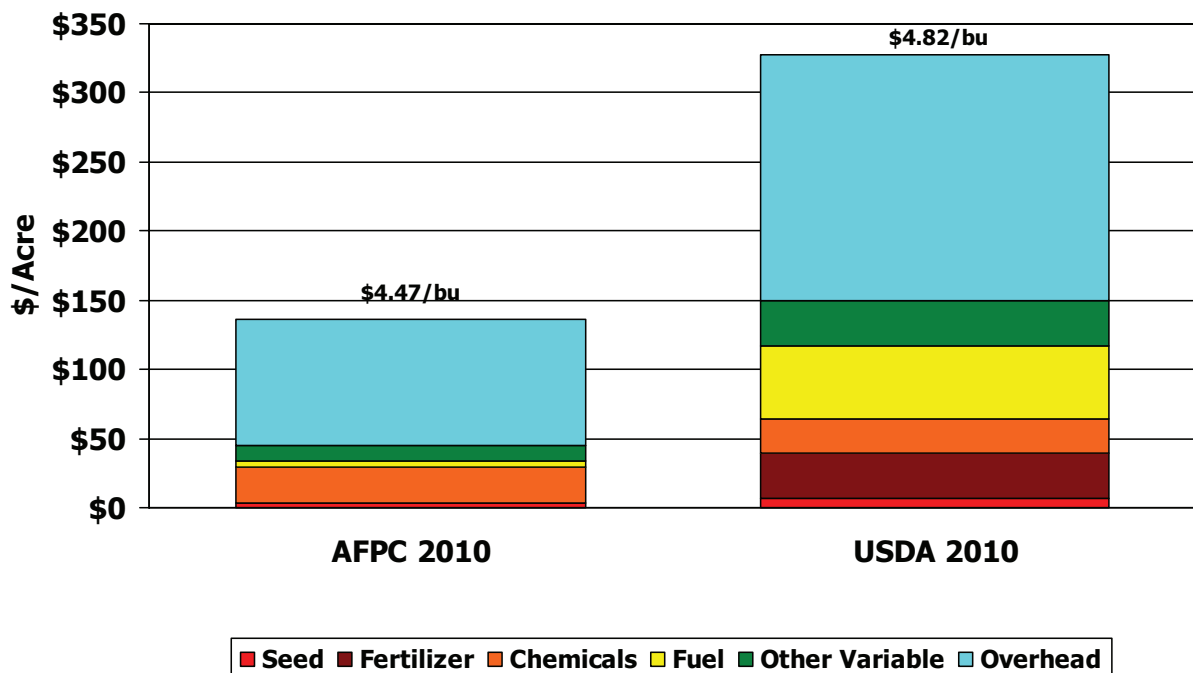


Figure 3. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXEC5000) and USDA (Prairie Gateway), 2010.

