

**CONTRIBUTION OF THE RENEWABLE FUELS INDUSTRY
TO THE ECONOMY OF IOWA**

Prepared for the Iowa Renewable Fuels Association

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Iowa's renewable fuels industry continued to provide a significant contribution to the state's economy in 2017. For the year, Iowa's 43 operating ethanol plants produced a record level of 4.2 billion gallons, leading the nation and accounting for 26 percent of U.S. capacity. Iowa also is the nation's leading biodiesel manufacturer, accounting for more than 13 percent of total U.S. production at 286 million gallons in 2017. Supported by Iowa's stable policy environment, including Iowa's seven-year extension of renewable fuels tax credits in 2016, Iowa biodiesel and ethanol producers commenced a historic level of investment and capital expenditures to expand production capacity. This expansion marks the single largest building boom since the historic expansion of the industry in the early 2000s, and the first major expansion of production capacity since 2008.

However, the year was challenging in several respects. On the output side, ethanol prices (FOB Iowa plant) fell 1.1 percent and Iowa biodiesel prices were two percent lower than year-earlier levels during 2017. Further, the price of DDGS, the principal ethanol co-product, was sharply lower. While corn prices were modestly lower in 2017, most other inputs, notably natural gas as well as fat and oil feedstocks for biodiesel, increased. Consequently, net revenue for Iowa ethanol and biodiesel producers was modestly lower in 2017.

Renewable fuels plants purchase agricultural raw materials, other inputs, and a wide range of goods and services such as industrial chemicals; electricity, natural gas, and water; labor; and services such as maintenance, insurance, and general overhead. The primary ethanol feedstock for ethanol remains corn while the biodiesel industry uses a wider variety of fats and oils as feedstocks. In addition, funding for biofuels research and development from various sources benefits the state's economy. The 4.2 billion

gallons of ethanol produced in Iowa last year utilized 1.5 billion bushels of corn, or nearly 58 percent of Iowa's 2017 2.6-billion-bushel corn crop.

Expenditures on these goods and services represent the purchase of output of other industries. A substantial share of these dollars is spent in Iowa, and the economic impact stays in the state. Spending associated with ethanol production circulates throughout the entire economy several-fold. Consequently, this spending stimulates aggregate demand, supports jobs not only in ethanol production but also jobs throughout the entire economy, generates additional household income, and provides tax revenue for state and local government.

At the request of the Iowa Renewable Fuels Association (IRFA), ABF Economics developed models to estimate the economic impacts of ethanol and biodiesel production in Iowa. The following report summarizes our methods and results. This report: 1) summarizes current trends in the national biofuel industry, 2) outlines the methods used to estimate impacts, and 3) presents results of the analysis.

1. National Trends in Ethanol Production

The U.S. ethanol industry had a remarkable year in 2017. Ethanol production increased to record levels, domestic and export demand expanded, and construction of new production facilities posted its first major gain in more than five years.

- Industry output through November 2017 was 3.0 percent above 2016 levels and was poised to set a new record of nearly 15.9 billion gallons for the full year.
- World oil prices reversed the declines seen in recent years and posted a 16.5 percent gain during 2017, leading to higher consumer gasoline prices. Despite higher average motor gasoline prices during 2017, gasoline – and ethanol – demand expanded by about one percent.
- Responding to record production and larger stocks, ethanol prices generally fell during 2017. Omaha Rack ethanol prices were 6.8 percent lower for the full year, while Iowa ethanol prices (FOB plant) fell 1.1 percent.

- The export markets were a significant bright spot for the industry. Based on USITC data, exports through November 2017 were up 13.5 percent from year-earlier levels and were poised to reach a record level of more than 1.3 million gallons for the year.
- At year's end, the U.S. ethanol industry had 465 million gallons of capacity under expansion or construction. This is the most significant increase in new capacity since 2011.
- The input markets were generally positive for the ethanol industry during 2017. American corn growers posted the second largest crop on record in 2017, which pushed feedstock prices lower throughout the year. Average cash market corn prices during 2017 were 2.3 percent lower than a year earlier.¹ Lower corn prices offset slight increases in natural gas and electricity prices and supported ethanol profitability in 2017. Net returns over variable costs for a typical dry mill ethanol plant were modestly higher than year-ago levels during the first half of 2017 but slipped in the second half as ethanol and DDGS prices fell. Despite this pattern, ethanol profitability (returns over variable costs) remained positive for the full year, averaging an estimated 20 cents per gallon.²

