

# Baseline Update for U.S. Agricultural Markets

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## Summary

After several years of declining prices for many agricultural commodities, the outlook now is more nuanced. Large global supplies continue to weigh on markets for several major crops, but strong demand has provided support to U.S. livestock sector prices. This report provides an update of the 2017 FAPRI-MU long-term baseline to reflect information available in mid-August 2017.

The baseline update uses 2017 acreage, yield and production estimates included in USDA's August 2017 *Crop Production* report. It assumes that current agricultural and biofuel policies will continue, including recently announced Brazilian tariffs on U.S. ethanol and U.S. duties on biodiesel imports. The global economy is assumed to grow at a modest pace, as forecast by IHS Markit in July 2017.

Given all of the assumptions of the analysis, here are a few highlights of the results:

- Reduced U.S. production results in a small increase in corn prices, to \$3.48 per bushel for the 2017/18 marketing year. Continued large world grain production and stocks limit the price recovery. Projected prices remain below \$3.80 per bushel through 2022/23.
- The projected record 2017 U.S. soybean crop puts further downward pressure on soybean prices. Projected prices drop to \$9.07 per bushel for the 2017/18 marketing year. The result is lower expected soybean acreage in 2018, which allows a modest increase in prices.
- The smaller 2017 U.S. wheat crop contributes to higher wheat prices, but global supplies remain large and projected prices remain below \$5.00 per bushel for the next three marketing years.
- In early August, USDA projected an upland cotton crop of almost 20 million bales, the largest U.S. crop since 2006. Large supplies push projected prices for the 2017/18 marketing year down to 60 cents per pound. Potential effects of Hurricane Harvey are not included in these estimates.
- New Brazilian ethanol tariffs limit future growth in U.S. ethanol exports, while duties on biodiesel imports increase projected U.S. biodiesel production.
- Strong domestic and international demand has resulted in steady or increasing 2017 prices for cattle, hogs, chickens and milk, in spite of significant increases in U.S. production.
- In 2018, another year of large increases in meat and milk production is expected to result in lower producer prices for most livestock products.
- Lower retail prices for meat and dairy products helped reduce consumer food price inflation to 0.3 percent in 2016. Projected consumer food prices increase 1.0 percent in 2017. From 2018-2022, food price inflation is similar to the general rate of inflation, between 2 and 3 percent per year.

This baseline update provides a snapshot of what agricultural markets might look like under a particular set of assumptions. As more is learned about the size of the 2017 crop, the implementation of policies and the outlook for the general economy, these projections will need to be updated.

For more detail on the livestock, poultry and dairy sectors and on consumer food prices, see a companion report by the MU Agricultural Markets and Policy team, at <http://amap.missouri.edu/>.

## Macroeconomic assumptions\*

| Calendar year              | 2015  | 2016  | 2017  | 2018                  | 2019  | 2020  | 2021  | 2022  |
|----------------------------|-------|-------|-------|-----------------------|-------|-------|-------|-------|
| <b>Real GDP growth</b>     |       |       |       | (Percent)             |       |       |       |       |
| United States              | 2.6   | 1.6   | 2.3   | 2.7                   | 2.3   | 2.1   | 2.3   | 2.1   |
| China                      | 6.9   | 6.7   | 6.6   | 6.3                   | 6.1   | 6.0   | 6.0   | 6.0   |
| World                      | 2.8   | 2.5   | 3.0   | 3.2                   | 3.1   | 3.1   | 3.2   | 3.2   |
| <b>U.S. CPI inflation</b>  | 0.1   | 1.3   | 2.0   | 1.6                   | 2.2   | 2.8   | 2.7   | 2.6   |
| <b>U.S. interest rates</b> |       |       |       |                       |       |       |       |       |
| Federal funds rate         | 0.1   | 0.4   | 1.0   | 1.7                   | 2.6   | 3.0   | 3.0   | 3.0   |
| Prime rate                 | 3.3   | 3.5   | 4.1   | 4.7                   | 5.7   | 6.0   | 6.0   | 6.0   |
| <b>Exchange rates</b>      |       |       |       | (Currency per dollar) |       |       |       |       |
| Canadian dollar            | 1.28  | 1.33  | 1.31  | 1.30                  | 1.25  | 1.21  | 1.18  | 1.16  |
| Chinese yuan               | 6.28  | 6.64  | 6.88  | 7.11                  | 7.40  | 7.41  | 7.28  | 7.10  |
| Euro                       | 0.90  | 0.90  | 0.91  | 0.91                  | 0.87  | 0.83  | 0.80  | 0.78  |
| Mexican peso               | 15.87 | 18.69 | 19.10 | 18.65                 | 17.70 | 17.77 | 18.30 | 19.54 |

\*Source: IHS Markit forecast, July 2017

## Policy assumptions

| Year                             | 2015 | 2016 | 2017 | 2018                                  | 2019 | 2020 | 2021 | 2022 |
|----------------------------------|------|------|------|---------------------------------------|------|------|------|------|
| <b>Reference prices</b>          |      |      |      | (Dollars per bushel)                  |      |      |      |      |
| Corn                             | 3.70 | 3.70 | 3.70 | 3.70                                  | 3.70 | 3.70 | 3.70 | 3.70 |
| Soybeans                         | 8.40 | 8.40 | 8.40 | 8.40                                  | 8.40 | 8.40 | 8.40 | 8.40 |
| Wheat                            | 5.50 | 5.50 | 5.50 | 5.50                                  | 5.50 | 5.50 | 5.50 | 5.50 |
| <b>Conservation reserve area</b> |      |      |      | (Million acres)                       |      |      |      |      |
|                                  | 24.2 | 23.9 | 23.5 | 23.0                                  | 23.0 | 23.0 | 23.0 | 23.0 |
| <b>Biodiesel tax credit</b>      |      |      |      | (Dollars per gallon)                  |      |      |      |      |
|                                  | 1.00 | 1.00 | 0.00 | 0.00                                  | 0.00 | 0.00 | 0.00 | 0.00 |
| <b>Renewable fuel standard</b>   |      |      |      | (Billion gallons, ethanol equivalent) |      |      |      |      |
| Overall                          | 17.2 | 18.3 | 19.3 | 19.3                                  | 19.5 | 19.6 | 19.7 | 19.9 |
| Advanced biofuels                | 2.9  | 3.6  | 4.3  | 4.3                                   | 4.5  | 4.6  | 4.7  | 4.9  |
| Biomass-based diesel             | 2.7  | 2.9  | 3.1  | 3.2                                   | 3.3  | 3.3  | 3.3  | 3.4  |
| Conventional biofuel "gap"       | 14.2 | 14.6 | 15.0 | 15.0                                  | 15.0 | 15.0 | 15.0 | 15.0 |

