Crop Outlook & USDA/FSA Update

2021 MANAGE Meetings
August 11-13, 2021

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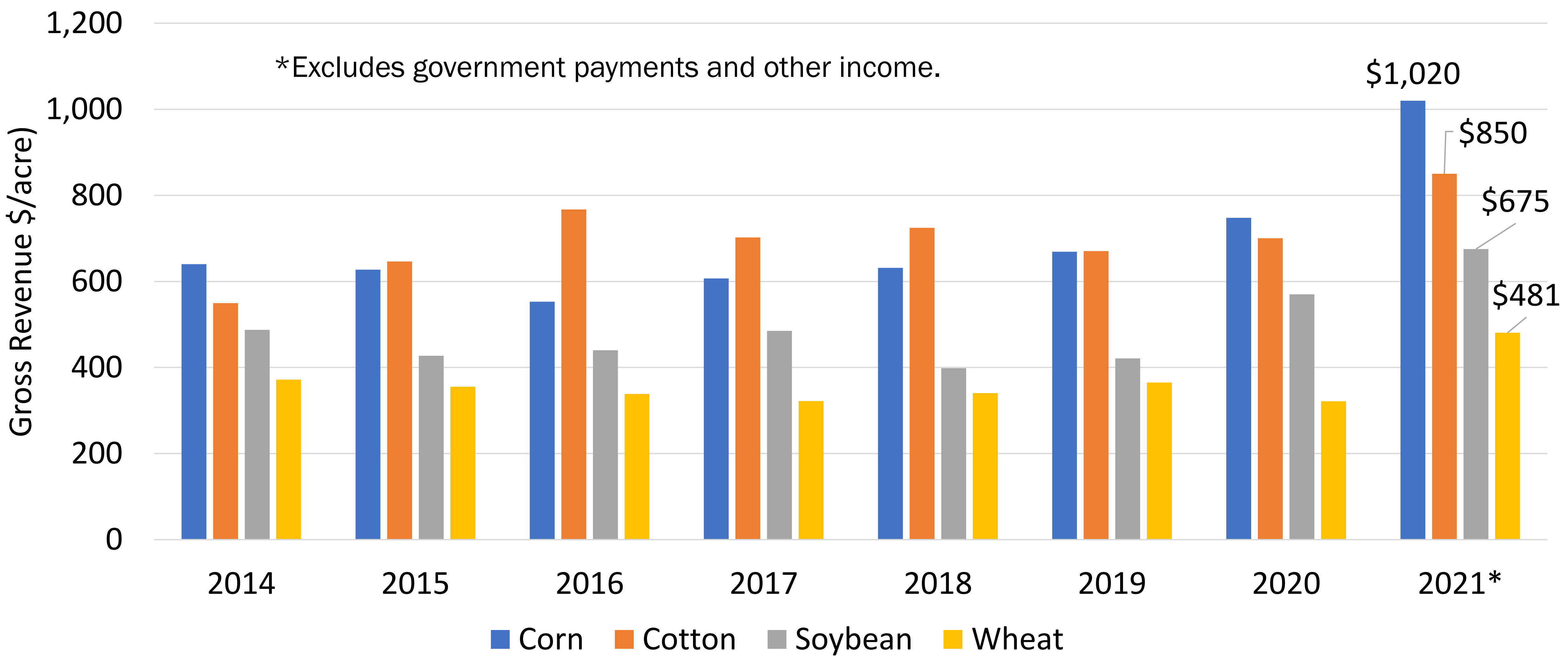
Average Tennessee Gross Revenue from Crop Sales, 2014-2021*