The regulatory and trade environment continued to provide challenges for the industry. On November 30, the Environmental Protection Agency (EPA) released its final rule for 2018 renewable volume obligations (RVOs) under the Renewable Fuel Standard (RFS). The final rule includes a requirement for 15 billion gallons of conventional renewable fuel (e.g., corn starch ethanol) in 2018, equal to the level established by Congress in the 2007 Energy Independence and Security Act. However, the rule uses EPA's cellulosic waiver authority to reduce the advanced biofuel requirement from the statutory level of 11 billion gallons to 4.29 billion gallons. Within this category the RVO for cellulosic biofuels is 288 million gallons, far short of the statutory level of 7 billion gallons and 7 percent lower than the final 2017 cellulosic biofuel requirement.

¹ No. 2 Yellow Corn, Central Illinois; Ethanol FOB Iowa Plant and Ethanol Omaha Rack. Source USDA and Nebraska Ethanol Board.

² Iowa State University AgDecision Maker Ethanol Profitability available at <http://www.extension.iastate.edu/agdm/energy/xls/d1-10ethanolprofitability.xlsx> accessed Jan 11, 2018

As pointed out above, ethanol exports expanded significantly in 2017 posting an estimated 12.5 percent increase to a new record level. However, tariffs on U.S. ethanol in China, Brazil, and the European Union constrained exports from growing more robustly. The situation for exports of ethanol co-products, notably DDGS, was also affected by trade barriers. As a consequence of anti-dumping and countervailing duties imposed against U.S. DDGS exports by China, exports to that country fell from 2.2 million metric tons for the first 11 months of 2016 to 347,000 metric tons in 2017. China, which has been the leading export market for U.S. DDGS, slipped to eighth place amongst top DDGS export markets.

In addition to ethanol refining and agriculture, there is a significant amount of public and private sector funding for research and development aimed at discovering and developing advanced biofuels feedstock and the technology needed to meet the RFS2 targets for cellulosic and advanced biofuels. The primary public-sector agencies underwriting R&D in biofuels are the U.S. Departments of Energy (USDOE), Agriculture (USDA), and Defense (DOD). In addition to the federal government, many states are funding R&D in feedstock as well as infrastructure. These public funds are being leveraged significantly by private sector firms undertaking research in a wide range of biofuels activities. We have assumed that R&D spending on biofuels continued to expand during 2017 as the need for new feedstocks grows. Reflecting this we assumed that industry R&D expenditures grew at the overall rate of inflation and totaled an estimated \$882 million in 2017.³ Iowa participates in these R&D activities.

The renewable fuels industry is multifaceted. Ethanol and biodiesel producers are part of a manufacturing sector that adds substantial value to agricultural commodities produced in Iowa. The first and second-generation feedstocks used to produce renewable fuels are produced primarily by Iowa farmers, and the R&D expenditures for renewable fuels provide important support for Iowa's universities.

³ Estimates of the amount of R&D spending on biomass and biofuels vary substantially. For a discussion of R&D spending on biofuels see "Agricultural Preparedness and the Agriculture Research Enterprise". President's Council of Advisors on Science and Technology. Washington DC, December 2012. A 2013 study prepared by Mary Solecki, Anna Scodel and Bob Epstein at E2 Environmental Entrepreneurs. "Advanced Biofuel Market Report 2013" suggests that R&D spending on biofuels approaches \$1.7 billion. A (relatively) new report on federal spending on R&D in energy published by EIA ("Direct Federal Financial Interventions and Subsidies in Energy in Fiscal year 2013", March 2015) estimates Federal R&D expenditures for biomass of \$300 million in FY 2013. This study does not include estimates for corporate (private sector) R&D.

Combined, these activities make a significant contribution to the Iowa economy. Based on its size and scope the renewable fuels industry had the following impacts on Iowa's economy in 2017.⁴

- Accounts for nearly \$5 billion, or about 3 percent, of Iowa GDP;
- Generates \$2.4 billion of income for Iowa households; and
- Supports more than 46,860 jobs through the entire Iowa economy. This is equivalent to 2.3 percent of total State employment.

The annualized contribution of the ethanol and biodiesel industries is summarized in Table 1.