## U.S. corn supply and use

| September-August year             | 15/16                        | 16/17  | 17/18  | 18/19  | 19/20  | 20/21  | 21/22  | 22/23  |
|-----------------------------------|------------------------------|--------|--------|--------|--------|--------|--------|--------|
| <b>Area</b>                       | (Million acres)              |        |        |        |        |        |        |        |
| Planted area                      | 88.0                         | 94.0   | 90.9   | 93.2   | 91.3   | 92.0   | 91.7   | 91.6   |
| Harvested area                    | 80.8                         | 86.7   | 83.5   | 85.6   | 83.8   | 84.5   | 84.2   | 84.1   |
| <b>Yield</b>                      | (Bushels per harvested acre) |        |        |        |        |        |        |        |
|                                   | 168.4                        | 174.6  | 169.5  | 171.1  | 173.1  | 175.1  | 176.8  | 178.4  |
| <b>Supply</b>                     | (Million bushels)            |        |        |        |        |        |        |        |
| Beginning stocks                  | 15,401                       | 16,940 | 16,573 | 16,853 | 16,709 | 16,881 | 17,001 | 17,154 |
| Production                        | 1,731                        | 1,737  | 2,370  | 2,153  | 2,154  | 2,036  | 2,070  | 2,103  |
| Imports                           | 13,602                       | 15,148 | 14,153 | 14,650 | 14,505 | 14,796 | 14,880 | 15,001 |
|                                   | 68                           | 55     | 50     | 50     | 50     | 50     | 50     | 50     |
| <b>Domestic use</b>               | 11,763                       | 12,345 | 12,532 | 12,604 | 12,486 | 12,538 | 12,557 | 12,594 |
| Feed and residual                 | 5,113                        | 5,425  | 5,484  | 5,605  | 5,511  | 5,571  | 5,602  | 5,636  |
| Ethanol and coproducts            | 5,224                        | 5,450  | 5,564  | 5,501  | 5,463  | 5,438  | 5,410  | 5,398  |
| HFCS                              | 472                          | 480    | 486    | 491    | 495    | 498    | 501    | 502    |
| Seed                              | 31                           | 30     | 30     | 30     | 30     | 30     | 30     | 30     |
| Food and other                    | 924                          | 960    | 968    | 977    | 987    | 1,001  | 1,015  | 1,028  |
| <b>Exports</b>                    | 1,901                        | 2,225  | 1,889  | 2,096  | 2,187  | 2,273  | 2,342  | 2,425  |
| <b>Total use</b>                  | 13,664                       | 14,570 | 14,420 | 14,700 | 14,673 | 14,811 | 14,898 | 15,019 |
| <b>Ending stocks</b>              | 1,737                        | 2,370  | 2,153  | 2,154  | 2,036  | 2,070  | 2,103  | 2,135  |
| Under loan                        | 112                          | 200    | 147    | 134    | 116    | 120    | 125    | 128    |
| Other stocks                      | 1,626                        | 2,170  | 2,006  | 2,019  | 1,919  | 1,950  | 1,978  | 2,007  |
| <b>Prices, program provisions</b> | (Dollars per bushel)         |        |        |        |        |        |        |        |
| Farm price                        | 3.61                         | 3.35   | 3.48   | 3.64   | 3.80   | 3.79   | 3.75   | 3.72   |
| Loan rate                         | 1.95                         | 1.95   | 1.95   | 1.95   | 1.95   | 1.95   | 1.95   | 1.95   |
| Reference price                   | 3.70                         | 3.70   | 3.70   | 3.70   | 3.70   | 3.70   | 3.70   | 3.70   |
| <b>Market returns</b>             | (Dollars)                    |        |        |        |        |        |        |        |
| Gross market revenue/a.           | 608.07                       | 584.98 | 590.63 | 622.43 | 657.96 | 662.75 | 662.57 | 663.97 |
| Variable expenses/a.              | 337.08                       | 312.69 | 304.43 | 305.36 | 309.41 | 318.04 | 325.73 | 332.71 |
| Market net return/a.              | 270.99                       | 272.29 | 286.20 | 317.07 | 348.56 | 344.72 | 336.84 | 331.25 |

## U.S. soybean supply and use

| September-August year             | 15/16  | 16/17  | 17/18  | 18/19                        | 19/20  | 20/21  | 21/22  | 22/23  |
|-----------------------------------|--------|--------|--------|------------------------------|--------|--------|--------|--------|
| <b>Area</b>                       |        |        |        | (Million acres)              |        |        |        |        |
| Planted area                      | 82.7   | 83.4   | 89.5   | 86.0                         | 87.7   | 87.1   | 87.2   | 87.0   |
| Harvested area                    | 81.7   | 82.7   | 88.7   | 85.2                         | 86.8   | 86.3   | 86.4   | 86.2   |
| <b>Yield</b>                      |        |        |        | (Bushels per harvested acre) |        |        |        |        |
|                                   | 48.0   | 52.1   | 49.4   | 47.9                         | 48.4   | 48.9   | 49.3   | 49.8   |
| <b>Supply</b>                     |        |        |        | (Million bushels)            |        |        |        |        |
| Beginning stocks                  | 4,140  | 4,528  | 4,776  | 4,566                        | 4,585  | 4,574  | 4,603  | 4,636  |
| Production                        | 191    | 197    | 370    | 463                          | 353    | 329    | 316    | 320    |
| Imports                           | 3,926  | 4,307  | 4,381  | 4,078                        | 4,206  | 4,220  | 4,262  | 4,291  |
|                                   | 24     | 25     | 25     | 25                           | 25     | 25     | 25     | 25     |
| <b>Domestic use</b>               | 2,002  | 2,008  | 2,095  | 2,083                        | 2,093  | 2,098  | 2,113  | 2,124  |
| Crush                             | 1,886  | 1,890  | 1,958  | 1,952                        | 1,959  | 1,964  | 1,976  | 1,986  |
| Seed and residual                 | 115    | 118    | 137    | 131                          | 134    | 135    | 137    | 138    |
| <b>Exports</b>                    | 1,942  | 2,150  | 2,218  | 2,130                        | 2,163  | 2,159  | 2,170  | 2,189  |
| <b>Total use</b>                  | 3,944  | 4,158  | 4,313  | 4,213                        | 4,256  | 4,257  | 4,283  | 4,313  |
| <b>Ending stocks</b>              | 197    | 370    | 463    | 353                          | 329    | 316    | 320    | 323    |
| Under loan                        | 7      | 15     | 13     | 10                           | 11     | 11     | 12     | 13     |
| Other stocks                      | 190    | 355    | 450    | 344                          | 318    | 306    | 309    | 310    |
| <b>Prices, program provisions</b> |        |        |        | (Dollars per bushel)         |        |        |        |        |
| Farm price                        | 8.95   | 9.50   | 9.07   | 9.82                         | 9.76   | 9.85   | 9.71   | 9.60   |
| Illinois processor price          | 9.54   | 9.80   | 9.52   | 10.25                        | 10.19  | 10.28  | 10.14  | 10.04  |
| Loan rate                         | 5.00   | 5.00   | 5.00   | 5.00                         | 5.00   | 5.00   | 5.00   | 5.00   |
| Reference price                   | 8.40   | 8.40   | 8.40   | 8.40                         | 8.40   | 8.40   | 8.40   | 8.40   |
| <b>Market returns</b>             |        |        |        | (Dollars)                    |        |        |        |        |
| Gross market revenue/a.           | 429.95 | 494.51 | 447.61 | 470.09                       | 472.92 | 481.81 | 479.21 | 477.78 |
| Variable expenses/a.              | 175.30 | 163.06 | 163.26 | 162.63                       | 165.82 | 171.02 | 175.75 | 179.91 |
| Market net return/a.              | 254.65 | 331.45 | 284.35 | 307.45                       | 307.10 | 310.80 | 303.46 | 297.87 |
| <b>Other indicators</b>           |        |        |        |                              |        |        |        |        |
| Soybean/corn price ratio          | 2.48   | 2.84   | 2.60   | 2.70                         | 2.57   | 2.60   | 2.59   | 2.58   |
| 48% soymeal price, \$/ton         | 324.56 | 320.00 | 314.28 | 332.30                       | 328.18 | 326.10 | 322.64 | 320.06 |
| Soybean oil price, cents/lb.      | 29.86  | 32.50  | 32.21  | 34.96                        | 35.56  | 36.78  | 36.66  | 36.01  |
| Crushing margin, \$/bu.           | 1.62   | 1.48   | 1.66   | 1.67                         | 1.70   | 1.70   | 1.74   | 1.71   |