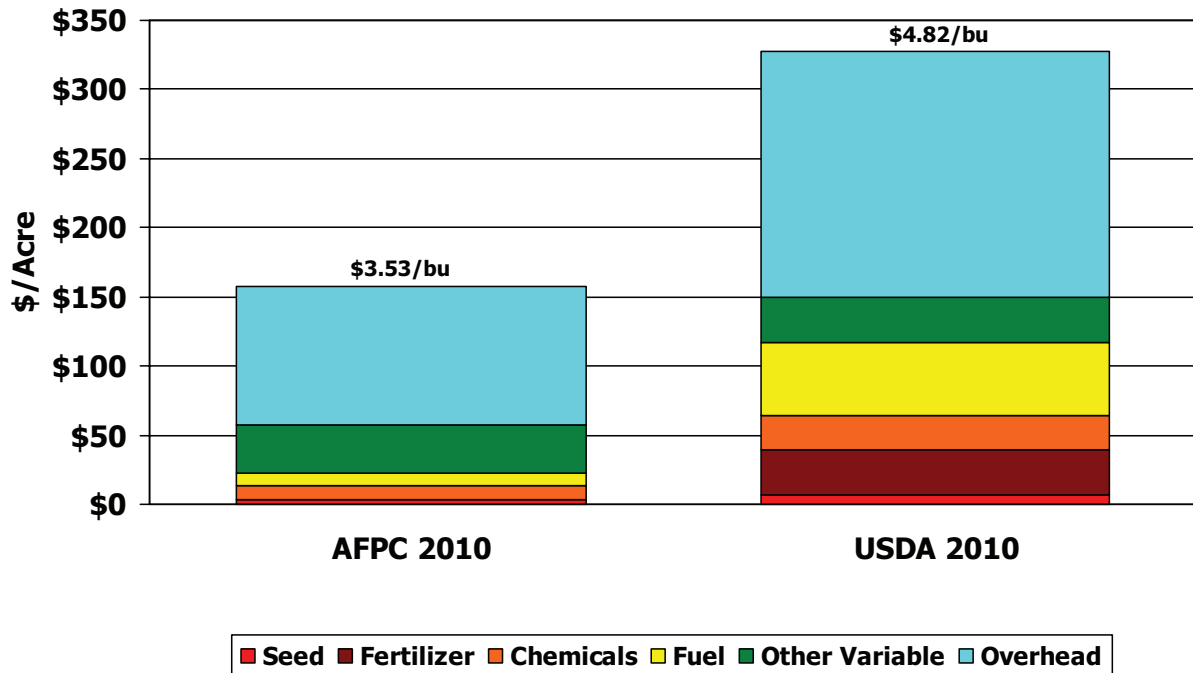


Figure 4. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXHG2000) and USDA (Prairie Gateway), 2010.

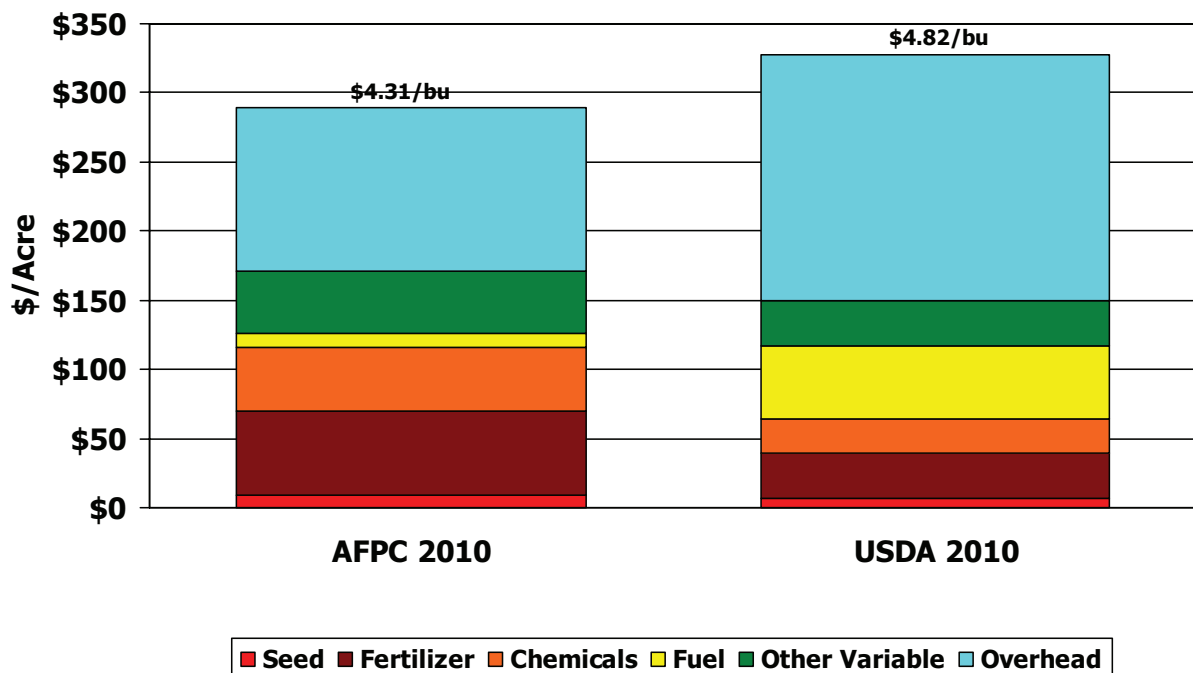


Figure 5. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXWG1600) and USDA (Prairie Gateway), 2010.