Table 1
Total Economic Impact of the Renewable Fuels Industry for Iowa: 2017

	Purchases (Mil 2017\$)	GDP (Mil 2017\$)	Household Earnings (Mil 2017\$)	Employment (Jobs)
Ethanol*	\$6,609.8	\$4,532.4	\$2,154.5	43,079
Biodiesel	\$854.9	\$456.8	\$278.0	3,785
Total	\$7,464.7	\$4,989.2	\$2,432.5	46,864

* Includes agriculture, construction, investment in R&D, and exports

Methodology

The spending associated with renewable fuels production, construction, and R&D circulates throughout the entire Iowa economy several-fold. Consequently, this spending stimulates aggregate demand, supports the creation of new jobs, generates additional household income, and provides tax revenue for State and local governments. We estimate the impact of the renewable fuels industry on the Iowa economy by applying expenditures by the relevant supplying industry to the appropriate final demand multipliers for value added output, earnings, and employment.

⁴ This study estimates the annualized impact of producing 4.1 billion gallons of ethanol and 297 million gallons of biodiesel on Iowa's economy. These figures reflect the capacity of ethanol and biodiesel plants operating at year's end.

This study utilizes the IMPLAN (Impact Analysis for Planning) economic model to develop this understanding of the economy, including the sectors that support the ethanol industry, the links between them, and the level of economic activity. IMPLAN is a commonly used economic input-output (I-O) model. I-O models are constructed based on the concept that all industries within an economy are linked together; the output of one industry becomes the input of another industry until all final goods and services are produced. I-O models can be used both to analyze the structure of the economy and to estimate the total economic impact of projects or policies. For this analysis, a model for the Iowa economy was constructed using the most recent IMPLAN software and data and used to estimate economic impacts of the ethanol and biodiesel industries. Detail regarding the IMPLAN model and how it was used is presented in Appendix A.

In addition to using the updated IMPLAN data discussed above we continued to recognize the impact of income generated by locally owned renewable fuels firms. All corporations earn income that directly impacts GDP. However, the income earned by firms owned by Iowans largely stays in Iowa and has a more significant impact on the State economy than earnings that are transferred to firms domiciled outside of Iowa. A review of ownership of ethanol and biodiesel firms based on information provided by IRFA suggests that more than half of Iowa's ethanol and biodiesel plants are locally owned. The earnings of locally owned firms are treated as an addition to the household sector since the income is paid to Iowans and their impact is estimated using multipliers for the household sector. The earnings by firms domiciled outside of Iowa are treated as direct additions to GDP.

Changes to the Analysis

This year we continued to incorporate the explicit impact of ethanol and DDGS exports into the analysis. The methodology for estimating the impact of trade differs from that used for industry output.⁵ We have estimated the impact of ethanol and DDGS exports by applying USDA Agricultural Trade multipliers for output and employment to the estimated value of exports for 2017. Since ethanol and DDGS are outputs of the Other Basic Organic Chemicals industry (NAICS Code 32519) we used the USDA trade multipliers for the same industry. The USDA multipliers have three major components (or margins): production, transportation and warehousing, and wholesale/retail trade. Since IMPLAN already incorporates the

⁵ <https://www.ers.usda.gov/data-products/agricultural-trade-multipliers.aspx>

impact of ethanol and DDGS production, to avoid double counting impacts we only applied the margins for transportation and trade to the value of exports. This represents the post-production (or ex-plant) impacts from exports. These results were added to the IMPLAN results. Since Iowa is the nation's largest ethanol producer the Iowa industry participates in the export market. Reflecting this we applied Iowa's share of total production to the total national export impact.

Contribution of the Renewable Fuels Industry

The contribution of the renewable fuels industry to the economy of Iowa is detailed in Table 2. The ethanol industry provides a significant contribution to the Iowa economy, spending \$6.5 billion on raw materials, other inputs, goods and services to produce more than 4 billion gallons of ethanol. The largest share of this spending is for corn and other grains used as the raw material to make ethanol, distillers grains and distillers corn oil.

The Iowa ethanol industry currently utilizes 1.5 billion bushels of corn, or nearly 58 percent of Iowa's corn crop.⁶ At 2017 Iowa farm gate prices this amounts to nearly \$5 billion of revenue to Iowa corn farmers.

Ethanol

As pointed out earlier, U.S. ethanol exports have expanded significantly over the last decade and are projected to more than 1.3 billion gallons for all of 2017 with an export value of \$2.4 billion. Exportable supplies of ethanol have grown over the past seven years as production exceeded domestic use. Moreover, the ethanol industry is generating a trade surplus and helping to reduce the nation's trade deficit. Exports are estimated to generate \$1.8 billion of GDP for the U.S. and support nearly 8,100 jobs. Iowa's share of this amounts to more than \$170 million of GDP and 2,129 jobs.