## U.S. wheat supply and use

| June-May year                     | 15/16                        | 16/17  | 17/18  | 18/19  | 19/20  | 20/21  | 21/22  | 22/23  |
|-----------------------------------|------------------------------|--------|--------|--------|--------|--------|--------|--------|
| <b>Area</b>                       | (Million acres)              |        |        |        |        |        |        |        |
| Planted area                      | 55.0                         | 50.2   | 45.7   | 47.5   | 48.2   | 47.9   | 48.0   | 48.0   |
| Harvested area                    | 47.3                         | 43.9   | 38.1   | 40.2   | 40.6   | 40.4   | 40.5   | 40.6   |
| <b>Yield</b>                      | (Bushels per harvested acre) |        |        |        |        |        |        |        |
|                                   | 43.6                         | 52.6   | 45.6   | 47.1   | 47.5   | 48.0   | 48.3   | 48.7   |
| <b>Supply</b>                     | (Million bushels)            |        |        |        |        |        |        |        |
| Beginning stocks                  | 2,927                        | 3,403  | 3,073  | 2,970  | 2,947  | 2,925  | 2,917  | 2,924  |
| Production                        | 752                          | 976    | 1,184  | 939    | 876    | 845    | 816    | 807    |
| Imports                           | 2,062                        | 2,310  | 1,739  | 1,890  | 1,931  | 1,938  | 1,959  | 1,975  |
|                                   | 113                          | 118    | 149    | 140    | 140    | 142    | 143    | 143    |
| <b>Domestic use</b>               | 1,174                        | 1,164  | 1,156  | 1,160  | 1,181  | 1,179  | 1,181  | 1,187  |
| Feed and residual                 | 149                          | 154    | 142    | 139    | 154    | 146    | 141    | 140    |
| Seed                              | 67                           | 61     | 65     | 66     | 66     | 66     | 67     | 67     |
| Food and other                    | 957                          | 949    | 949    | 954    | 961    | 967    | 973    | 980    |
| <b>Exports</b>                    | 778                          | 1,055  | 977    | 935    | 922    | 929    | 929    | 933    |
| <b>Total use</b>                  | 1,951                        | 2,219  | 2,133  | 2,094  | 2,103  | 2,109  | 2,110  | 2,120  |
| <b>Ending stocks</b>              | 976                          | 1,184  | 939    | 876    | 845    | 816    | 807    | 805    |
| Under loan                        | 46                           | 34     | 26     | 26     | 26     | 25     | 24     | 24     |
| Other stocks                      | 930                          | 1,150  | 913    | 849    | 818    | 791    | 783    | 780    |
| <b>Prices, program provisions</b> | (Dollars per bushel)         |        |        |        |        |        |        |        |
| Farm price                        | 4.89                         | 3.89   | 4.79   | 4.95   | 4.99   | 5.12   | 5.16   | 5.16   |
| Loan rate                         | 2.94                         | 2.94   | 2.94   | 2.94   | 2.94   | 2.94   | 2.94   | 2.94   |
| Reference price                   | 5.50                         | 5.50   | 5.50   | 5.50   | 5.50   | 5.50   | 5.50   | 5.50   |
| <b>Market returns</b>             | (Dollars)                    |        |        |        |        |        |        |        |
| Gross market revenue/a.           | 213.09                       | 204.71 | 218.71 | 233.14 | 237.14 | 245.33 | 249.33 | 251.06 |
| Variable expenses/a.              | 117.58                       | 110.70 | 106.78 | 109.56 | 111.65 | 115.74 | 119.79 | 123.29 |
| Market net return/a.              | 95.51                        | 94.01  | 111.93 | 123.58 | 125.48 | 129.59 | 129.54 | 127.78 |



## U.S. upland cotton supply and use

| August-July year                  | 15/16  | 16/17  | 17/18  | 18/19                       | 19/20  | 20/21  | 21/22  | 22/23  |
|-----------------------------------|--------|--------|--------|-----------------------------|--------|--------|--------|--------|
| <b>Area</b>                       |        |        |        |                             |        |        |        |        |
|                                   |        |        |        | (Million acres)             |        |        |        |        |
| Planted area                      | 8.42   | 9.88   | 11.80  | 10.88                       | 10.71  | 10.54  | 10.41  | 10.37  |
| Harvested area                    | 7.92   | 9.32   | 10.81  | 9.32                        | 9.17   | 9.03   | 8.91   | 8.88   |
|                                   |        |        |        | (Pounds per harvested acre) |        |        |        |        |
| <b>Yield</b>                      | 755    | 855    | 878    | 840                         | 850    | 859    | 866    | 874    |
|                                   |        |        |        | (Million bales)             |        |        |        |        |
| <b>Supply</b>                     | 15.88  | 20.27  | 22.52  | 21.98                       | 21.75  | 21.65  | 21.64  | 21.75  |
| Beginning stocks                  | 3.39   | 3.66   | 2.74   | 5.67                        | 5.50   | 5.49   | 5.55   | 5.57   |
| Production                        | 12.46  | 16.60  | 19.78  | 16.31                       | 16.25  | 16.15  | 16.08  | 16.18  |
| Imports                           | 0.03   | 0.01   | 0.01   | 0.01                        | 0.01   | 0.01   | 0.01   | 0.01   |
| <b>Domestic use</b>               |        |        |        |                             |        |        |        |        |
| Mill use                          | 3.43   | 3.22   | 3.31   | 3.36                        | 3.39   | 3.43   | 3.45   | 3.47   |
| <b>Exports</b>                    | 8.62   | 14.30  | 13.53  | 13.13                       | 12.87  | 12.67  | 12.62  | 12.73  |
| <b>Total use</b>                  | 12.04  | 17.52  | 16.85  | 16.48                       | 16.26  | 16.09  | 16.07  | 16.20  |
| <b>Unaccounted</b>                | 0.17   | 0.01   | 0.00   | 0.00                        | 0.00   | 0.00   | 0.00   | 0.00   |
| <b>Ending stocks</b>              | 3.66   | 2.74   | 5.67   | 5.50                        | 5.49   | 5.55   | 5.57   | 5.56   |
| <b>Prices, program provisions</b> |        |        |        | (Cents per pound)           |        |        |        |        |
| Farm price                        | 61.2   | 68.0   | 59.9   | 62.3                        | 62.8   | 62.5   | 62.7   | 63.6   |
| Adjusted world price              | 49.1   | 63.9   | 57.8   | 60.2                        | 60.7   | 60.3   | 60.5   | 61.7   |
| Loan rate                         | 52.0   | 52.0   | 49.4   | 52.0                        | 52.0   | 52.0   | 52.0   | 52.0   |
| User payment                      | 3.0    | 3.0    | 3.0    | 3.0                         | 3.0    | 3.0    | 3.0    | 3.0    |
| <b>Market returns</b>             |        |        |        | (Dollars)                   |        |        |        |        |
| Gross market revenue/a.           | 577.85 | 693.73 | 641.01 | 653.91                      | 670.18 | 674.92 | 682.19 | 695.64 |
| Variable expenses/a.              | 452.06 | 439.02 | 446.08 | 446.75                      | 456.48 | 474.59 | 491.45 | 508.51 |
| Market net return/a.              | 125.79 | 254.71 | 194.92 | 207.16                      | 213.69 | 200.33 | 190.75 | 187.13 |

## U.S. rice supply and use

| August-July year                  | 15/16                       | 16/17  | 17/18  | 18/19  | 19/20  | 20/21   | 21/22   | 22/23   |
|-----------------------------------|-----------------------------|--------|--------|--------|--------|---------|---------|---------|
| <b>Area</b>                       | (Million acres)             |        |        |        |        |         |         |         |
| Planted area                      | 2.63                        | 3.15   | 2.56   | 2.83   | 2.74   | 2.75    | 2.78    | 2.80    |
| Harvested area                    | 2.59                        | 3.10   | 2.48   | 2.77   | 2.69   | 2.69    | 2.72    | 2.74    |
| <b>Yield</b>                      | (Pounds per harvested acre) |        |        |        |        |         |         |         |
|                                   | 7,472                       | 7,237  | 7,512  | 7,768  | 7,822  | 7,882   | 7,949   | 8,017   |
| <b>Supply</b>                     | (Million hundredweight)     |        |        |        |        |         |         |         |
| Beginning stocks                  | 265.8                       | 293.9  | 256.8  | 270.0  | 268.1  | 269.7   | 273.9   | 278.3   |
| Production                        | 48.5                        | 46.5   | 45.9   | 30.4   | 33.3   | 32.2    | 32.0    | 32.8    |
| Imports                           | 193.1                       | 224.1  | 186.5  | 215.1  | 210.0  | 212.4   | 216.6   | 220.0   |
|                                   | 24.1                        | 23.3   | 24.5   | 24.5   | 24.8   | 25.1    | 25.3    | 25.5    |
| <b>Domestic use</b>               | 112.4                       | 132.0  | 117.0  | 118.8  | 119.5  | 119.8   | 120.4   | 121.1   |
| <b>Exports</b>                    | 107.0                       | 116.0  | 109.5  | 117.9  | 116.4  | 117.9   | 120.6   | 123.5   |
| <b>Total use</b>                  | 219.3                       | 248.0  | 226.5  | 236.7  | 235.9  | 237.7   | 241.1   | 244.6   |
| <b>Ending stocks</b>              | 46.5                        | 45.9   | 30.4   | 33.3   | 32.2   | 32.0    | 32.8    | 33.7    |
| <b>Prices, program provisions</b> | (Dollars per hundredweight) |        |        |        |        |         |         |         |
| Farm price                        | 12.20                       | 10.30  | 12.74  | 12.05  | 12.33  | 12.76   | 12.96   | 13.18   |
| Long grain                        | 11.20                       | 9.60   | 12.05  | 11.35  | 11.67  | 12.25   | 12.54   | 12.84   |
| Japonica                          | 18.10                       | 13.50  | 16.22  | 15.94  | 16.10  | 16.08   | 16.05   | 16.03   |
| Other medium, short grain         | 11.20                       | 10.10  | 12.41  | 11.95  | 12.17  | 12.46   | 12.59   | 12.74   |
| Loan rate                         | 6.50                        | 6.50   | 6.50   | 6.50   | 6.50   | 6.50    | 6.50    | 6.50    |
| Reference price                   |                             |        |        |        |        |         |         |         |
| Long grain                        | 14.00                       | 14.00  | 14.00  | 14.00  | 14.00  | 14.00   | 14.00   | 14.00   |
| Japonica                          | 16.10                       | 16.10  | 16.10  | 16.10  | 16.10  | 16.10   | 16.10   | 16.10   |
| Other medium, short grain         | 14.00                       | 14.00  | 14.00  | 14.00  | 14.00  | 14.00   | 14.00   | 14.00   |
| <b>Market returns</b>             | (Dollars)                   |        |        |        |        |         |         |         |
| Gross market revenue/a.           | 911.57                      | 745.46 | 957.09 | 936.24 | 964.61 | 1005.42 | 1029.83 | 1056.53 |
| Variable expenses/a.              | 571.67                      | 546.85 | 550.67 | 555.36 | 569.38 | 596.97  | 619.59  | 641.11  |
| Market net return/a.              | 339.90                      | 198.61 | 406.42 | 380.88 | 395.22 | 408.45  | 410.24  | 415.42  |