2021	Corn	Cotton	Soybean	Wheat
Yield	170	1000	50	74
Price	$6.00	$0.85	$13.50	$6.50

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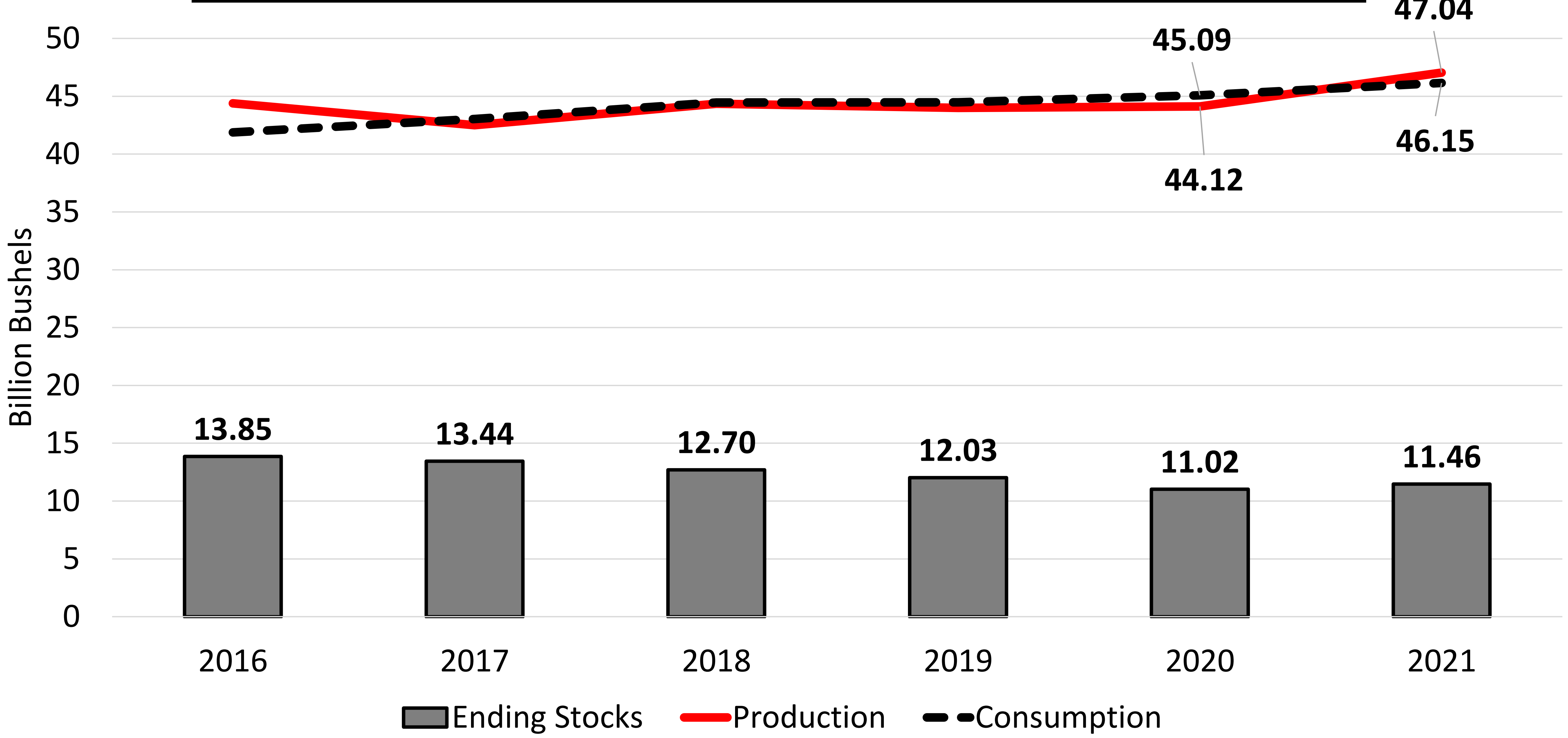
Supply, Demand, and Price Update