In addition to providing a growing and reliable domestic market for Iowa farmers, the ethanol industry also provides the opportunity for farmers to enjoy some of the value added to their commodity by further

⁶ The 4.2 billion gallons of ethanol production required 1.5 billion bushels of corn. This amounts to 57 percent of the 2.6 billion bushels of corn harvested in Iowa in 2017. Without the demand for corn provided by the ethanol industry Iowa farmers would likely plant fewer acres to corn, purchase fewer inputs, and produce a smaller crop, thereby reducing the economic contribution provided by the corn industry.

processing. Locally owned ethanol plants account for nearly half of Iowa fuel ethanol plants and production capacity.

Table 2
Contribution of the Renewable Fuels Industry to Iowa: 2016

	GDP (Mil 2017\$)	Jobs (Thou)	Income (Mil 2017\$)
Ethanol Manufacturing			
Direct	\$535.0	2,100	\$286.2
Indirect	\$1,021.1	6,031	\$426.7
Induced	\$301.1	4,069	\$146.9
Subtotal	\$1,857.2	12,200	\$859.8
Biodiesel Manufacturing			
Direct	\$41.3	276	\$52.0
Indirect	\$330.8	2,360	\$184.5
Induced	\$84.6	1,149	\$41.5
Subtotal	\$456.8	3,785	\$278.0
Agriculture			
Direct	\$368.2	6,732	\$156.6
Indirect	\$1,319.8	11,187	\$532.6
Induced	\$282.7	3,819	\$137.8
Subtotal	\$1,970.7	21,738	\$827.0
New Construction	\$228.1	3,162	\$174.2
R&D	\$304.3	3,851	\$209.1
Exports (Total)	\$172.2	2,129	\$84.4
Total			
Direct	\$1,209.4	12,861	\$742.6
Indirect	\$2,981.5	23,215	\$1,300.4
Induced	\$798.3	10,788	\$389.5
2017 Grand Total	\$4,989.2	46,864	\$2,432.5
Change from 2016	5.6%	10.5%	5.6%

The remainder of the spending by the ethanol industry is for a wide range of inputs such as industrial chemicals, electricity, natural gas, water, labor, transportation and services such as maintenance, insurance, and general overhead. Spending for these goods and services represents the purchase of output of other industries, mostly in Iowa.

Most ethanol produced in Iowa is by dry mills that also produce valuable co-products in the form of distillers dried grains (DDGS) and (industrial) distillers corn oil.⁷ The Iowa ethanol industry produced an estimated 13.5 million short tons of DDGS and 945 million pounds of industrial corn distillers oil in 2017 with an aggregate market value of \$1.7 billion. A significant share of these co-products is used by Iowa livestock producers and the Iowa biodiesel industry. It is notable that these co-products are produced with little additional expenditure.

The price assumptions used in estimating the value of expenditures for both ethanol and biodiesel are shown in Appendix Table 1.

- The gross value of the ethanol industry output (ethanol and co-products) amounts to \$7.8 billion. Based on the IMPLAN model, the ethanol and supporting agriculture industries accounts for \$4.5 billion of Iowa GDP.
- Jobs are created from the economic activity supported by ethanol production. While ethanol production is not a labor-intensive industry, accounting for about 2,100 full time equivalent direct jobs in Iowa⁸, the economic activity resulting from the full activities of the ethanol industry supports a much larger number of jobs in the economy. The direct jobs supported by the ethanol industry are concentrated primarily in manufacturing and agriculture. When the indirect and induced effects of ethanol manufacturing and associated R&D are considered, the industry accounts for nearly 16,000 full time equivalent jobs throughout the entire economy.

⁷ DDGS and refiners corn oil production is reported monthly in the USDA Grain Crushings and Co-Products Production report. <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1899>. According to the Iowa Renewable Fuels Association dry mills account for 85 percent of production capacity.

⁸ The Census Bureau does not report employment in ethanol production. The number of direct jobs associated with ethanol production is based on a conservative estimated industry average of 50 jobs per plant.

- Since renewable fuels production uses feedstocks produced by Iowa farmers, the ethanol and biodiesel industries have the largest impact on agriculture, supporting 6,732 direct farm and farm-related jobs. Most of the agriculture jobs supported by the ethanol industry are farm workers and laborers associated with grain production. However, a wide range of jobs in support activities related to crop production ranging from farm managers and bookkeepers to farm equipment operators are supported by ethanol production. As the impact of the direct spending by the ethanol and biodiesel industry expands throughout the economy, the employment impact expands significantly and is spread over a large number of sectors. The indirect and induced jobs supported by the agriculture output used by renewable fuels amount to an additional 14,900 jobs throughout the entire Iowa economy for a total impact from agriculture of 21,738 jobs.
- Increased economic activity and new jobs result in higher levels of income for Iowa households. The ethanol and supporting agriculture industry generated \$2.4 billion of income for Iowans in 2017.