## Other U.S. feed grains supply and use

| Marketing year  | 15/16                        | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 |
|-----------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| <b>Sorghum</b>  |                              |       |       |       |       |       |       |       |
|                 | (Million acres)              |       |       |       |       |       |       |       |
| Planted area    | 8.46                         | 6.69  | 5.99  | 6.50  | 6.55  | 6.53  | 6.51  | 6.52  |
| Harvested area  | 7.85                         | 6.16  | 5.31  | 5.92  | 5.97  | 5.95  | 5.93  | 5.94  |
|                 | (Bushels per harvested acre) |       |       |       |       |       |       |       |
| Yield           | 76.0                         | 77.9  | 69.6  | 67.8  | 68.2  | 68.6  | 68.7  | 68.8  |
|                 | (Million bushels)            |       |       |       |       |       |       |       |
| Production      | 597                          | 480   | 369   | 401   | 407   | 408   | 408   | 409   |
| Imports         | 5                            | 1     | 1     | 1     | 1     | 1     | 1     | 1     |
| Domestic use    | 244                          | 240   | 166   | 186   | 191   | 188   | 182   | 177   |
| Exports         | 340                          | 225   | 216   | 218   | 217   | 219   | 225   | 231   |
| Ending stocks   | 37                           | 53    | 42    | 40    | 40    | 42    | 43    | 44    |
|                 | (Dollars per bushel)         |       |       |       |       |       |       |       |
| Farm price      | 3.31                         | 2.75  | 3.02  | 3.37  | 3.45  | 3.44  | 3.43  | 3.42  |
| Reference price | 3.95                         | 3.95  | 3.95  | 3.95  | 3.95  | 3.95  | 3.95  | 3.95  |
| <b>Barley</b>   |                              |       |       |       |       |       |       |       |
|                 | (Million acres)              |       |       |       |       |       |       |       |
| Planted area    | 3.62                         | 3.05  | 2.38  | 2.56  | 2.55  | 2.45  | 2.36  | 2.31  |
| Harvested area  | 3.16                         | 2.56  | 1.95  | 2.15  | 2.14  | 2.06  | 1.98  | 1.94  |
|                 | (Bushels per harvested acre) |       |       |       |       |       |       |       |
| Yield           | 69.1                         | 77.9  | 72.1  | 75.0  | 75.8  | 76.8  | 78.1  | 79.2  |
|                 | (Million bushels)            |       |       |       |       |       |       |       |
| Production      | 218                          | 199   | 140   | 161   | 162   | 158   | 155   | 153   |
| Imports         | 19                           | 10    | 14    | 28    | 28    | 30    | 31    | 32    |
| Domestic use    | 202                          | 199   | 184   | 184   | 183   | 182   | 180   | 178   |
| Exports         | 11                           | 4     | 6     | 6     | 7     | 6     | 6     | 6     |
| Ending stocks   | 102                          | 108   | 73    | 73    | 73    | 73    | 74    | 74    |
|                 | (Dollars per bushel)         |       |       |       |       |       |       |       |
| Farm price      | 5.52                         | 4.96  | 5.17  | 5.29  | 5.39  | 5.37  | 5.36  | 5.35  |
| Reference price | 4.95                         | 4.95  | 4.95  | 4.95  | 4.95  | 4.95  | 4.95  | 4.95  |
| <b>Oats</b>     |                              |       |       |       |       |       |       |       |
|                 | (Million acres)              |       |       |       |       |       |       |       |
| Planted area    | 3.09                         | 2.83  | 2.54  | 2.73  | 2.73  | 2.73  | 2.75  | 2.77  |
| Harvested area  | 1.28                         | 0.98  | 0.88  | 1.00  | 1.00  | 1.00  | 1.00  | 1.01  |
|                 | (Bushels per harvested acre) |       |       |       |       |       |       |       |
| Yield           | 70.2                         | 66.0  | 61.0  | 65.9  | 66.4  | 67.0  | 67.5  | 68.0  |
|                 | (Million bushels)            |       |       |       |       |       |       |       |
| Production      | 90                           | 65    | 54    | 66    | 66    | 67    | 68    | 69    |
| Imports         | 86                           | 90    | 95    | 95    | 95    | 95    | 94    | 93    |
| Domestic use    | 170                          | 156   | 164   | 160   | 161   | 160   | 159   | 159   |
| Exports         | 2                            | 3     | 2     | 2     | 2     | 2     | 2     | 2     |
| Ending stocks   | 57                           | 52    | 36    | 34    | 33    | 33    | 34    | 34    |
|                 | (Dollars per bushel)         |       |       |       |       |       |       |       |
| Farm price      | 2.12                         | 2.06  | 2.47  | 2.54  | 2.64  | 2.66  | 2.66  | 2.66  |
| Reference price | 2.40                         | 2.40  | 2.40  | 2.40  | 2.40  | 2.40  | 2.40  | 2.40  |