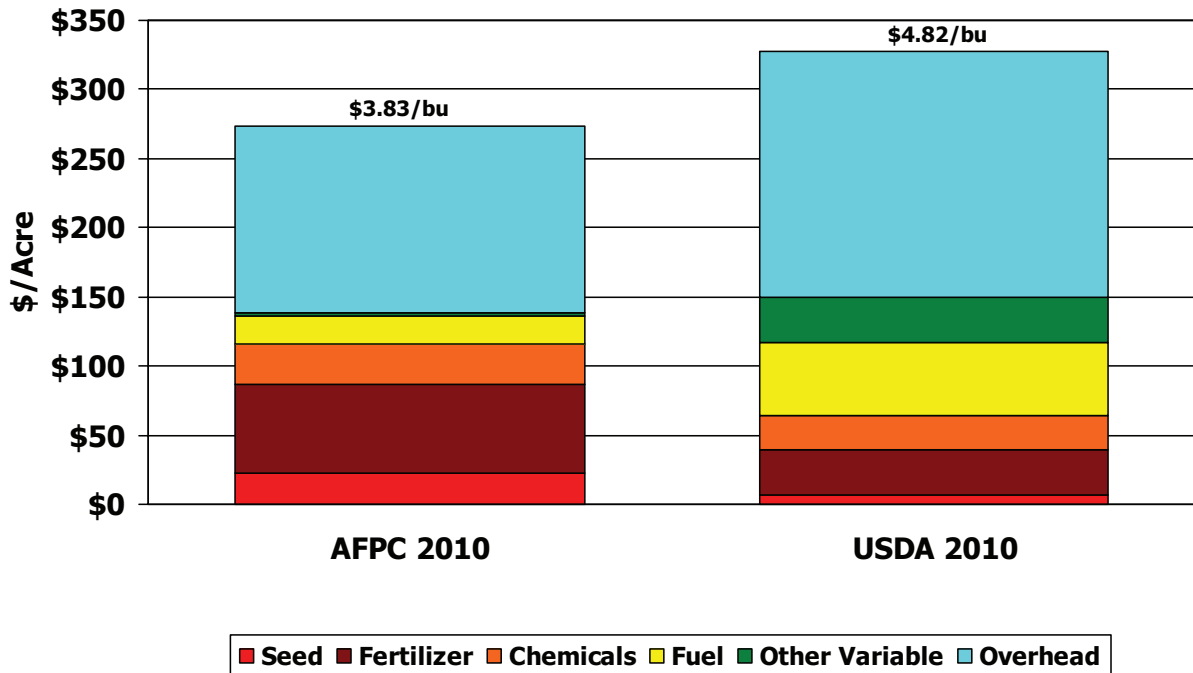


Figure 6. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (KSCW2000) and USDA (Prairie Gateway), 2010.

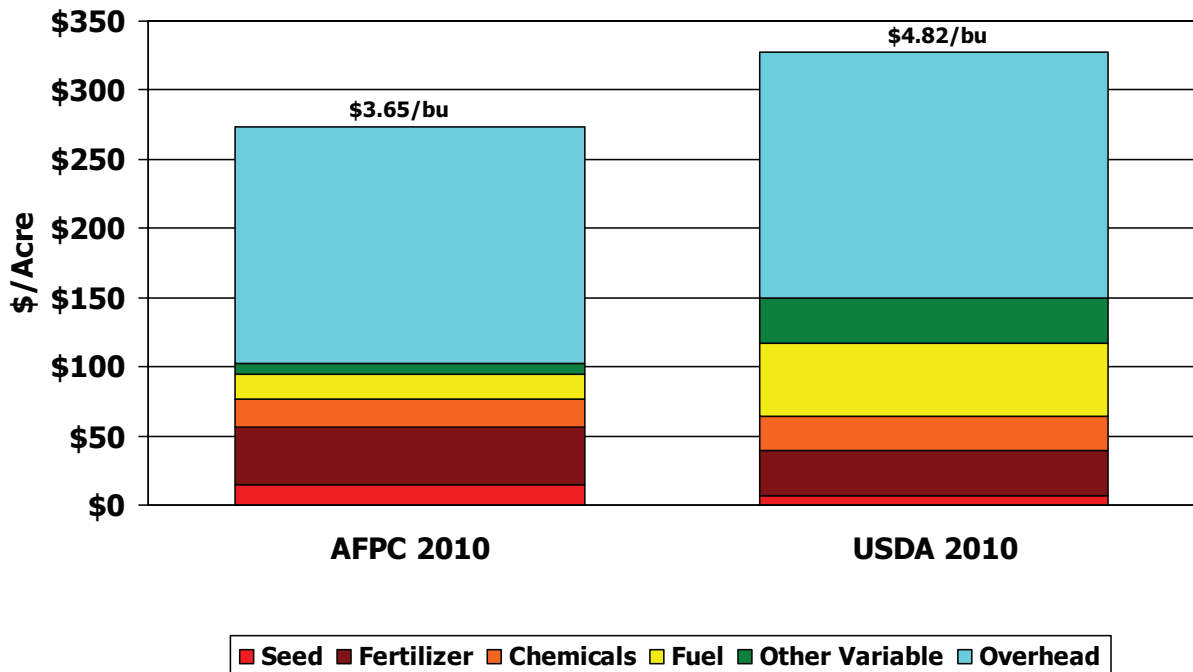


Figure 7. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (KSCW4500) and USDA (Prairie Gateway), 2010.

