

Ukraine & Russian Federation Conflict:

Grain Market Impacts

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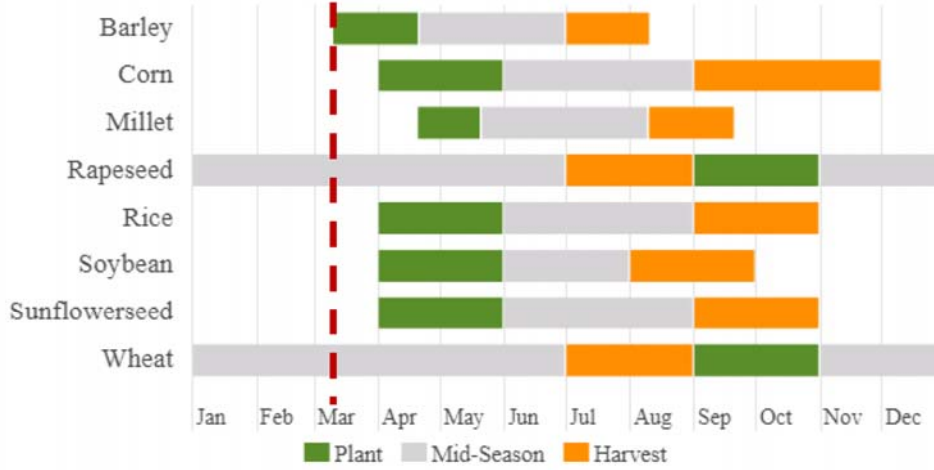


Ukraine-Russia Conflict Impacts on Grain Markets

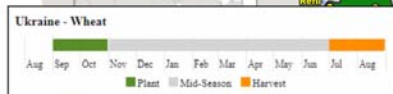
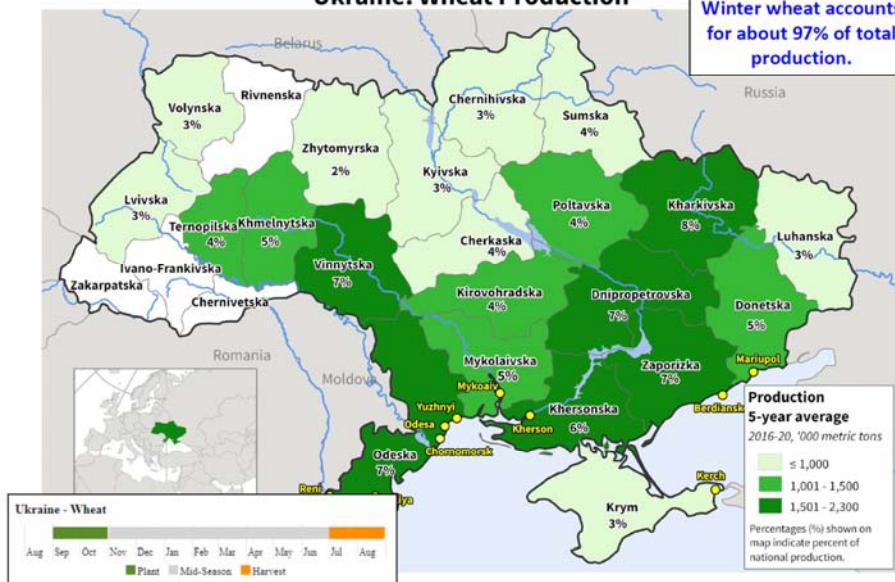
- **Wheat** Global ****
- **Corn** Global ****
- **Sunflower & Sunflower Oil** Global ****
- **Soybeans & Soybean Oil** U.S. & Global



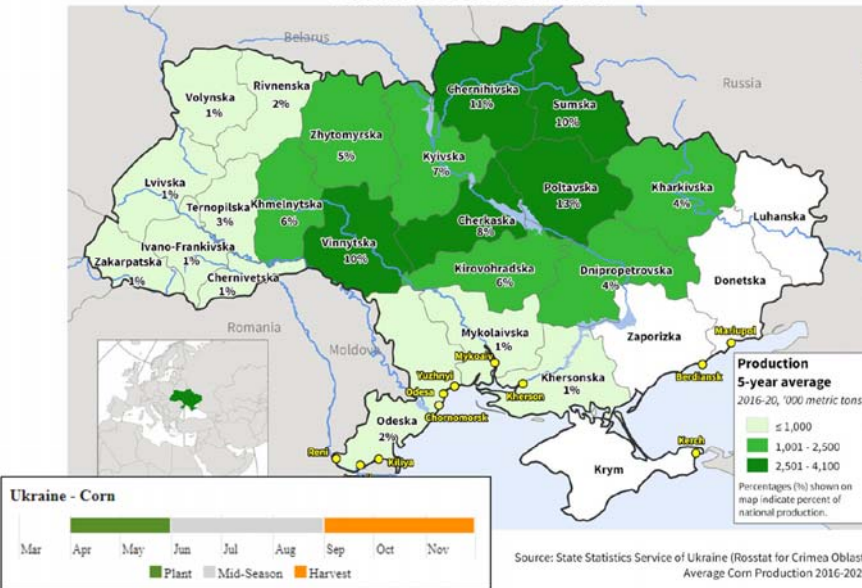
Ukraine – Crop Calendar



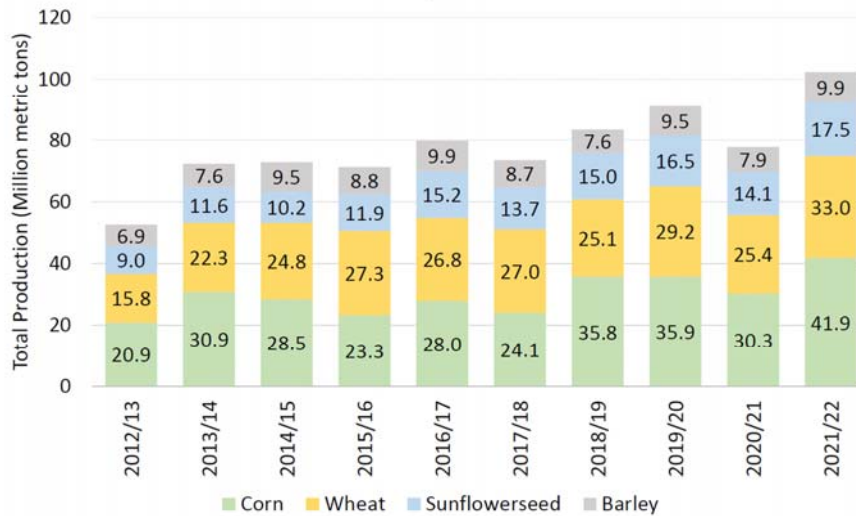
Ukraine: Wheat Production



Ukraine: Corn Production



Ukraine Crop Production



Wheat Markets



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Wheat Market Outlook *with Ukraine-Russia Impacts**