## Other U.S. oilseeds supply and use

| Marketing year       | 15/16                        | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 |
|----------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|
| <b>Peanuts</b>       |                              |       |       |       |       |       |       |       |
|                      | (Million acres)              |       |       |       |       |       |       |       |
| Planted area         | 1.63                         | 1.67  | 1.82  | 1.72  | 1.68  | 1.67  | 1.67  | 1.67  |
| Harvested area       | 1.56                         | 1.55  | 1.77  | 1.65  | 1.61  | 1.60  | 1.61  | 1.61  |
|                      | (Pounds per harvested acre)  |       |       |       |       |       |       |       |
| Yield                | 3,845                        | 3,675 | 4,190 | 4,018 | 4,080 | 4,139 | 4,198 | 4,253 |
|                      | (Million pounds)             |       |       |       |       |       |       |       |
| Production           | 6,001                        | 5,685 | 7,429 | 6,643 | 6,576 | 6,630 | 6,757 | 6,828 |
| Imports              | 94                           | 155   | 75    | 75    | 75    | 75    | 75    | 75    |
| Domestic use         | 4,862                        | 4,705 | 5,090 | 5,094 | 5,129 | 5,170 | 5,225 | 5,271 |
| Exports              | 1,544                        | 1,350 | 1,478 | 1,545 | 1,564 | 1,580 | 1,596 | 1,614 |
| Ending stocks        | 1,791                        | 1,576 | 2,511 | 2,590 | 2,547 | 2,503 | 2,513 | 2,530 |
|                      | (Cents per pound)            |       |       |       |       |       |       |       |
| Farm price           | 19.30                        | 19.50 | 20.08 | 18.50 | 18.66 | 19.19 | 19.32 | 19.28 |
| Reference price      | 26.75                        | 26.75 | 26.75 | 26.75 | 26.75 | 26.75 | 26.75 | 26.75 |
| <b>Sunflowerseed</b> |                              |       |       |       |       |       |       |       |
|                      | (Million acres)              |       |       |       |       |       |       |       |
| Planted area         | 1.86                         | 1.60  | 1.27  | 1.42  | 1.39  | 1.37  | 1.36  | 1.35  |
| Harvested area       | 1.80                         | 1.53  | 1.21  | 1.31  | 1.28  | 1.26  | 1.25  | 1.24  |
|                      | (Pounds per harvested acre)  |       |       |       |       |       |       |       |
| Yield                | 1,625                        | 1,731 | 1,543 | 1,622 | 1,632 | 1,643 | 1,651 | 1,657 |
|                      | (Million pounds)             |       |       |       |       |       |       |       |
| Production           | 2,924                        | 2,655 | 1,873 | 2,125 | 2,090 | 2,067 | 2,064 | 2,056 |
| Imports              | 159                          | 179   | 229   | 229   | 229   | 229   | 229   | 229   |
| Domestic use         | 2,690                        | 2,608 | 2,191 | 2,214 | 2,196 | 2,206 | 2,218 | 2,212 |
| Exports              | 218                          | 196   | 41    | 129   | 120   | 88    | 66    | 65    |
| Ending stocks        | 412                          | 441   | 311   | 321   | 323   | 325   | 334   | 342   |
|                      | (Cents per pound)            |       |       |       |       |       |       |       |
| Farm price           | 19.60                        | 17.30 | 18.01 | 18.97 | 18.88 | 19.03 | 18.85 | 18.68 |
| Reference price      | 20.15                        | 20.15 | 20.15 | 20.15 | 20.15 | 20.15 | 20.15 | 20.15 |
| <b>Canola</b>        |                              |       |       |       |       |       |       |       |
|                      | (Million acres)              |       |       |       |       |       |       |       |
| Planted area         | 1.78                         | 1.71  | 2.16  | 1.96  | 1.94  | 1.93  | 1.92  | 1.91  |
| Harvested area       | 1.71                         | 1.69  | 2.11  | 1.91  | 1.89  | 1.88  | 1.88  | 1.87  |
|                      | (Bushels per harvested acre) |       |       |       |       |       |       |       |
| Yield                | 1,680                        | 1,824 | 1,768 | 1,786 | 1,799 | 1,812 | 1,822 | 1,833 |
|                      | (Million pounds)             |       |       |       |       |       |       |       |
| Production           | 2,878                        | 3,075 | 3,734 | 3,413 | 3,406 | 3,409 | 3,418 | 3,424 |
| Imports              | 791                          | 1,532 | 1,114 | 1,257 | 1,249 | 1,246 | 1,250 | 1,251 |
| Domestic use         | 3,169                        | 4,464 | 4,507 | 4,419 | 4,397 | 4,402 | 4,416 | 4,428 |
| Exports              | 388                          | 262   | 333   | 261   | 254   | 250   | 246   | 242   |
| Ending stocks        | 355                          | 236   | 244   | 234   | 238   | 241   | 245   | 250   |
|                      | (Cents per pound)            |       |       |       |       |       |       |       |
| Farm price           | 15.60                        | 16.70 | 16.48 | 17.78 | 17.65 | 17.82 | 17.64 | 17.45 |
| Reference price      | 20.15                        | 20.15 | 20.15 | 20.15 | 20.15 | 20.15 | 20.15 | 20.15 |

## U.S. hay supply and use

| May-April year | 15/16  | 16/17  | 17/18  | 18/19             | 19/20  | 20/21  | 21/22  | 22/23  |
|----------------|--------|--------|--------|-------------------|--------|--------|--------|--------|
|                |        |        |        | (Million acres)   |        |        |        |        |
| Area harvested | 54.4   | 53.5   | 53.5   | 53.9              | 54.6   | 54.9   | 55.0   | 54.9   |
|                |        |        |        | (Tons per acre)   |        |        |        |        |
| Yield          | 2.47   | 2.52   | 2.48   | 2.39              | 2.40   | 2.41   | 2.42   | 2.43   |
|                |        |        |        | (Million tons)    |        |        |        |        |
| Production     | 134.5  | 134.8  | 132.6  | 129.1             | 131.2  | 132.6  | 133.3  | 133.6  |
| Disappearance  | 133.9  | 135.5  | 134.2  | 131.4             | 131.7  | 132.4  | 133.0  | 133.3  |
| Ending stocks  | 25.1   | 24.4   | 22.8   | 20.5              | 20.0   | 20.2   | 20.5   | 20.7   |
|                |        |        |        | (Dollars per ton) |        |        |        |        |
| All hay price  | 145.00 | 132.00 | 144.28 | 160.99            | 167.90 | 168.37 | 167.68 | 167.40 |

## U.S. planted and idled area

| Marketing year                    | 15/16  | 16/17  | 17/18  | 18/19           | 19/20  | 20/21  | 21/22  | 22/23  |
|-----------------------------------|--------|--------|--------|-----------------|--------|--------|--------|--------|
| <b>Planted area</b>               |        |        |        | (Million acres) |        |        |        |        |
| Corn                              | 88.02  | 94.00  | 90.89  | 93.20           | 91.27  | 92.02  | 91.68  | 91.56  |
| Soybeans                          | 82.65  | 83.43  | 89.51  | 85.98           | 87.67  | 87.12  | 87.21  | 87.05  |
| Wheat                             | 55.00  | 50.15  | 45.66  | 47.52           | 48.15  | 47.88  | 48.01  | 48.04  |
| Upland cotton                     | 8.42   | 9.88   | 11.80  | 10.88           | 10.71  | 10.54  | 10.41  | 10.37  |
| Sorghum                           | 8.46   | 6.69   | 5.99   | 6.50            | 6.55   | 6.53   | 6.51   | 6.52   |
| Barley                            | 3.62   | 3.05   | 2.38   | 2.56            | 2.55   | 2.45   | 2.36   | 2.31   |
| Oats                              | 3.09   | 2.83   | 2.54   | 2.73            | 2.73   | 2.73   | 2.75   | 2.77   |
| Rice                              | 2.63   | 3.15   | 2.56   | 2.83            | 2.74   | 2.75   | 2.78   | 2.80   |
| Sunflower seed                    | 1.86   | 1.60   | 1.27   | 1.42            | 1.39   | 1.37   | 1.36   | 1.35   |
| Peanuts                           | 1.63   | 1.67   | 1.82   | 1.72            | 1.68   | 1.67   | 1.67   | 1.67   |
| Canola                            | 1.78   | 1.71   | 2.16   | 1.96            | 1.94   | 1.93   | 1.92   | 1.91   |
| Sugar beets                       | 1.16   | 1.16   | 1.13   | 1.22            | 1.18   | 1.20   | 1.21   | 1.21   |
| Sugarcane harvested               | 0.88   | 0.90   | 0.88   | 0.89            | 0.88   | 0.88   | 0.88   | 0.87   |
| <b>13-crop planted</b>            | 259.19 | 260.24 | 258.57 | 259.42          | 259.43 | 259.07 | 258.75 | 258.43 |
| <b>Hay area harvested</b>         | 54.45  | 53.46  | 53.52  | 53.92           | 54.61  | 54.95  | 54.99  | 54.94  |
| <b>13 crops + hay</b>             | 313.63 | 313.70 | 312.09 | 313.33          | 314.05 | 314.01 | 313.74 | 313.37 |
| <b>Conservation reserve (CRP)</b> | 24.18  | 23.88  | 23.47  | 23.00           | 23.00  | 23.00  | 23.00  | 23.00  |
| <b>13 crops + hay + CRP</b>       | 337.81 | 337.58 | 335.56 | 336.33          | 337.05 | 337.01 | 336.74 | 336.37 |
| <b>Double crop area</b>           | 4.76   | 3.86   | 3.66   | 3.89            | 4.05   | 4.02   | 4.03   | 4.00   |
| <b>Total minus double crop</b>    | 333.06 | 333.72 | 331.89 | 332.44          | 333.00 | 332.99 | 332.72 | 332.37 |