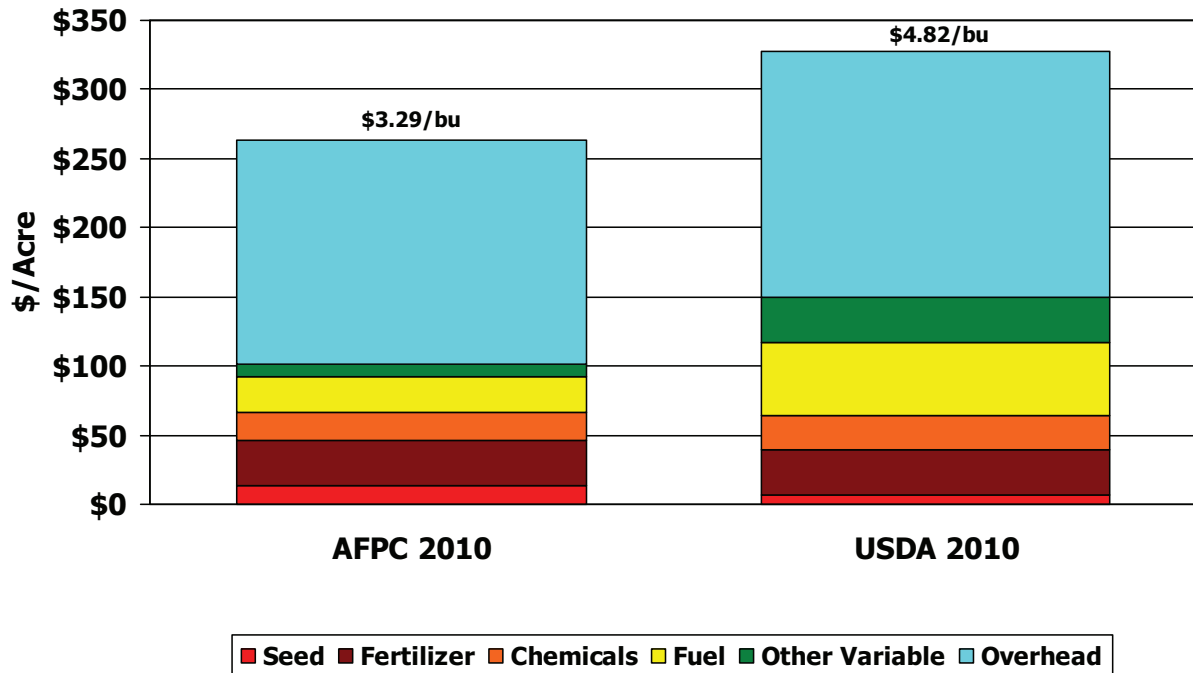


Figure 8. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (KSNW4000) and USDA (Prairie Gateway), 2010.