➤ World Wheat Market Situation “Current” MY 2021/22 vs year ago

- **Production** (778.8 mmt, ≈ same) ⇒ Ukraine’s 33 mmt @risk in Years 2022 & 2023
- **Food Use** (628.9 mmt, ↑ 4.2 mmt) ⇒ Likely rationing of wheat food use In Years 2022 & 2023
- **Exports** (200 mmt, ↓1.25%) ⇒ Ukraine’s 20-24 mmt exports declines In Years 2022 & 2023
- **Ending Stocks** (278.4 mmt, ↓4.2%) ⇒ Tighter World Stocks w Ukraine @ Risk In Years 2022 & 2023

➤ Ukraine-Russia Impacts *On the World Wheat Market*

- ↑ **Wheat seedings** 2022-2023, U.S. & Global, but is question in Ukraine
- ↑ **Exports** *Select Countries:* India, Argentina, Australia, other.....(U.S.???)
- ↑ **Price\$***** (systemic wheat price inflation on World market – especially in “New” MY 2022/23)

World Wheat Production

The Chief Economist
Department of Agriculture
March 9, 2022

| Country or Region | 2020/2021 estimate | 2021/2022 forecast | Change from March 9 | Change from 2020/2021 |
|--------------------------|--------------------|--------------------|---------------------|-----------------------|
| ----- Million Tons ----- | | | | |
| World | 776.3 | 778.8 | 0.3 | 2.6 |
| United States | 49.8 | 44.8 | -- | -5.0 |
| Foreign | 726.5 | 734.0 | 0.3 | 7.5 |
| Argentina | 17.6 | 21.0 | 0.5 | 3.4 |
| Canada | 35.2 | 21.7 | -- | -13.5 |
| Australia | 33.3 | 36.3 | -- | 3.0 |
| European Union | 126.7 | 138.4 | -0.6 | 11.7 |
| Turkey | 18.2 | 16.3 | -- | -2.0 |
| Russia | 85.4 | 75.2 | -- | -10.2 |
| Ukraine | 25.4 | 33.0 | -- | 7.6 |
| Kazakhstan | 14.3 | 11.8 | -- | -2.4 |
| China | 134.2 | 136.9 | -- | 2.7 |
| India | 107.9 | 109.6 | ** | 1.7 |
| Northwest Africa | 7.5 | 12.4 | -- | 4.9 |



Ukraine Wheat S-D Trends *Less 50% of Ukraine Crop in MY 2022/23.*

MY 2013/14 – “New Crop” MY 2022/23 as of the April 8, 2022 USDA WASDE report



World Wheat Supply and Use

| Item | 2020/2021 estimate | 2021/2022 forecast | Change from March 9 | Change from 2020/2021 |
|--------------------------|-----------------------|-----------------------|------------------------|--------------------------|
| ----- Million Tons ----- | | | | |
| Beginning stocks | 296.8 | 290.7 | 0.4 | -6.2 |
| Production | 776.3 | 778.8 | 0.3 | 2.6 |
| Total Supply | 1,073.1 | 1,069.5 | 0.7 | -3.6 |
| Feed use | 157.7 | 162.2 | 0.1 | 4.5 |
| Total use | 782.4 | 791.1 | 3.8 | 8.7 |
| Trade | 202.6 | 200.1 | -3.0 | -2.5 |
| Ending Stocks | 290.7 | 278.4 | -3.1 | -12.3 |

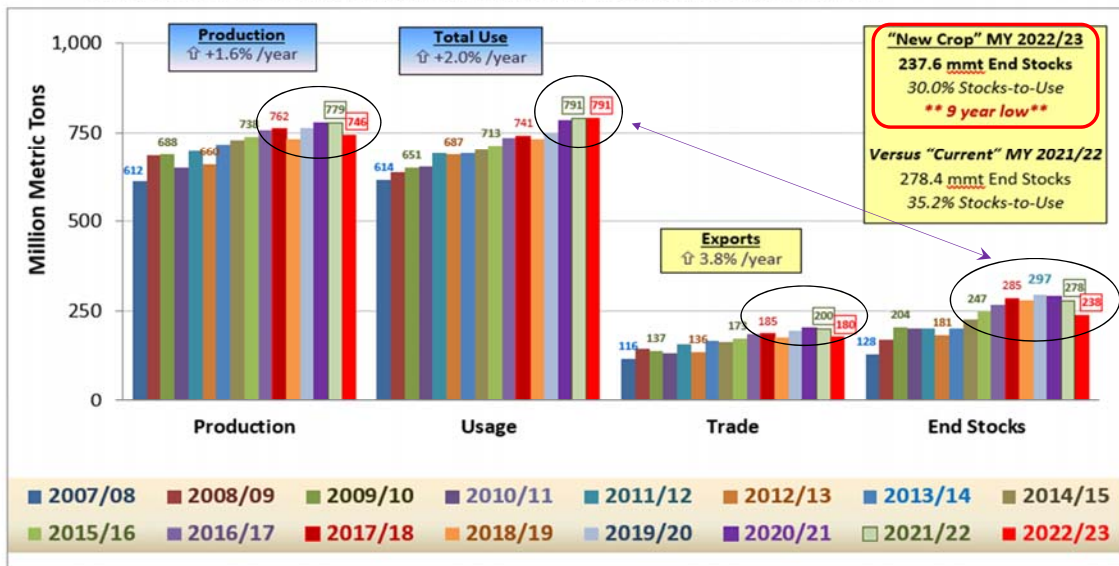


April 8, 2022

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"World Less-Ukraine in 2022/23" Wheat Usage & Ending Stocks: MY 2007/08 - "Current Crop" MY 2021/22,