## U.S. crop farm prices

| Marketing year               | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 | 20/21 | 21/22 | 22/23 |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Corn (\$/bu.)                | 3.61  | 3.35  | 3.48  | 3.64  | 3.80  | 3.79  | 3.75  | 3.72  |
| Soybeans (\$/bu.)            | 8.95  | 9.50  | 9.07  | 9.82  | 9.76  | 9.85  | 9.71  | 9.60  |
| Wheat (\$/bu.)               | 4.89  | 3.89  | 4.79  | 4.95  | 4.99  | 5.12  | 5.16  | 5.16  |
| Durum                        | 7.36  | 6.01  | 6.66  | 6.86  | 6.90  | 7.05  | 7.11  | 7.10  |
| Other spring                 | 4.78  | 4.56  | 5.26  | 5.15  | 5.19  | 5.32  | 5.37  | 5.37  |
| Winter                       | 4.80  | 3.57  | 4.52  | 4.76  | 4.79  | 4.92  | 4.96  | 4.96  |
| Upland cotton (cents/lb.)    | 61.20 | 68.00 | 59.94 | 62.29 | 62.81 | 62.47 | 62.69 | 63.60 |
| Sorghum (\$/bu.)             | 3.31  | 2.75  | 3.02  | 3.37  | 3.45  | 3.44  | 3.43  | 3.42  |
| Rice (\$/cwt)                | 12.20 | 10.30 | 12.74 | 12.05 | 12.33 | 12.76 | 12.96 | 13.18 |
| Long grain                   | 11.20 | 9.60  | 12.05 | 11.35 | 11.67 | 12.25 | 12.54 | 12.84 |
| Medium/short (exc. Japonica) | 11.20 | 10.10 | 12.41 | 11.95 | 12.17 | 12.46 | 12.59 | 12.74 |
| Japonica                     | 18.10 | 13.50 | 16.22 | 15.94 | 16.10 | 16.08 | 16.05 | 16.03 |
| Barley (\$/bu.)              | 5.52  | 4.96  | 5.17  | 5.29  | 5.39  | 5.37  | 5.36  | 5.35  |
| Oats (\$/bu.)                | 2.12  | 2.06  | 2.47  | 2.54  | 2.64  | 2.66  | 2.66  | 2.66  |
| Peanuts (cents/lb.)          | 19.30 | 19.50 | 20.08 | 18.50 | 18.66 | 19.19 | 19.32 | 19.28 |
| Sunflower seed (\$/cwt)      | 19.60 | 17.30 | 18.01 | 18.97 | 18.88 | 19.03 | 18.85 | 18.68 |
| Canola (\$/cwt)              | 15.60 | 16.70 | 16.48 | 17.78 | 17.65 | 17.82 | 17.64 | 17.45 |
| Flaxseed (\$/bu.)            | 8.95  | 8.00  | 8.14  | 8.62  | 8.59  | 8.67  | 8.60  | 8.53  |
| Lentils (\$/cwt)             | 31.00 | 28.50 | 27.45 | 28.28 | 28.25 | 28.40 | 28.28 | 28.17 |
| Safflower (\$/cwt)           | 24.50 | 20.70 | 22.29 | 23.21 | 23.17 | 23.35 | 23.22 | 23.09 |
| Mustard seed (\$/cwt)        | 31.80 | 32.80 | 32.59 | 33.69 | 33.66 | 33.92 | 33.81 | 33.67 |
| Dry peas (\$/cwt)            | 12.80 | 11.00 | 11.64 | 12.08 | 12.09 | 12.24 | 12.23 | 12.18 |
| Rapeseed (\$/cwt)            | 43.20 | 25.20 | 28.33 | 29.62 | 29.58 | 29.78 | 29.57 | 29.36 |
| Large chickpeas (\$/cwt)     | 30.60 | 32.00 | 29.69 | 30.76 | 30.78 | 31.12 | 31.07 | 30.95 |
| Small chickpeas (\$/cwt)     | 25.10 | 25.00 | 23.10 | 23.90 | 23.91 | 24.17 | 24.14 | 24.05 |
| Crambe (\$/cwt)              | 51.80 | 32.00 | 33.37 | 34.44 | 34.46 | 34.80 | 34.75 | 34.64 |
| Sesame seed (\$/cwt)         | 39.00 | 32.00 | 33.79 | 35.35 | 35.36 | 35.84 | 35.75 | 35.58 |

## U.S. soybean product supply and use

| October-September year   | 15/16  | 16/17  | 17/18  | 18/19             | 19/20  | 20/21  | 21/22  | 22/23  |
|--------------------------|--------|--------|--------|-------------------|--------|--------|--------|--------|
| <b>Soybean meal</b>      |        |        |        | (Thousand tons)   |        |        |        |        |
| Production               | 44,672 | 44,361 | 46,333 | 46,188            | 46,348 | 46,453 | 46,754 | 46,978 |
| Imports                  | 403    | 350    | 325    | 325               | 325    | 325    | 325    | 325    |
| Domestic use             | 33,118 | 33,050 | 34,239 | 34,781            | 35,584 | 35,836 | 36,153 | 36,545 |
| Exports                  | 11,954 | 11,600 | 12,441 | 11,740            | 11,084 | 10,937 | 10,921 | 10,754 |
| Ending stocks            | 264    | 325    | 303    | 295               | 300    | 306    | 311    | 316    |
| <b>Soybean oil</b>       |        |        |        | (Million pounds)  |        |        |        |        |
| Production               | 21,950 | 21,945 | 22,725 | 22,654            | 22,733 | 22,784 | 22,932 | 23,042 |
| Imports                  | 288    | 350    | 325    | 325               | 325    | 325    | 325    | 325    |
| Domestic use             | 20,163 | 19,600 | 20,660 | 21,369            | 21,796 | 21,982 | 22,108 | 22,232 |
| Biodiesel                | 5,675  | 6,000  | 6,718  | 7,309             | 7,636  | 7,761  | 7,790  | 7,789  |
| Food and other           | 14,488 | 13,600 | 13,942 | 14,060            | 14,160 | 14,221 | 14,318 | 14,444 |
| Exports                  | 2,243  | 2,400  | 2,259  | 1,563             | 1,220  | 1,118  | 1,108  | 1,068  |
| Ending stocks            | 1,687  | 1,982  | 2,113  | 2,161             | 2,203  | 2,212  | 2,254  | 2,321  |
| <b>Decatur prices</b>    |        |        |        | (Dollars per ton) |        |        |        |        |
| Soybean meal 48% protein | 324.56 | 320.00 | 314.28 | 332.30            | 328.18 | 326.10 | 322.64 | 320.06 |
|                          |        |        |        | (Cents per pound) |        |        |        |        |
| Soybean oil              | 29.86  | 32.50  | 32.21  | 34.96             | 35.56  | 36.78  | 36.66  | 36.01  |

## U.S. biomass-based diesel supply and use

| Calendar year                | 2015  | 2016  | 2017  | 2018                 | 2019  | 2020  | 2021  | 2022  |
|------------------------------|-------|-------|-------|----------------------|-------|-------|-------|-------|
| <b>Supply and use</b>        |       |       |       | (Million gallons)    |       |       |       |       |
| Production                   | 1,573 | 1,860 | 2,149 | 2,250                | 2,468 | 2,566 | 2,629 | 2,662 |
| Biodiesel                    | 1,263 | 1,550 | 1,799 | 1,873                | 2,063 | 2,139 | 2,182 | 2,200 |
| From soybean oil             | 637   | 792   | 867   | 874                  | 974   | 998   | 1,011 | 1,012 |
| From corn oil                | 137   | 170   | 226   | 256                  | 294   | 321   | 332   | 338   |
| From other fats and oils     | 489   | 589   | 707   | 743                  | 795   | 820   | 838   | 850   |
| Cellulosic diesel            | 0     | 1     | 1     | 1                    | 2     | 2     | 2     | 2     |
| Renewable diesel             | 309   | 310   | 349   | 375                  | 403   | 426   | 446   | 460   |
| Net imports                  | 265   | 605   | 360   | 448                  | 447   | 416   | 414   | 434   |
| Domestic disappearance       | 1,803 | 2,369 | 2,526 | 2,706                | 2,918 | 2,983 | 3,043 | 3,095 |
| Ending stocks                | 166   | 261   | 244   | 236                  | 234   | 233   | 233   | 234   |
| <b>Prices and RIN values</b> |       |       |       | (Dollars per gallon) |       |       |       |       |
| Biodiesel rack, Des Moines   | 2.84  | 3.22  | 3.23  | 3.32                 | 3.56  | 3.64  | 3.73  | 3.72  |
| #2 diesel, refiner sales     | 1.67  | 1.37  | 1.60  | 1.50                 | 1.67  | 1.99  | 2.19  | 2.38  |
| Biodiesel RIN (per RIN gal.) | 0.75  | 0.91  | 1.00  | 1.25                 | 1.48  | 1.43  | 1.43  | 1.38  |