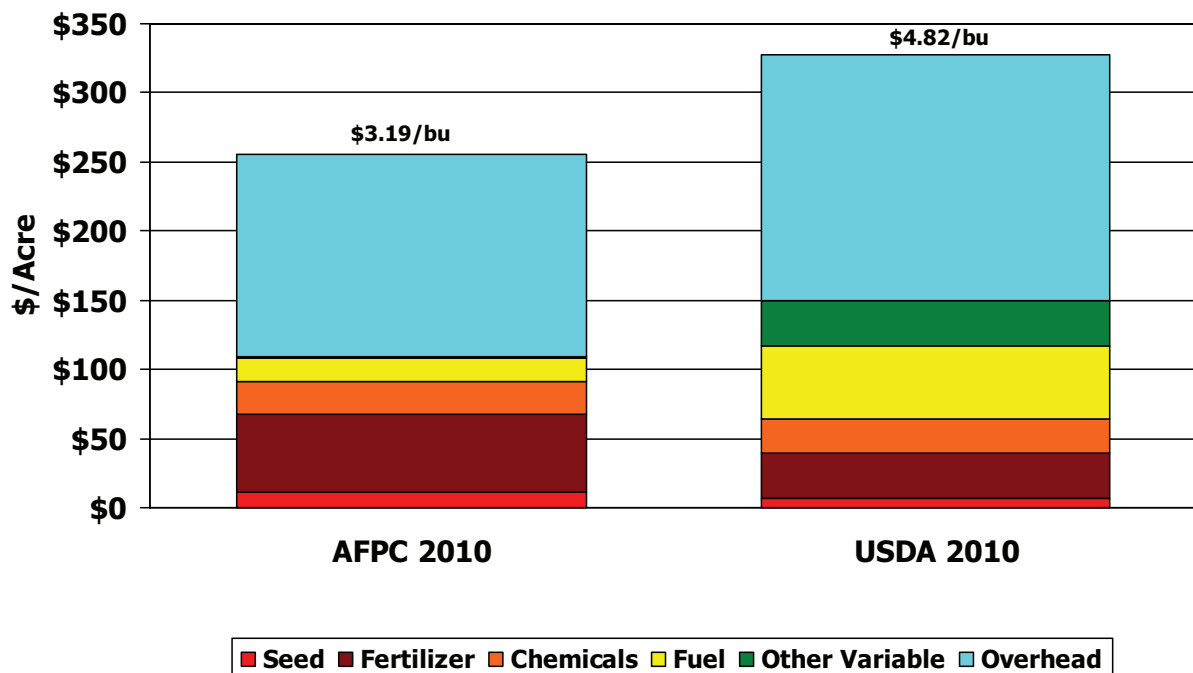


Figure 9. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (KSNW5500) and USDA (Prairie Gateway), 2010.

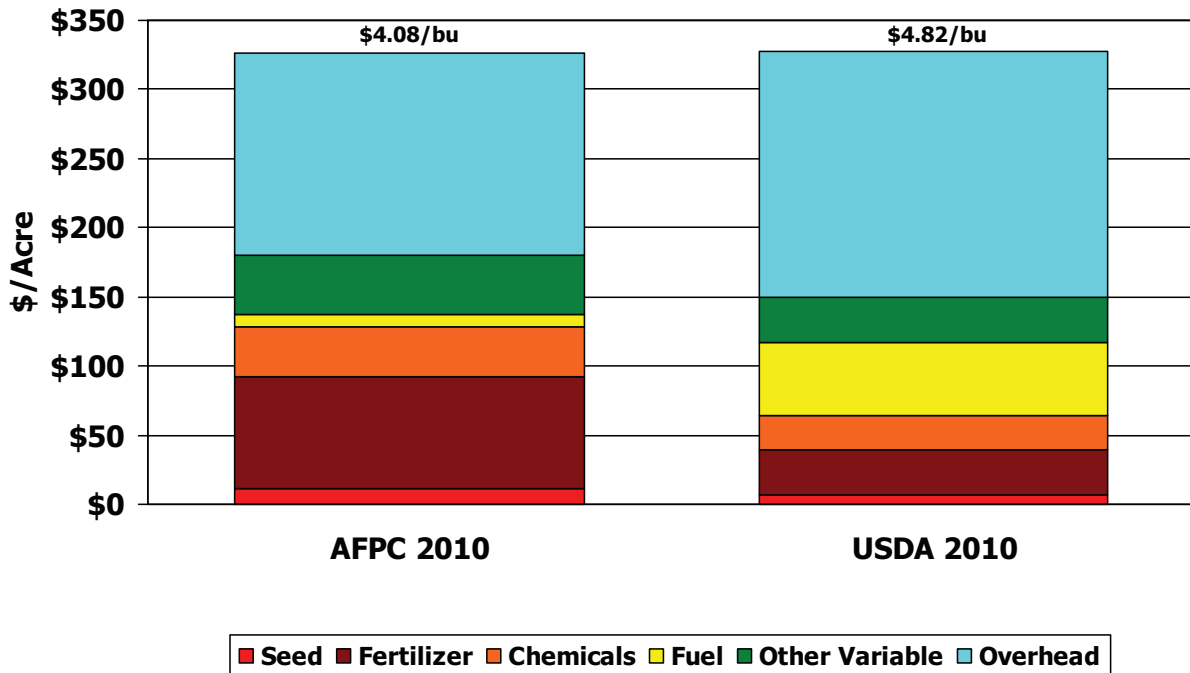


Figure 10. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXMC1800) and USDA (Fruitful Rim), 2010.