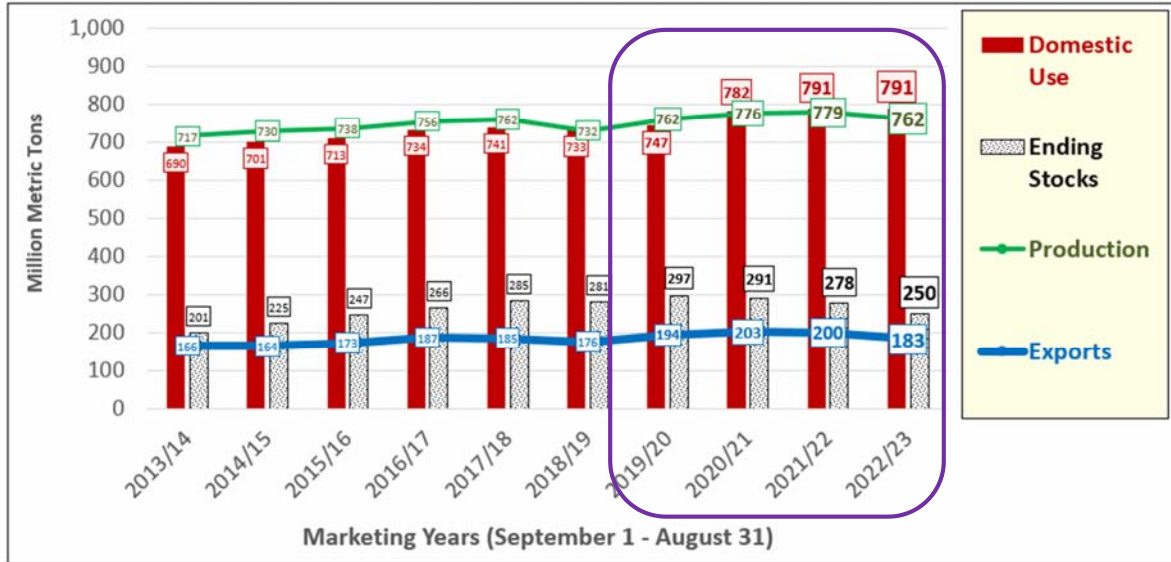
as of the April 8, 2022 USDA WASDE Report + KSU Estimates for "New Crop" MY 2022/23 Less Ukraine



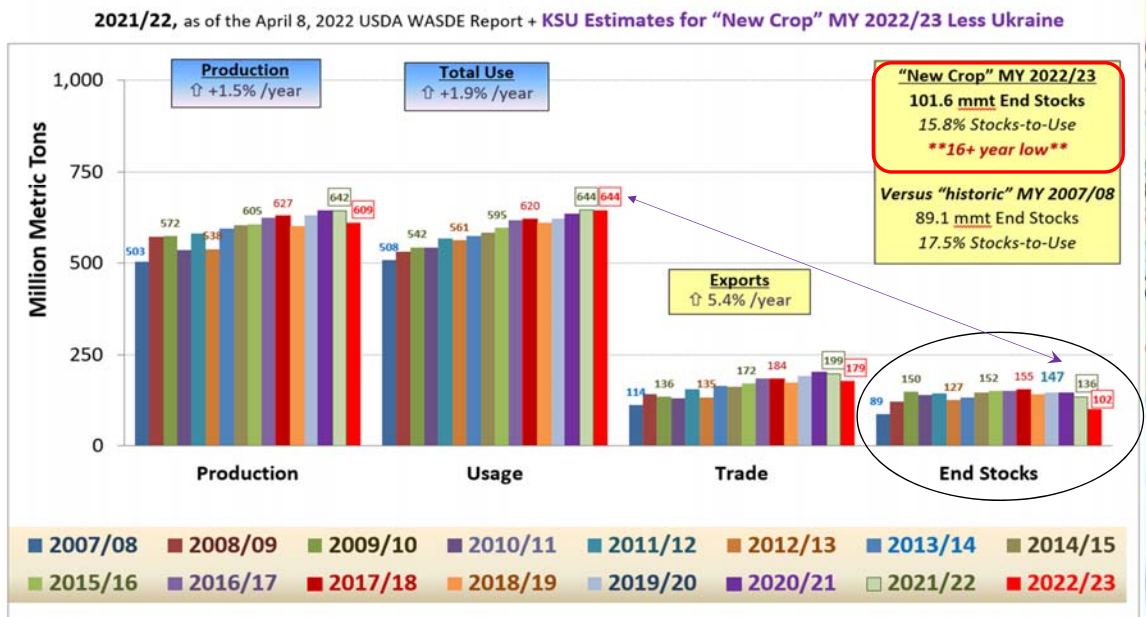
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World Wheat Supply-Demand Trends Less 50% Ukraine Crop in MY 2022/23:

MY 2013/14 – “New Crop” MY 2022/23 as of the April 8, 2022 USDA WASDE report

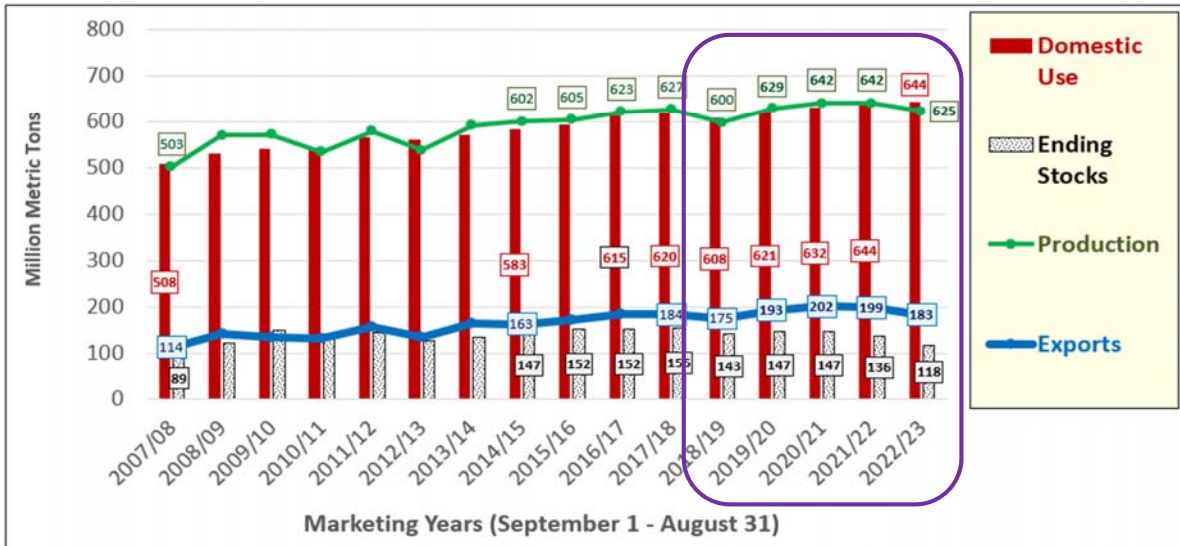


“World Less-China & Less Ukraine in 2022/23” Wheat Usage & Ending Stocks: MY 2007/08 - “New Crop” MY 2021/22, as of the April 8, 2022 USDA WASDE Report + KSU Estimates for “New Crop” MY 2022/23 Less Ukraine