## U.S. ethanol supply and use

| Calendar year                                     | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    | 2021    | 2022    |
|---|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>Petroleum fuel prices</b> (Dollars per barrel) |         |         |         |         |         |         |         |         |
| Petroleum, W. Texas interm.                       | 48.69   | 43.21   | 49.14   | 45.79   | 53.42   | 67.93   | 74.52   | 80.34   |
| Petroleum, refiners acquisition                   | 48.40   | 40.60   | 45.47   | 41.76   | 48.24   | 60.48   | 67.45   | 73.97   |
| <b>(Dollars per gallon)</b>                       |         |         |         |         |         |         |         |         |
| Unl. gasoline, FOB Omaha                          | 1.88    | 1.56    | 1.72    | 1.62    | 1.79    | 2.11    | 2.31    | 2.50    |
| Unleaded gasoline, retail                         | 2.45    | 2.14    | 2.31    | 2.21    | 2.33    | 2.66    | 2.86    | 3.06    |
| <b>Motor gasoline supplied</b> (Million gallons)  |         |         |         |         |         |         |         |         |
|   | 140,704 | 143,367 | 144,040 | 144,770 | 144,749 | 144,364 | 143,611 | 142,541 |
| <b>Ethanol supply and use</b>                     |         |         |         |         |         |         |         |         |
| Production  | 14,807  | 15,329  | 15,983  | 15,863  | 15,681  | 15,635  | 15,585  | 15,526  |
| From corn   | 14,441  | 15,001  | 15,638  | 15,527  | 15,364  | 15,327  | 15,283  | 15,228  |
| From other feedstocks                             | 365     | 325     | 337     | 322     | 302     | 291     | 283     | 278     |
| Cellulosic  | 2       | 3       | 8       | 13      | 15      | 16      | 18      | 20      |
| Imports   | 92      | 36      | 47      | 53      | 62      | 61      | 61      | 59      |
| Domestic disappearance                            | 13,947  | 14,406  | 14,827  | 14,945  | 14,770  | 14,757  | 14,725  | 14,683  |
| In low-level blends                               | 13,711  | 14,133  | 14,297  | 14,339  | 14,210  | 14,203  | 14,181  | 14,124  |
| In mid-level blends                               | 51      | 82      | 177     | 226     | 214     | 204     | 193     | 184     |
| In flex fuel vehicles                             | 184     | 190     | 353     | 380     | 346     | 350     | 350     | 375     |
| Exports   | 832     | 1,046   | 1,204   | 973     | 976     | 942     | 924     | 906     |
| Ending stocks                                     | 907     | 820     | 819     | 817     | 814     | 811     | 807     | 804     |
| <b>Ethanol prices</b> (Dollars per gallon)        |         |         |         |         |         |         |         |         |
| Conventional rack, Omaha                          | 1.61    | 1.55    | 1.67    | 1.69    | 1.71    | 1.74    | 1.74    | 1.75    |
| Other advanced rack                               | 1.76    | 1.63    | 1.80    | 2.02    | 2.82    | 2.80    | 2.81    | 2.76    |
| Effective retail                                  | 1.63    | 1.31    | 1.39    | 1.37    | 1.88    | 1.93    | 1.93    | 1.94    |
| Ethanol/gasoline retail ratio                     | 66%     | 61%     | 60%     | 62%     | 81%     | 72%     | 68%     | 64%     |
| <b>RIN values</b> (Dollars per gallon)            |         |         |         |         |         |         |         |         |
| Conventional ethanol                              | 0.55    | 0.82    | 0.87    | 0.91    | 0.37    | 0.37    | 0.36    | 0.36    |
| Other advanced ethanol                            | 0.71    | 0.90    | 1.00    | 1.25    | 1.48    | 1.43    | 1.43    | 1.38    |



## U.S. beef sector

| Calendar year                             | 2015   | 2016   | 2017   | 2018                        | 2019   | 2020   | 2021   | 2022   |
|---|--------|--------|--------|-----------------------------|--------|--------|--------|--------|
|   |        |        |        | (Million head)              |        |        |        |        |
| <b>Beef cows (Jan. 1)</b>                 | 29.3   | 30.2   | 31.2   | 31.7                        | 31.8   | 31.6   | 31.4   | 31.1   |
| <b>Dairy cows (Jan. 1)</b>                | 9.3    | 9.3    | 9.3    | 9.4                         | 9.4    | 9.3    | 9.3    | 9.3    |
| <b>Cattle and calves (Jan. 1)</b>         | 89.1   | 91.9   | 93.6   | 94.6                        | 94.9   | 94.7   | 94.3   | 93.9   |
|   |        |        |        | (Million pounds)            |        |        |        |        |
| <b>Beef supply and use</b>                |        |        |        |                             |        |        |        |        |
| Production                                | 23,760 | 25,288 | 26,327 | 27,230                      | 27,896 | 28,009 | 28,018 | 27,977 |
| Imports                                   | 3,371  | 3,015  | 2,832  | 2,839                       | 2,771  | 2,703  | 2,742  | 2,771  |
| Domestic use                              | 24,771 | 25,673 | 26,466 | 27,198                      | 27,631 | 27,603 | 27,612 | 27,581 |
| Exports                                   | 2,267  | 2,556  | 2,784  | 2,899                       | 3,016  | 3,103  | 3,144  | 3,164  |
| Ending stocks                             | 683    | 757    | 665    | 638                         | 657    | 663    | 667    | 671    |
|   |        |        |        | (Dollars per hundredweight) |        |        |        |        |
| <b>Prices</b>                             |        |        |        |                             |        |        |        |        |
| Total all grades, 5-area direct steers    | 148.12 | 120.86 | 122.06 | 110.99                      | 107.55 | 110.32 | 114.14 | 117.44 |
| 600 - 650 lb. Oklahoma City feeder steers | 226.52 | 153.44 | 152.97 | 134.52                      | 131.24 | 136.89 | 145.98 | 153.63 |
| Boxed beef cutout                         | 237.48 | 206.68 | 207.36 | 192.10                      | 190.24 | 195.51 | 201.95 | 207.74 |
|   |        |        |        | (Dollars per pound)         |        |        |        |        |
| Beef retail                               | 6.29   | 5.96   | 6.00   | 5.84                        | 5.75   | 5.84   | 6.01   | 6.21   |