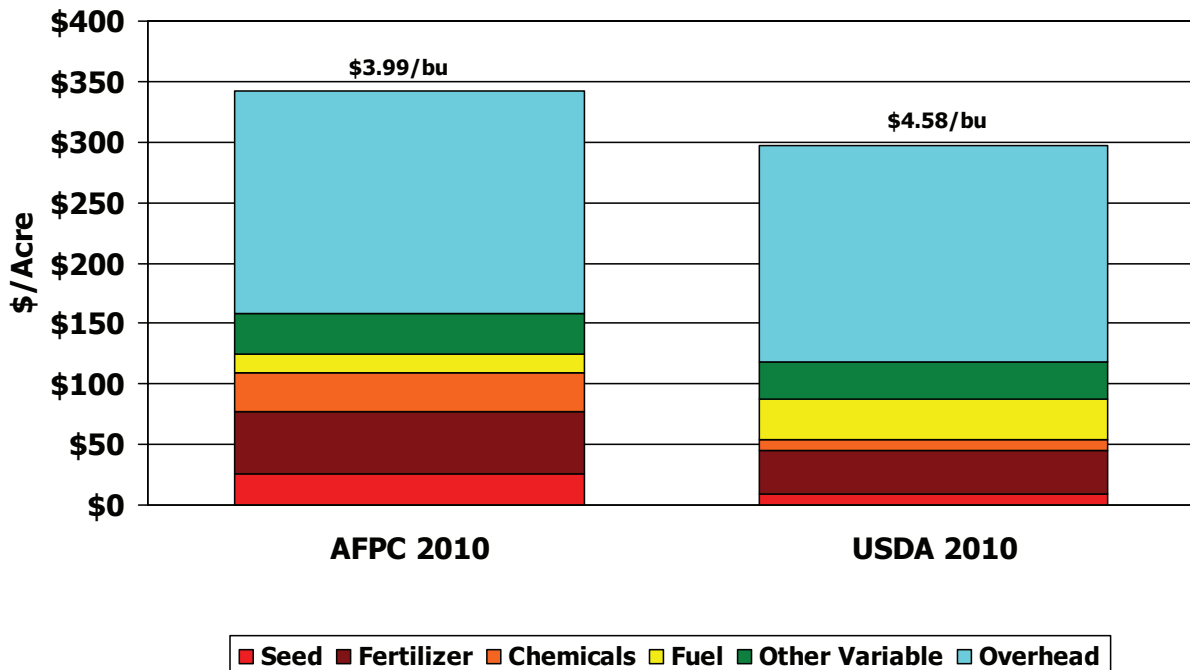


Figure 11. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXER3200) and USDA (Fruitful Rim), 2010.

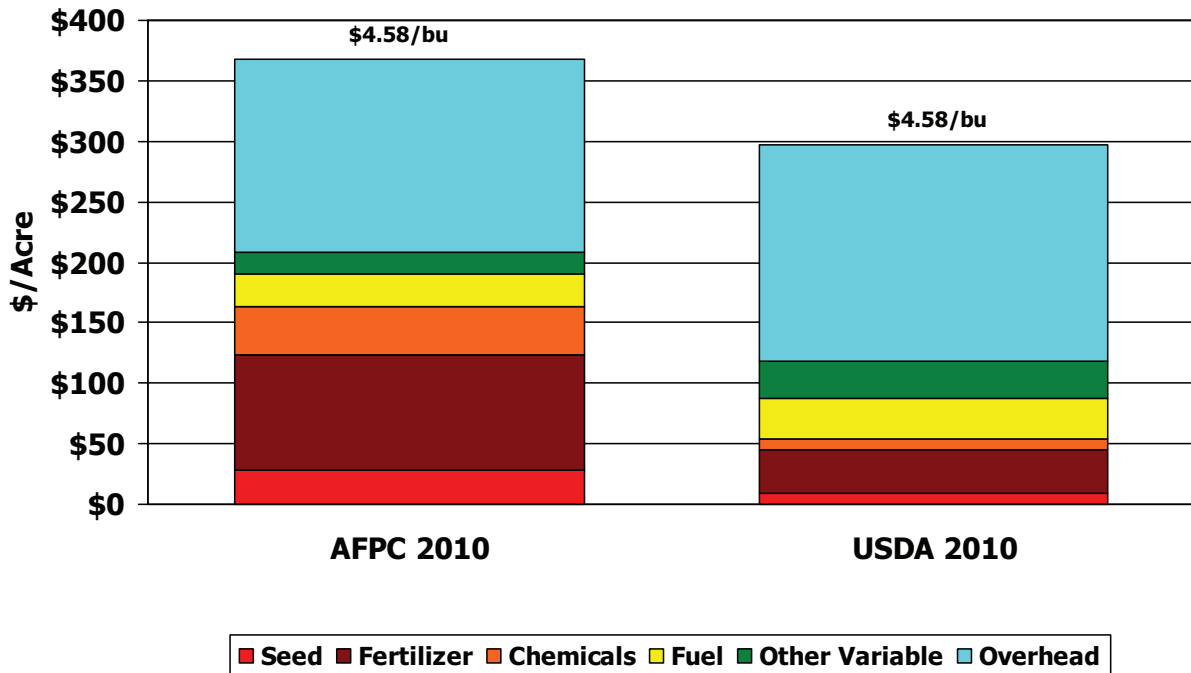


Figure 12. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXCB2250) and USDA (Fruitful Rim), 2010.