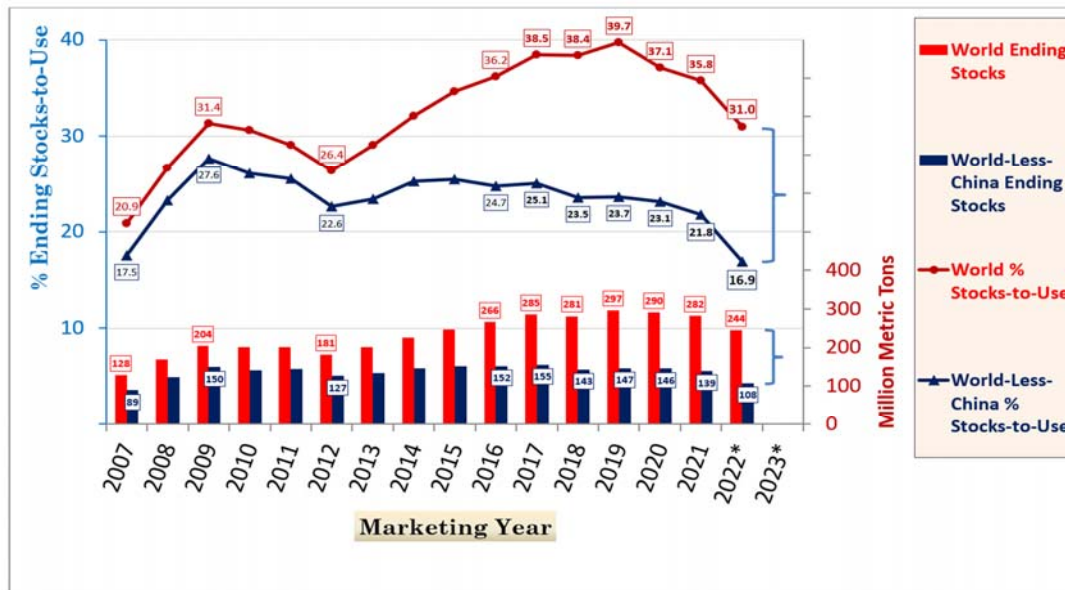


World *Less China & Less 50% of Ukraine Crop in 2022/23* Wheat Supply-Demand

Trends: MY 2007/08 – “New Crop” MY 2022/23 as of the April 8, 2022 USDA WASDE report



World vs “World *Less-China & Less Ukraine in 2022/23*” Wheat End Stocks & % Stocks-to-Use: MY 2007/08 thru “New Crop” MY 2022/23 as of the 3/9/2022 USDA WASDE + KSU Ests



Corn Markets



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Department of Agricultural Economics

Corn Market Outlook *with Ukraine-Russia Impacts**

➤ World Corn Market Situation *“Current” MY 2021/22 vs year ago*

- **Production** (1,210 mmt, ↑7.5%) ⇒ Ukraine’s 41.9 mmt *@risk* In Years 2022 & 2023
- **Feed Use** (753 mmt, ↑4.1%) ⇒ Likely *price rationing of feed use* In Years 2022 & 2023
- **Exports** (197 mmt, ↑8.2%) ⇒ Ukraine’s 27-33 mmt *exports declines* In Years 2022 & 2023
- **Ending Stocks** (305 mmt, ↑4.6%) ⇒ *Tighter World Stocks w/o Ukraine* In Years 2022 & 2023

➤ Ukraine-Russia Impacts *On the World Wheat Market*

- ↑ **Corn Planted** 2022-2023, but Ukraine logistics-fuel & crop inputs in question
- ↑ **Exports** *Select Countries*: U.S., Brazil, Argentina; other???
- ↑ **Price\$***** (*strong feedgrain price inflation in “current” MY 2021/22 & “new crop” MY 2022/23*)

World Corn Production

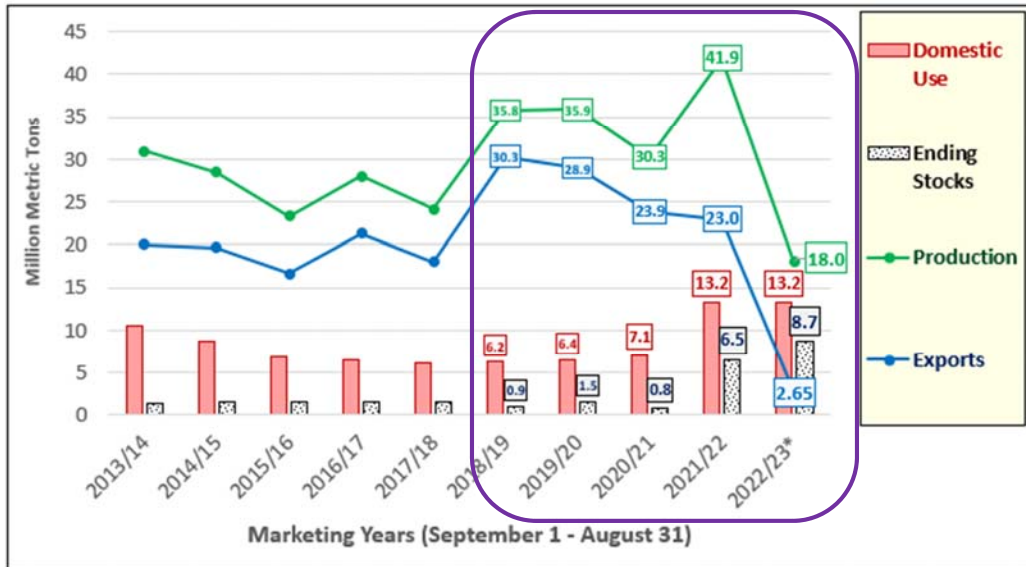
| Country or Region | 2020/2021 estimate | 2021/2022 forecast | Change from March 9 | Change from 2020/2021 |
|--------------------------|--------------------|--------------------|---------------------|-----------------------|
| ----- Million Tons ----- | | | | |
| World | 1,125.9 | 1,210.5 | 4.3 | 84.6 |
| United States | 358.4 | 383.9 | -- | 25.5 |
| Foreign | 767.4 | 826.5 | 4.3 | 59.1 |
| Argentina | 52.0 | 53.0 | -- | 1.0 |
| Brazil | 87.0 | 116.0 | 2.0 | 29.0 |
| Mexico | 27.3 | 27.6 | -- | 0.3 |
| Canada | 13.6 | 14.0 | -- | 0.4 |
| European Union | 67.1 | 70.5 | 0.7 | 3.4 |
| Serbia | 8.1 | 6.2 | -- | -1.9 |
| FSU-12 | 48.9 | 63.2 | -- | 14.3 |
| Ukraine | 30.3 | 41.9 | -- | 11.6 |
| Russia | 13.9 | 15.2 | -- | 1.4 |
| South Africa | 17.0 | 16.3 | -- | -0.7 |
| China | 260.7 | 272.6 | -- | 11.9 |
| India | 31.6 | 32.5 | -- | 0.9 |