Biodiesel

The Iowa biodiesel industry also makes sizable contributions to the Iowa economy. According to the Iowa Renewable Fuels Association (IRFA), Iowa's ten operating biodiesel produced 286 million gallons of biodiesel in 2017, 3.7 percent less than in 2016.⁹ The reduction in output reflects a combination of factors including the expired federal tax credit for biodiesel blenders, only minor increases in the RFS RVO for 2017, higher feedstock costs, and pressure from illegal biodiesel imports. Early in 2017 the biofuels industry alleged that "... significant increases in subsidized and dumped biodiesel imports from Argentina and Indonesia have injured U.S. producers, including by taking market share away from U.S. manufacturers and suffocating U.S. investment activity."¹⁰ The U.S. International Trade Commission reached a preliminary decision confirming injury and imposed countervailing duties ranging from 40 percent to 68 percent.¹¹

⁹ http://www.iowarfa.org/biodiesel_refineries.php

¹⁰ "US biodiesel fair trade coalition files new claim in imports case". Biodiesel Magazine, July 10, 2017

¹¹ "US slaps Argentine, Indonesian biodiesel producers with huge anti-dumping penalties." Biodiesel Digest. August 23, 2017.

The Iowa biodiesel industry spent nearly \$855 million on raw materials, other inputs, goods and services in 2017. The largest share of this spending is for fats and oils used as the raw material to make biodiesel. The Iowa biodiesel industry used nearly 1.6 billion pounds of soybean oil in 2017 to produce biodiesel totaling two thirds of total feedstock use. In addition, Iowa biodiesel producers used approximately 238 million pounds of animal fats, 216 million pounds of distillers corn oil (supplied largely by Iowa ethanol producers), and 115 million pounds of other oil feedstocks. The majority of the raw material for biodiesel production in Iowa is procured locally. The remainder of the spending by the biodiesel industry is for a wide range of inputs such as industrial chemicals, electricity, natural gas, water, labor, and services such as maintenance, insurance, and general overhead. As with ethanol, spending for these goods and services represents the purchase of output of other industries.

The spending associated with biodiesel production also circulates throughout the entire Iowa economy stimulating aggregate demand, supporting jobs, generating additional household income, and creating new tax revenue. The following summarizes the economic contribution of the Iowa biodiesel industry at the end of 2017.

- The gross value of the biodiesel and glycerin produced in Iowa totaled nearly \$915 million. When the impact of manufacturing and R&D are combined the biodiesel industry accounts for nearly \$460 million of Iowa GDP.
- Jobs are created as a consequence of increased economic activity caused by biodiesel production. The increase in economic activity generated by biodiesel production supports nearly 3,800 full time equivalent jobs in all sectors of the Iowa economy.
- Increased economic activity and jobs result in higher levels of income for Iowa households. The biodiesel industry accounts for about \$278 million of household income for Iowans.

Conclusion

The renewable fuels industry continues to make a significant contribution to the Iowa economy in terms of job creation, household earnings, and displacement of imported crude oil and petroleum products. The importance of the biofuels industry to agriculture and rural economies is particularly notable. Continued

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growth and expansion of the renewable fuels industry through new technologies and feedstocks will enhance the industry's position as the original creator of green jobs and will enable America to make further strides toward energy independence.

APPENDIX A

IMPLAN Methodology

We estimate the impact of the ethanol industry on the economy of Iowa by applying expenditures by the relevant supplying industry to the appropriate final demand multipliers for value added output, earnings, and employment.

To understand how the economy is affected by an industry such as renewable fuels production, it is necessary to understand how different sectors or industries in the economy are linked. For example, in the renewable fuels production sector, the ethanol industry buys corn from the agriculture sector; which in turn, buys inputs from other suppliers such as fertilizer and pesticide producers that also purchase products from a range of other industries. These are referred to as backward linkages. Use by other sectors of natural gas as an input, such as manufacturing operations, is a forward linkage. Natural gas production and transmission industries are linked through both forward and backward linkages to other economic sectors in each state's economy.