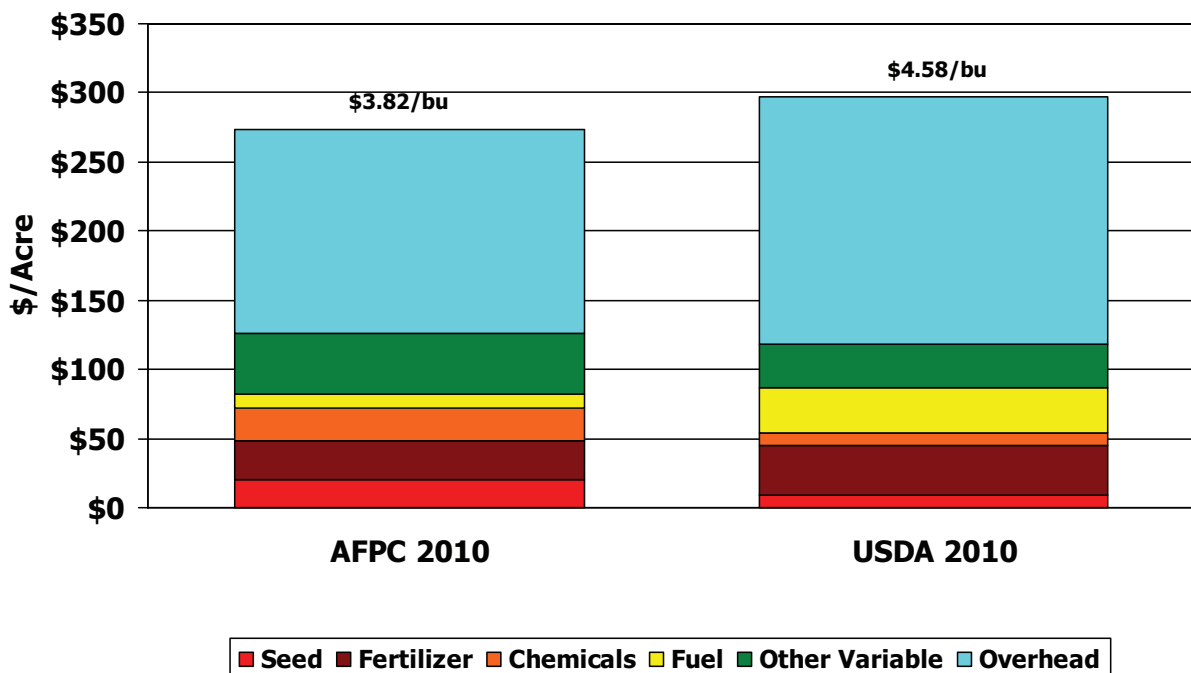


Figure 13. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXCB8000) and USDA (Fruitful Rim), 2010.