World Corn Supply and Use

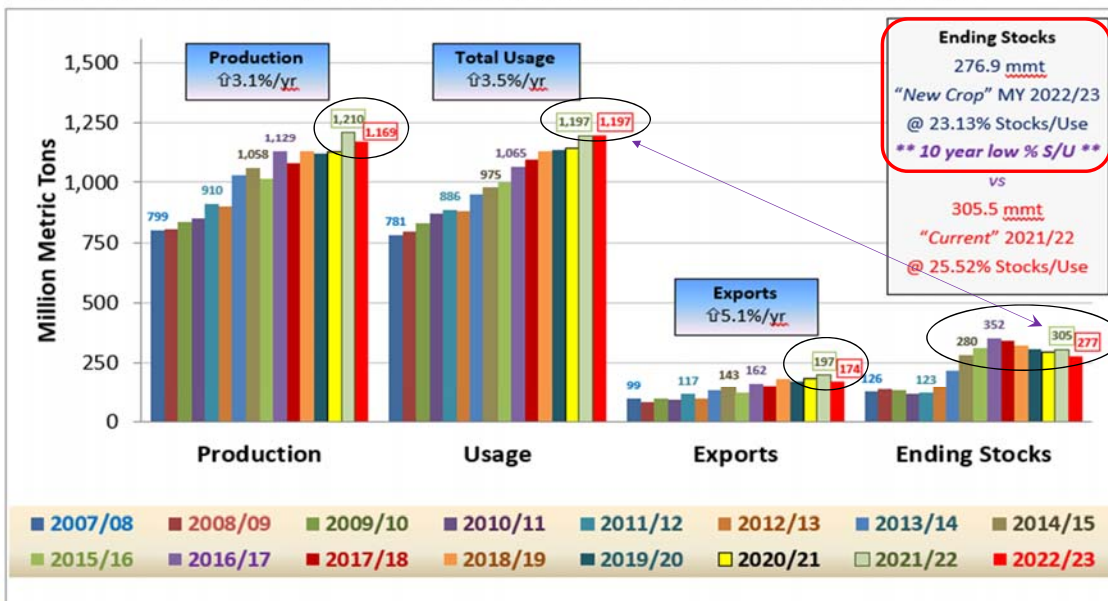
| Item | 2020/2021 estimate | 2021/2022 forecast | Change from March 9 | Change from 2020/2021 |
|--------------------------|--------------------|--------------------|---------------------|-----------------------|
| ----- Million Tons ----- | | | | |
| Beginning stocks | 306.4 | 292.2 | 0.7 | -14.2 |
| Production | 1,125.9 | 1,210.5 | 4.3 | 84.6 |
| Total Supply | 1,432.3 | 1,502.6 | 5.0 | 70.4 |
| Feed use | 722.9 | 752.6 | -0.8 | 29.7 |
| Total use | 1,140.1 | 1,197.1 | 0.5 | 57.0 |
| Trade | 182.1 | 197.0 | -2.9 | 14.9 |
| Ending Stocks | 292.2 | 305.5 | 4.5 | 13.3 |

Ukraine *Less 50% of 4 Yr. Avg Crops* Corn Supply-Demand ^{Adjusted:}

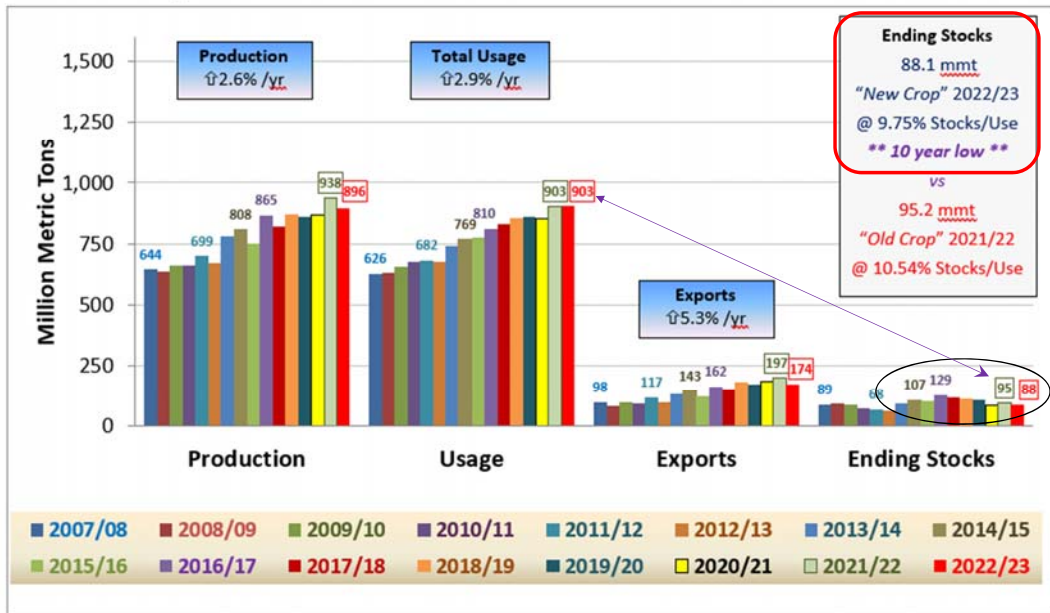
MY 2013/14 – “New Crop” MY 2022/23^{Forecast}, as of the April 8, 2022 USDA WASDE report



World Corn Supply-Demand *Less Ukraine in 2022/23*: MY 2007/08 – “Current” MY 2021/22, as of the April 8, 2022 USDA WASDE Report with KSU Estimates for MY 2022/23