## U.S. pork sector

| Calendar year   | 2015   | 2016   | 2017   | 2018                        | 2019   | 2020   | 2021   | 2022   |
|---|--------|--------|--------|-----------------------------|--------|--------|--------|--------|
|   |        |        |        | (Million head)              |        |        |        |        |
| <b>Breeding herd (Dec. 1*)</b>                        | 5.94   | 6.00   | 6.09   | 6.18                        | 6.19   | 6.04   | 5.87   | 5.77   |
| <b>Market hogs (Dec. 1*)</b>                          | 61.8   | 62.9   | 65.4   | 67.1                        | 68.4   | 68.8   | 68.0   | 67.3   |
|   |        |        |        | (Million pounds)            |        |        |        |        |
| <b>Pork supply and use</b>                            |        |        |        |                             |        |        |        |        |
| Production  | 24,517 | 24,957 | 25,872 | 26,687                      | 27,175 | 27,242 | 27,101 | 27,187 |
| Imports   | 1,116  | 1,091  | 1,095  | 977                         | 1,011  | 1,034  | 1,036  | 1,034  |
| Domestic use  | 20,592 | 20,891 | 21,088 | 21,614                      | 21,984 | 21,948 | 21,709 | 21,663 |
| Exports   | 5,010  | 5,239  | 5,753  | 5,965                       | 6,179  | 6,326  | 6,437  | 6,557  |
| Ending stocks   | 590    | 507    | 633    | 718                         | 741    | 743    | 734    | 736    |
|   |        |        |        | (Dollars per hundredweight) |        |        |        |        |
| <b>Prices</b>   |        |        |        |                             |        |        |        |        |
| Barrows & gilts, national base 51-52% lean equivalent | 50.23  | 46.16  | 49.16  | 45.93                       | 45.57  | 48.64  | 52.68  | 54.44  |
| Pork cutout value                                     | 78.96  | 78.36  | 83.86  | 76.82                       | 75.61  | 79.49  | 86.02  | 89.68  |
|   |        |        |        | (Dollars per pound)         |        |        |        |        |
| Pork retail   | 3.85   | 3.75   | 3.77   | 3.72                        | 3.70   | 3.82   | 4.02   | 4.14   |

\* Preceding year

## U.S. poultry supply and use

| Calendar year                 | 2015              | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   |
|-------------------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|
| <b>Broiler</b>                |                   |        |        |        |        |        |        |        |
|                               | (Million pounds)  |        |        |        |        |        |        |        |
| Production                    | 39,620            | 40,260 | 41,071 | 41,886 | 42,542 | 43,197 | 43,881 | 44,585 |
| Imports                       | 131               | 131    | 134    | 130    | 132    | 134    | 136    | 138    |
| Domestic use                  | 33,278            | 33,800 | 34,427 | 34,971 | 35,335 | 35,698 | 36,104 | 36,562 |
| Exports                       | 6,321             | 6,644  | 6,814  | 7,030  | 7,334  | 7,626  | 7,907  | 8,153  |
| Ending stocks                 | 832               | 778    | 743    | 758    | 763    | 769    | 776    | 785    |
| <b>Turkey</b>                 |                   |        |        |        |        |        |        |        |
| Production                    | 5,627             | 5,981  | 6,030  | 6,053  | 6,072  | 6,110  | 6,160  | 6,210  |
| Imports                       | 45                | 50     | 35     | 40     | 41     | 41     | 42     | 42     |
| Domestic use                  | 5,136             | 5,384  | 5,444  | 5,449  | 5,456  | 5,472  | 5,504  | 5,538  |
| Exports                       | 529               | 569    | 611    | 644    | 661    | 680    | 696    | 712    |
| Ending stocks                 | 201               | 279    | 289    | 289    | 284    | 284    | 286    | 288    |
| <b>Prices</b>                 |                   |        |        |        |        |        |        |        |
|                               | (Cents per pound) |        |        |        |        |        |        |        |
| National composite            |                   |        |        |        |        |        |        |        |
| wholesale broiler             | 90.52             | 84.33  | 93.86  | 90.33  | 91.94  | 93.45  | 94.96  | 95.58  |
| Broiler retail                | 196.67            | 189.73 | 188.73 | 189.77 | 194.05 | 197.76 | 201.19 | 204.20 |
| 8-16 lb. national turkey hens | 116.15            | 117.11 | 100.67 | 100.08 | 103.15 | 104.71 | 105.42 | 105.45 |
| Turkey retail                 | 150.54            | 155.27 | 158.89 | 153.86 | 157.68 | 162.05 | 165.14 | 167.57 |

## U.S. per-capita meat consumption

| Calendar year | 2015     | 2016  | 2017  | 2018  | 2019  | 2020  | 2021  | 2022  |
|---------------|----------|-------|-------|-------|-------|-------|-------|-------|
|               | (Pounds) |       |       |       |       |       |       |       |
| Beef          | 54.0     | 55.6  | 56.9  | 58.0  | 58.5  | 57.9  | 57.5  | 57.0  |
| Pork          | 49.8     | 50.1  | 50.3  | 51.1  | 51.6  | 51.1  | 50.1  | 49.6  |
| Broiler       | 89.0     | 89.8  | 90.8  | 91.5  | 91.7  | 92.0  | 92.3  | 92.7  |
| Turkey        | 16.0     | 16.6  | 16.7  | 16.6  | 16.5  | 16.4  | 16.4  | 16.4  |
| Sum           | 208.7    | 212.1 | 214.7 | 217.2 | 218.3 | 217.4 | 216.3 | 215.7 |

## U.S. dairy sector

| Calendar year                   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Milk supply</b>              |        |        |        |        |        |        |        |        |
| Dairy cows (thou. head)         | 9,314  | 9,328  | 9,389  | 9,372  | 9,335  | 9,308  | 9,298  | 9,303  |
| Milk yield (lbs. per cow)       | 22,397 | 22,775 | 23,033 | 23,392 | 23,738 | 24,037 | 24,347 | 24,643 |
| Milk production (bil. lbs.)     | 208.6  | 212.4  | 216.2  | 219.2  | 221.6  | 223.7  | 226.4  | 229.2  |
| (Dollars per hundredweight)     |        |        |        |        |        |        |        |        |
| <b>All milk price</b>           | 17.21  | 16.34  | 17.80  | 17.49  | 17.87  | 18.27  | 18.64  | 18.76  |
| <b>Wholesale prices</b>         |        |        |        |        |        |        |        |        |
| (Dollars per pound)             |        |        |        |        |        |        |        |        |
| Butter, CME                     | 2.09   | 2.08   | 2.42   | 2.23   | 2.03   | 1.96   | 1.97   | 1.98   |
| Cheese, Am., 40#, CME           | 1.61   | 1.58   | 1.57   | 1.53   | 1.56   | 1.61   | 1.65   | 1.67   |
| Nonfat dry milk, AA             | 0.94   | 0.85   | 0.91   | 1.01   | 1.15   | 1.21   | 1.23   | 1.24   |
| <b>Dairy product production</b> |        |        |        |        |        |        |        |        |
| (Million pounds)                |        |        |        |        |        |        |        |        |
| American cheese                 | 4,694  | 4,756  | 4,883  | 4,962  | 5,024  | 5,078  | 5,141  | 5,207  |
| Other cheese                    | 7,137  | 7,401  | 7,572  | 7,690  | 7,788  | 7,886  | 8,007  | 8,134  |
| Butter                          | 1,850  | 1,839  | 1,846  | 1,874  | 1,907  | 1,941  | 1,981  | 2,009  |
| Nonfat dry milk                 | 2,269  | 2,313  | 2,349  | 2,448  | 2,511  | 2,540  | 2,581  | 2,633  |

## U.S. consumer food price inflation

| Calendar year                   | 2015  | 2016  | 2017  | 2018 | 2019 | 2020 | 2021 | 2022 |
|---------------------------------|-------|-------|-------|------|------|------|------|------|
| (Change from the previous year) |       |       |       |      |      |      |      |      |
| <b>Food</b>                     | 1.9%  | 0.3%  | 1.0%  | 2.2% | 2.3% | 2.7% | 2.8% | 2.6% |
| <b>Food at home</b>             | 1.2%  | -1.3% | 0.1%  | 2.0% | 2.2% | 2.7% | 2.7% | 2.4% |
| Cereal and bakery               | 1.1%  | -0.3% | 0.4%  | 2.6% | 2.2% | 2.4% | 2.3% | 2.1% |
| Meat                            | 2.9%  | -4.9% | -1.2% | 1.0% | 1.9% | 3.1% | 3.3% | 3.0% |
| Dairy                           | -1.3% | -2.3% | 0.8%  | 2.1% | 2.5% | 2.9% | 2.9% | 2.6% |
| Fruits and vegetables           | -0.2% | 0.8%  | 0.3%  | 2.0% | 2.2% | 2.3% | 2.3% | 2.2% |
| Other food at home              | 1.5%  | 0.1%  | 0.7%  | 2.3% | 2.0% | 2.2% | 2.2% | 2.0% |
| <b>Food away from home</b>      | 2.9%  | 2.6%  | 2.2%  | 2.5% | 2.4% | 2.7% | 2.8% | 2.7% |