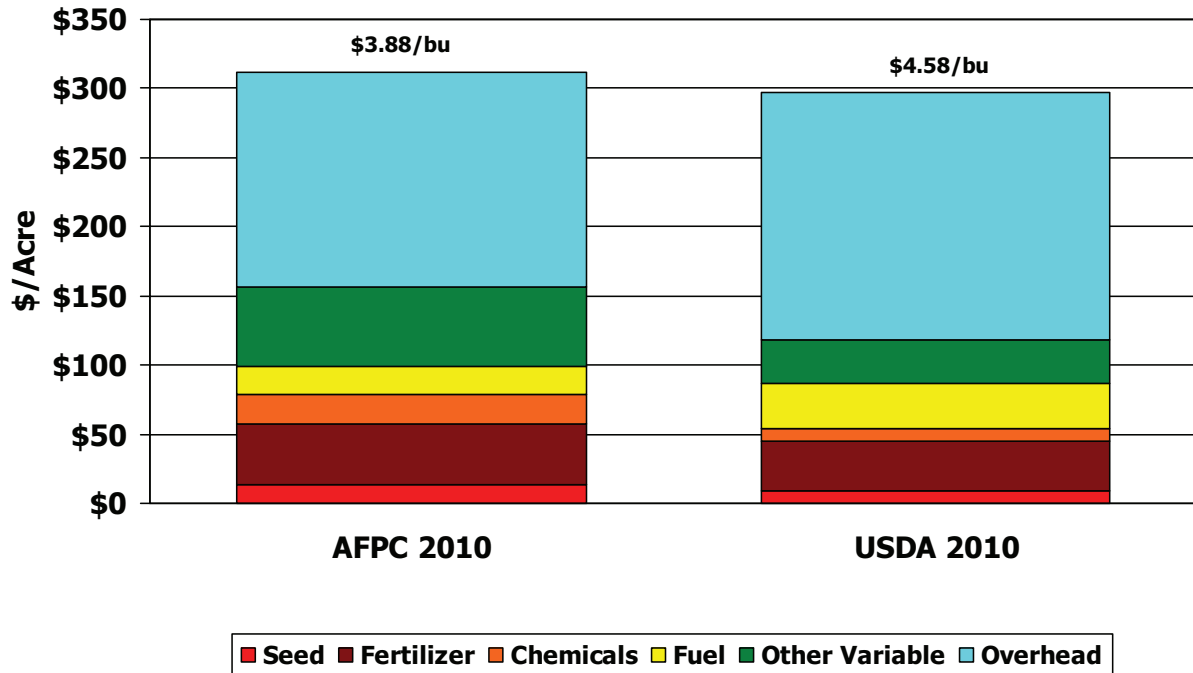
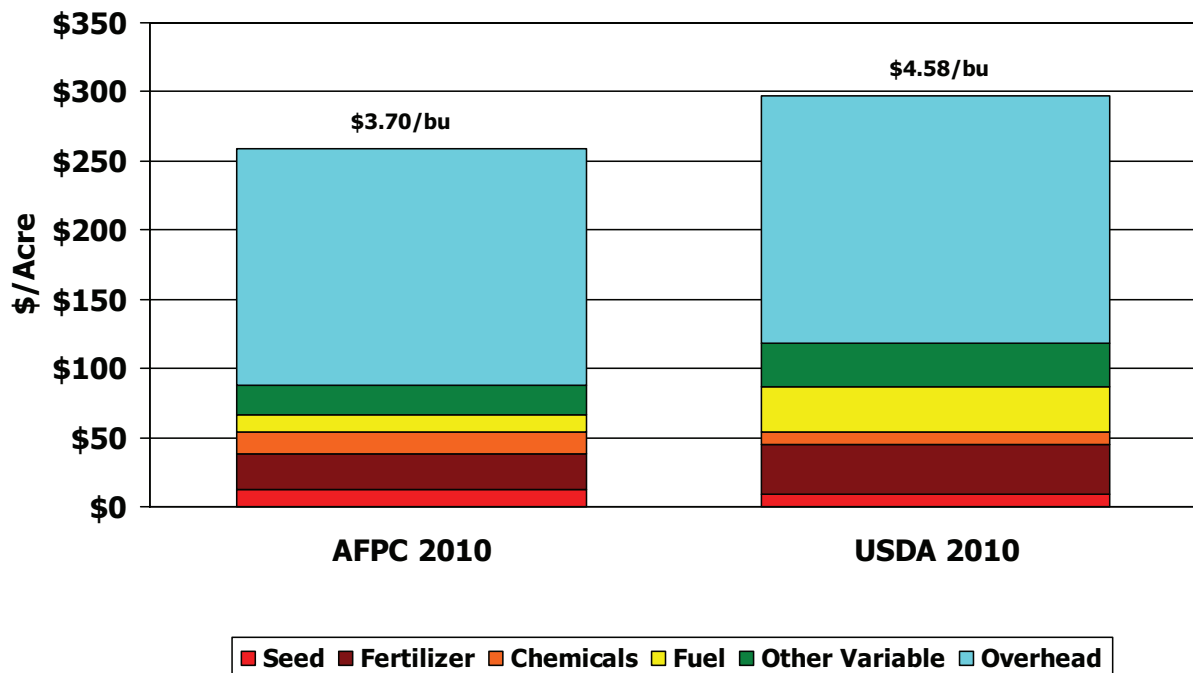


Figure 14. Comparison of Estimated Costs of Production for Grain Sorghum between AFPC Representative Farm (TXVC4500) and USDA (Fruitful Rim), 2010.



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