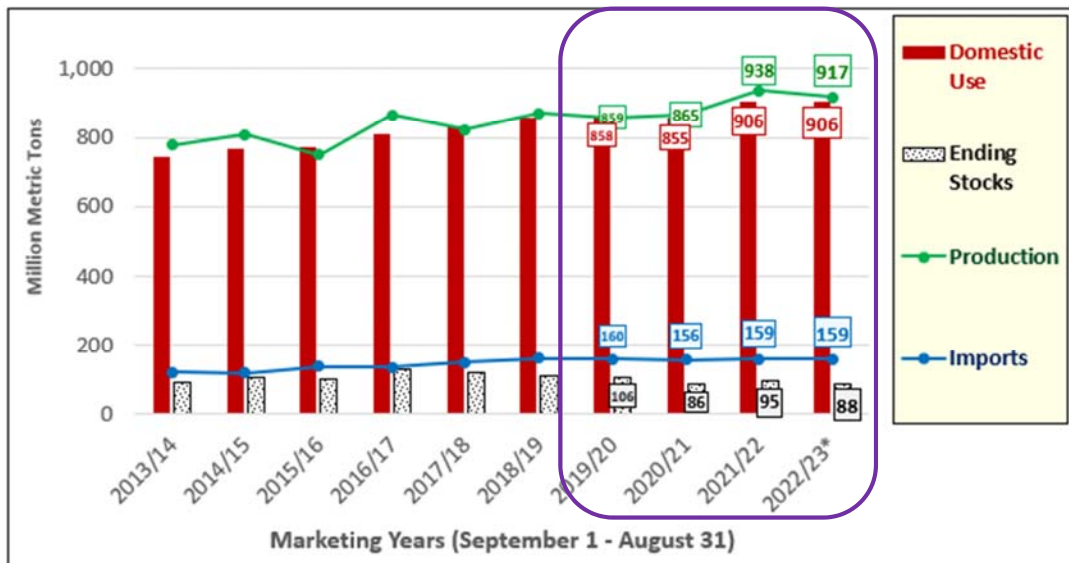


“World Less-China, & Less Ukraine in 2022/23” Corn Supply-Demand: MY 2007/08 –
 “New Crop” MY 2022/23, as of the April 8, 2022 USDA WASDE Report



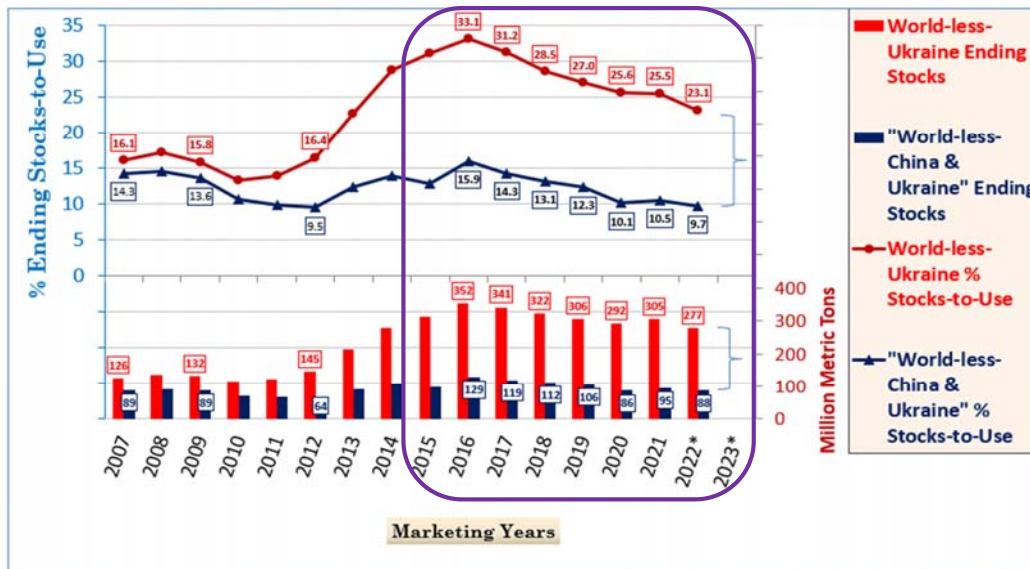
“World Less-China & Less 50% Ukraine Crop in 2022/23” Corn S-D:

MY 2006/07 – “New Crop” MY 2022/23 as of the April 8, 2022 USDA WASDE report (KSU Est.)



World vs "World-Less-China, & Less 50% Ukraine Crop in 2022/23" % Corn S/U:

MY 2007/08 through "New Crop" MY 2022/23, as of the April 8, 2022 USDA WASDE + KSU Estimates



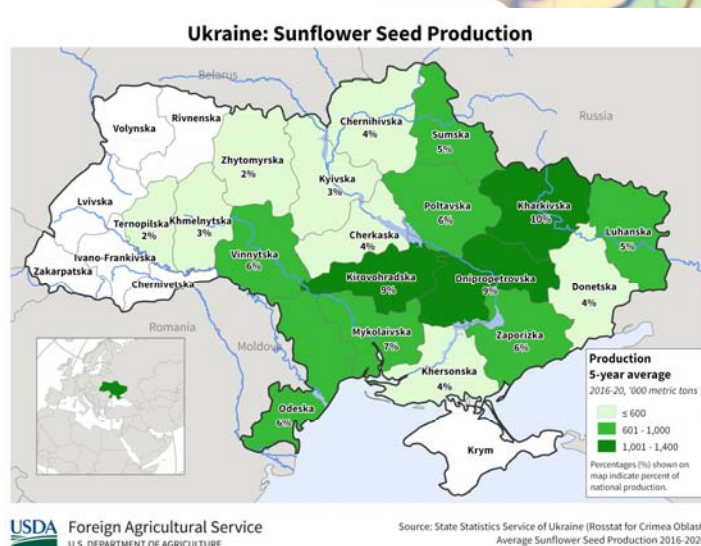
Sunflower Markets



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Ukraine Sunflower Seed Production



2020 Sunflower Summary

| Country | Russia | Ukraine |
|--------------------------|------------|------------|
| Production (tonnes) | 13,314,418 | 13,110,430 |
| % of Global Production | 26.5% | 26.1% |
| Exports Seed (tonnes) | 1,369,907 | 187,900 |
| Seed % of Global Exports | 19.7% | 2.7% |
| Exports Oil (tonnes) | 3,207,069 | 6,860,958 |
| Oil % of Global Exports | 20.5% | 44.0% |