The household sector is linked to all sectors as it provides the labor and management resources. In turn, changes that affect incomes of the household sector typically have significant impacts compared to a change in the sales of other sectors. This is because households typically spend most of their income on both retail and service goods and this is a critical component of the economy

This study uses an economic model known as IMPLAN (Impact Analysis for Planning) to develop a model of the national economy, including sectors that support the ethanol industry, the links between them, and the level of national economic activity. IMPLAN is a commonly used economic input-output (I-O) model. I-O models are constructed based on the concept that all industries in an economy are linked together; and the output (i.e., sales) of one industry becomes the input of another industry until all final goods and services are produced. I-O models can be used both to analyze the structure of the economy and to estimate the total economic impact of projects or policies. For this analysis, a model for the Iowa economy was constructed using current IMPLAN software and the most recent data available.

IMPLAN models provide three economic measures that describe the economy: value added, income, and employment.

- Value added is the total value of the goods and services produced by businesses in the country and is generally referred to as GDP. It is equivalent to the sum of labor income, taxes paid by the industry, and other property income or profit.
- Labor income is the sum of employee compensation (including all payroll and benefits) and proprietor income (income for self-employed work). In the case of this analysis, demand for corn and other feedstock to produce ethanol supports farm income through higher crop receipts than would be the case without ethanol and biodiesel production.
- Employment represents the annual average number of employees, whether full or part-time, of businesses producing output. Value added including labor income and employment represent the net economic benefits that accrue to the nation as a result of increased economic output.

There are three types of effects measured with a multiplier: direct, indirect, and induced effects. Direct effects are the known or predicted changes in the economy. Indirect effects are the business-to-business transactions required to produce direct effects (i.e., increased output from businesses providing intermediate inputs). Finally, induced effects are derived from spending on goods and services by people working to satisfy direct and indirect effects (i.e., increased household spending resulting from higher personal income).

APPENDIX TABLE 1: PRICES

	IA Corn Farm Price 2017 (\$/bu)	IA Corn No 2. Yel 2017 (\$/bu)	Distillers Grains 10%, Iowa 2017 (\$/ton)	Ethanol FOB Iowa 2017 (\$/gal)
Jan	\$3.34	\$3.29	\$97.10	\$1.43
Feb	\$3.39	\$3.33	\$97.50	\$1.44
Mar	\$3.43	\$3.30	\$95.00	\$1.39
Apr	\$3.34	\$3.29	\$94.25	\$1.49
May	\$3.39	\$3.32	\$94.00	\$1.42
Jun	\$3.35	\$3.32	\$103.88	\$1.48
Jul	\$3.40	\$3.32	\$101.38	\$1.47
Aug	\$3.19	\$3.12	\$109.00	\$1.49
Sep	\$3.21	\$3.08	\$103.75	\$1.51
Oct	\$3.23	\$3.05	\$110.10	\$1.42
Nov	\$3.14	\$3.04	\$116.25	\$1.39
Dec	\$3.20	\$3.12	\$126.38	\$1.36
Average	\$3.30	\$3.22	\$104.05	\$1.44

APPENDIX TABLE 1: PRICES (Continued)

	Crude Soy Oil Iowa 2017 (cents/lb.)	Distillers Corn Oil Iowa 2017 (cents/lb.)	Choice W. Grease Central US 2017 (cents/lb.)	Yellow Grease MN 2017 (cents/lb.)	B101 FOB Plant Iowa 2017 (\$/gal)
Jan	34.450	25.464	29.50	23.28	\$3.15
Feb	32.750	26.325		23.53	\$3.06
Mar	31.680	27.130		24.00	\$3.08
Apr	29.965	26.575		24.69	\$3.07
May	31.410	28.386		25.93	\$3.21
Jun	31.770	29.068	34.50	27.72	\$3.14
Jul	33.055	27.071		27.79	\$3.24
Aug	33.330	27.217		28.05	\$3.25
Sep	33.955	27.850	35.33	28.16	\$3.26
Oct	32.935	25.023	36.00	25.00	\$3.18
Nov	33.690	24.190	38.67	23.63	\$3.23
Dec	32.570	20.875	37.14	19.17	\$3.15
Average	32.630	26.265	35.19	25.08	\$3.17

Updated 1/28/18

Sources

1. USDA/NASS Agricultural Prices
2. USDA/ERS Feed Grains Database
3. USDA/AMS Market News
4. USDA/AMS Livestock, Poultry & Grain Market News. USDA Daily Ethanol Report
5. EIA Natural Gas Prices. http://www.eia.gov/dnav/ng/ng_pri_sum_dcu_SMN_m.htm