Important Impacts of the Ukraine – Russia Federation Conflict

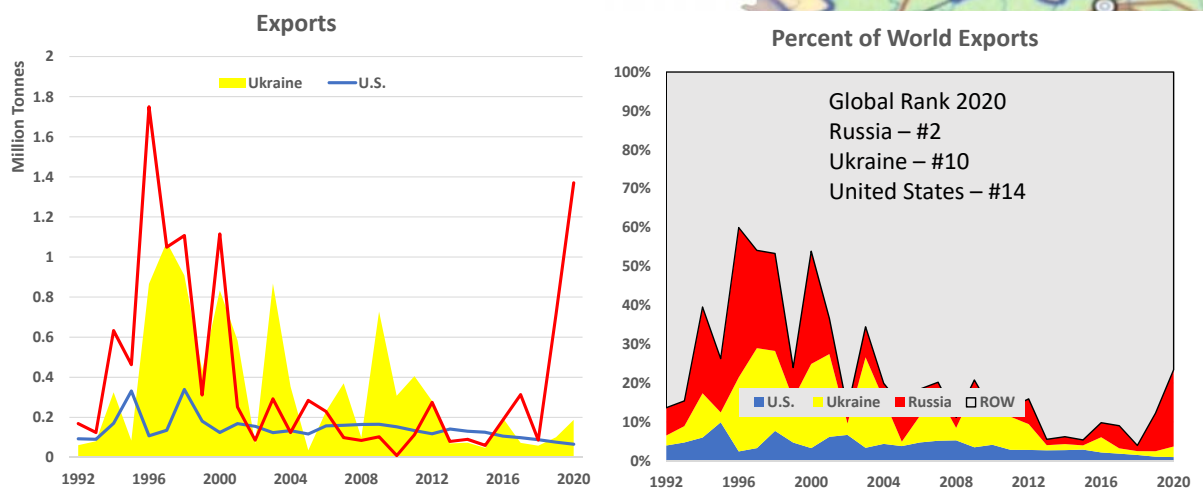
- Total Production – 52.6%
- Total Exports of Seed – 22.4%
- Total Exports of Oil – 64.5%

Major Importers of Oil Affected (2020 Exports)

- India – 2.4 million metric tonnes
- China – 2.0 million metric tonnes



Ukraine - Russian Sunflower Seed Exports



Ukraine – Destination of Sunflower Oil Exports

| Country (2020 Rank) | 2017 | 2018 | 2019 | 2020 |
|---------------------|-----------|-----------|-----------|-----------|
| India | 2,155,573 | 2,458,120 | 2,065,808 | 1,924,803 |
| China | 616,376 | 466,638 | 865,720 | 1,254,626 |
| Netherlands | 463,239 | 331,510 | 612,837 | 627,795 |
| Iraq | 110,875 | 361,840 | 0 | 455,450 |
| Spain | 575,111 | 325,028 | 429,072 | 443,053 |
| Italy | 350,350 | 322,262 | 381,990 | 366,756 |
| France | 117,917 | 110,163 | 138,512 | 155,559 |
| Poland | 69,128 | 56,298 | 72,720 | 141,344 |
| Egypt | 123,225 | 101,723 | 13,548 | 135,025 |
| U.K. | 107,273 | 104,984 | 99,619 | 113,774 |
| Rest of the World | 1,077,042 | 946,551 | 797,928 | 1,100,771 |



Ukraine Sunflower *Less 60% of Ukraine Crop in 2022/23* S-D Trends:

MY 2013/14 – “New” MY 2022/23 as of the April 8, 2022 USDA WASDE Report



World Sunflower *Less 60% of Ukraine Crop in 2022/23* S-D Trends:

MY 2013/14 – “New” MY 2022/23 as of the April 8, 2022 USDA WASDE Report



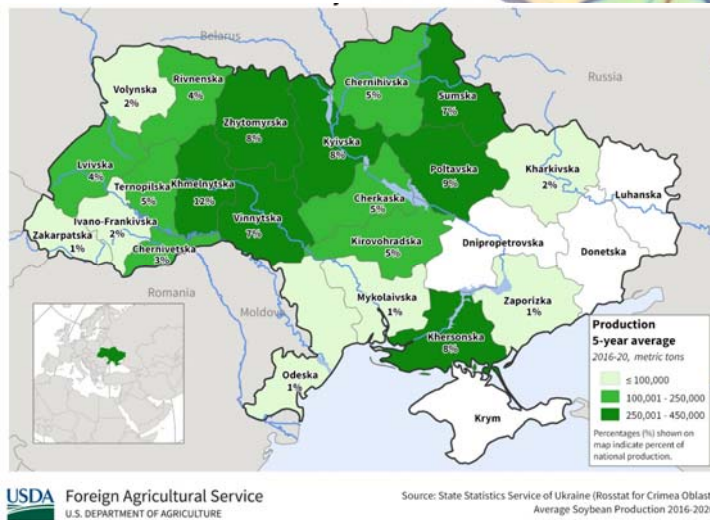
Soybean Markets



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Department of Agricultural Economics

Ukraine Soybean Production



USDA Foreign Agricultural Service
U.S. DEPARTMENT OF AGRICULTURE

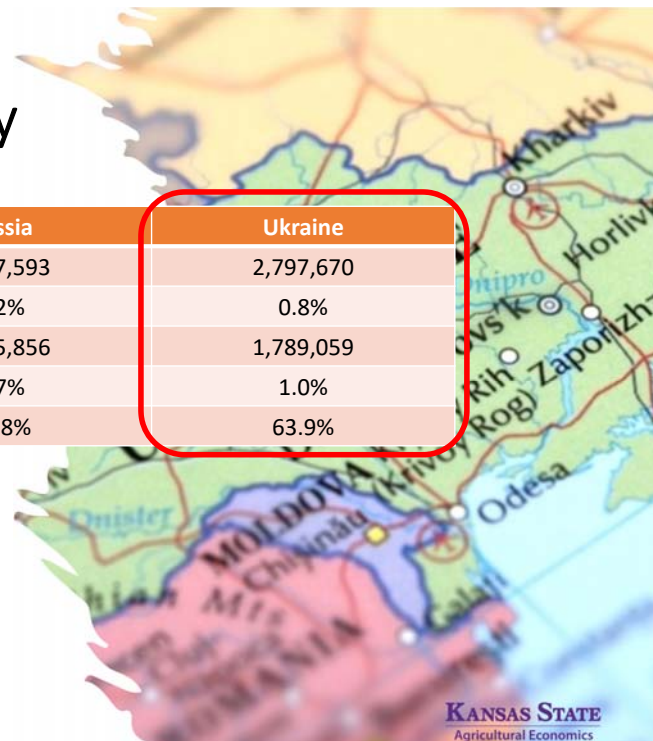
Source: State Statistics Service of Ukraine (Rosstat for Crimea Oblast)
Average Soybean Production 2016-2020



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2020 Soybean Summary

| Country | Russia | Ukraine |
|----------------------------|-----------|-----------|
| Production (tonnes) | 4,307,593 | 2,797,670 |
| % of Global Production | 1.2% | 0.8% |
| Exports (tonnes) | 1,195,856 | 1,789,059 |
| % of Global Exports | 0.7% | 1.0% |
| Exports as % of Production | 27.8% | 63.9% |



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U.S. Soybeans Supply and Demand

| Item | 2020/2021 estimate | 2021/2022 forecast | Change from March 9 | Change from 2020/2021 |
|--------------------------------|--------------------|--------------------|---------------------|-----------------------|
| Planted area (million acres) | 83.4 | 87.2 | -- | 3.8 |
| Harvested area (million acres) | 82.6 | 86.3 | -- | 3.7 |
| Yield (bushels per acre) | 51.0 | 51.4 | -- | 0.3 |
| ----- Million bushels ----- | | | | |
| Beginning stocks | 525 | 257 | -- | -268 |
| Production | 4,216 | 4,435 | -- | 219 |
| Imports | 20 | 15 | -- | -5 |
| Total supply | 4,761 | 4,707 | -- | -53 |
| Crush | 2,141 | 2,215 | -- | 74 |
| Seed and Residual | 103 | 117 | ** | 15 |
| Domestic use | 2,243 | 2,332 | ** | 89 |
| Exports | 2,261 | 2,115 | 25 | -146 |
| Total use | 4,504 | 4,447 | 25 | -56 |
| Ending stocks | 257 | 260 | -25 | 3 |
| ----- Percent ----- | | | | |
| Stocks to use ratio | 5.7 | 5.8 | -0.6 | 0.1 |
| ----- Dollars per bushel ----- | | | | |
| Average market price | 10.80 | 13.25 | -- | 2.45 |

USDA Office of the Chief Economist
United States Department of Agriculture

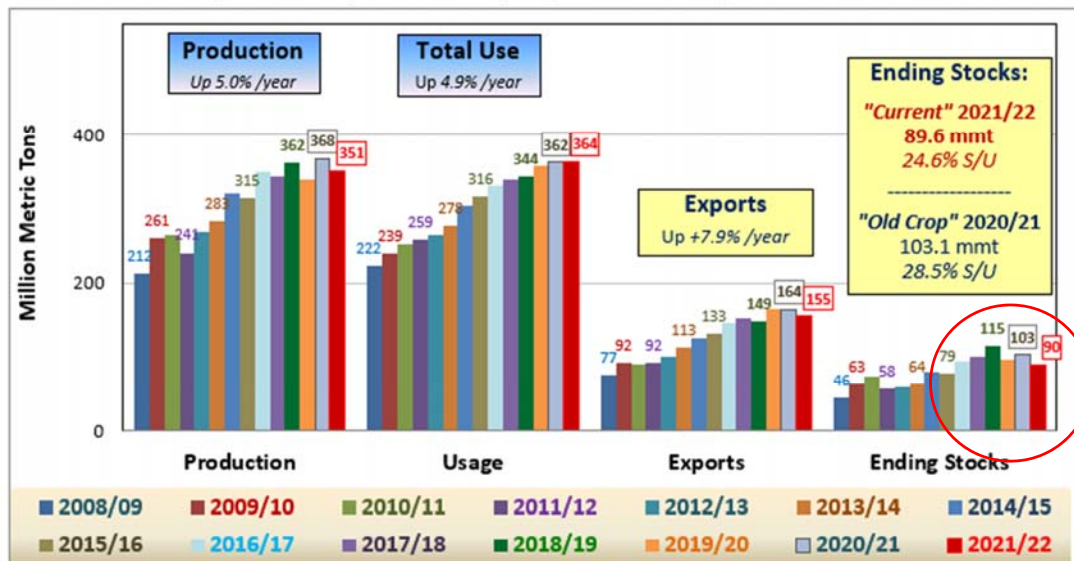


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World Soybean Supply and Use

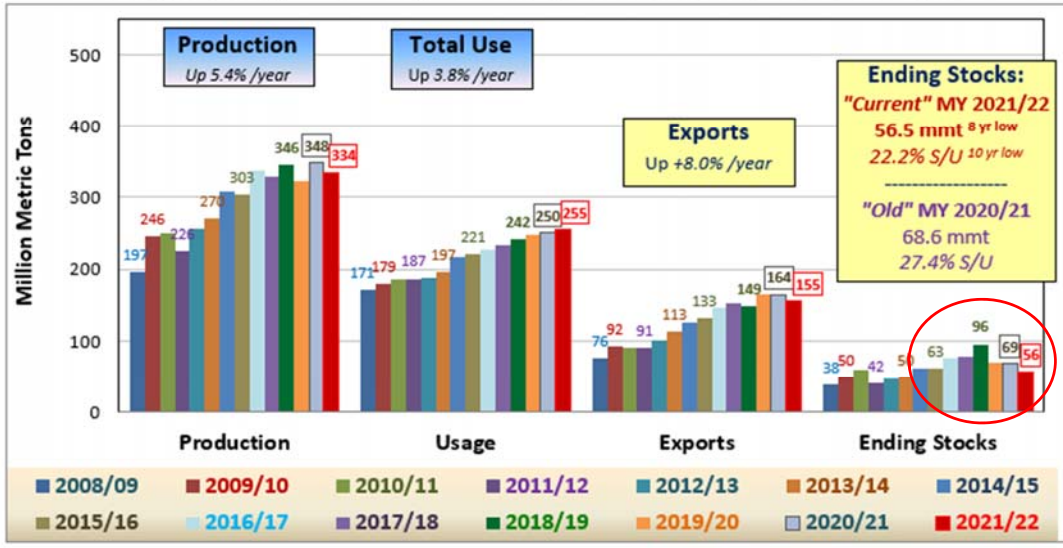
| Item | 2020/2021 estimate | 2021/2022 forecast | Change from March 9 | Change from 2020/2021 |
|--------------------------|--------------------|--------------------|---------------------|-----------------------|
| ----- Million Tons ----- | | | | |
| Beginning stocks | 96.8 | 103.1 | 1.4 | 6.3 |
| Production | 367.8 | 350.7 | -3.1 | -17.0 |
| Total Supply | 464.6 | 453.8 | -1.7 | -10.8 |
| Crush | 315.0 | 312.9 | -2.3 | -2.1 |
| Total use | 362.4 | 361.9 | -1.8 | -0.5 |
| Trade | 164.5 | 155.3 | -3.3 | -9.2 |
| Ending Stocks | 103.1 | 89.6 | -0.4 | -13.5 |
| Addendum | | | | |
| Beginning stocks | | | | |
| Argentina plus Brazil | 47.1 | 54.5 | 1.4 | 7.4 |
| Imports* | | | | |
| China | 99.8 | 91.0 | -3.0 | -8.8 |

World Soybean Usage & Ending Stocks: MY 2008/09 through "New Crop" MY 2021/22 as of the April 8, 2022 WASDE Report



"World Less-China" Soybean Usage & Ending Stocks:

MY 2008/09 through "New Crop" MY 2021/22 as of the April 8, 2022 WASDE Report



China Soybean Supply-Demand: MY 2007/08 – "New Crop" MY

2021/22 as of the March 9, 2022 USDA WASDE Report





Questions?

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