CORN OUTLOOK

Corn - Net Return Table ($/acre); $710/acre CoP

Price ($/bu)	Yield (bu/acre) 120	130	140	150	160	170	180	190	200	210	220
4.00	(230)	(190)	(150)	(110)	(70)	(30)	10	50	90	130	170
4.25	(200)	(158)	(115)	(73)	(30)	13	55	98	140	183	225
4.50	(170)	(125)	(80)	(35)	10	55	100	145	190	235	280
4.75	(140)	(93)	(45)	3	50	98	145	193	240	288	335
5.00	(110)	(60)	(10)	40	90	140	190	240	290	340	390
5.25	(80)	(28)	25	78	130	183	235	288	340	393	445
5.50	(50)	5	60	115	170	225	280	335	390	445	500
5.75	(20)	38	95	153	210	268	325	383	440	498	555
6.00	10	70	130	190	250	310	370	430	490	550	610
6.25	40	103	165	228	290	353	415	478	540	603	665
6.50	70	135	200	265	330	395	460	525	590	655	720
6.75	100	168	235	303	370	438	505	573	640	708	775
7.00	130	200	270	340	410	480	550	620	690	760	830
7.25	160	233	305	378	450	523	595	668	740	813	885
7.50	190	265	340	415	490	565	640	715	790	865	940
7.75	220	298	375	453	530	608	685	763	840	918	995

Global Corn Production, Consumption, and Ending Stocks, 2016-2021



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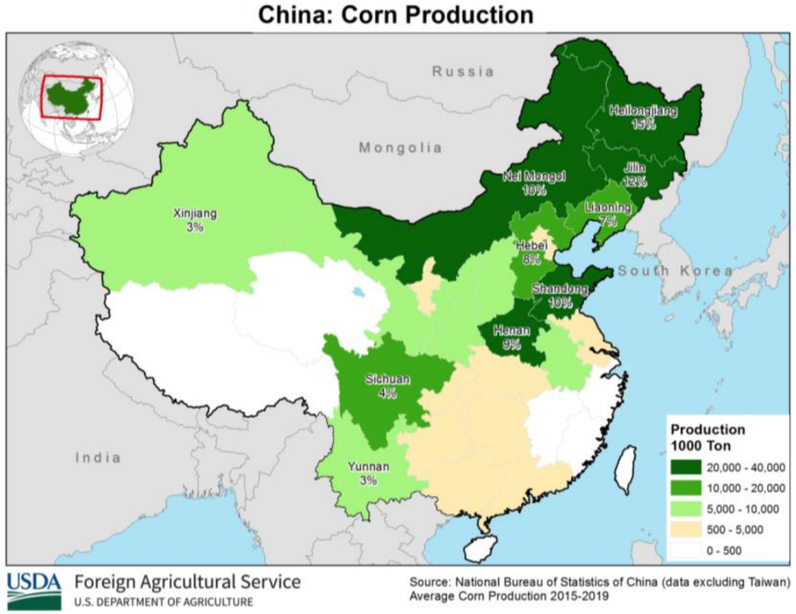
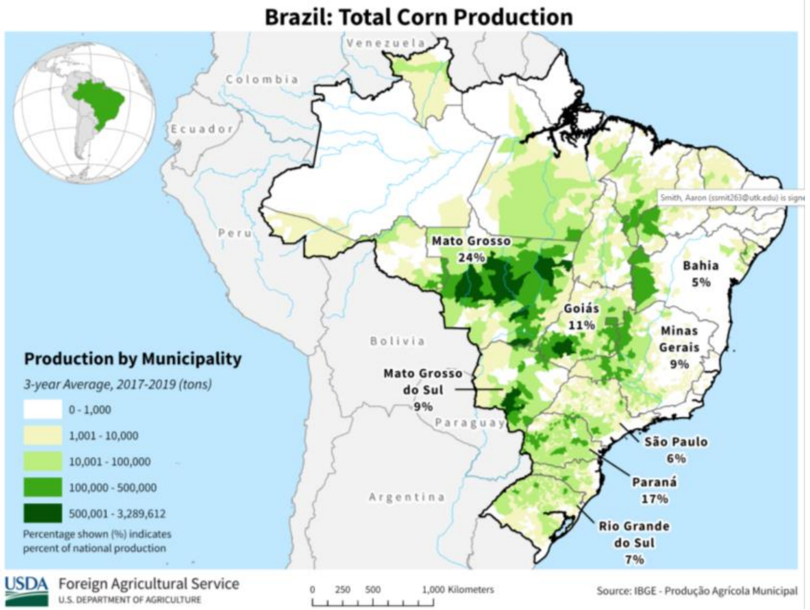
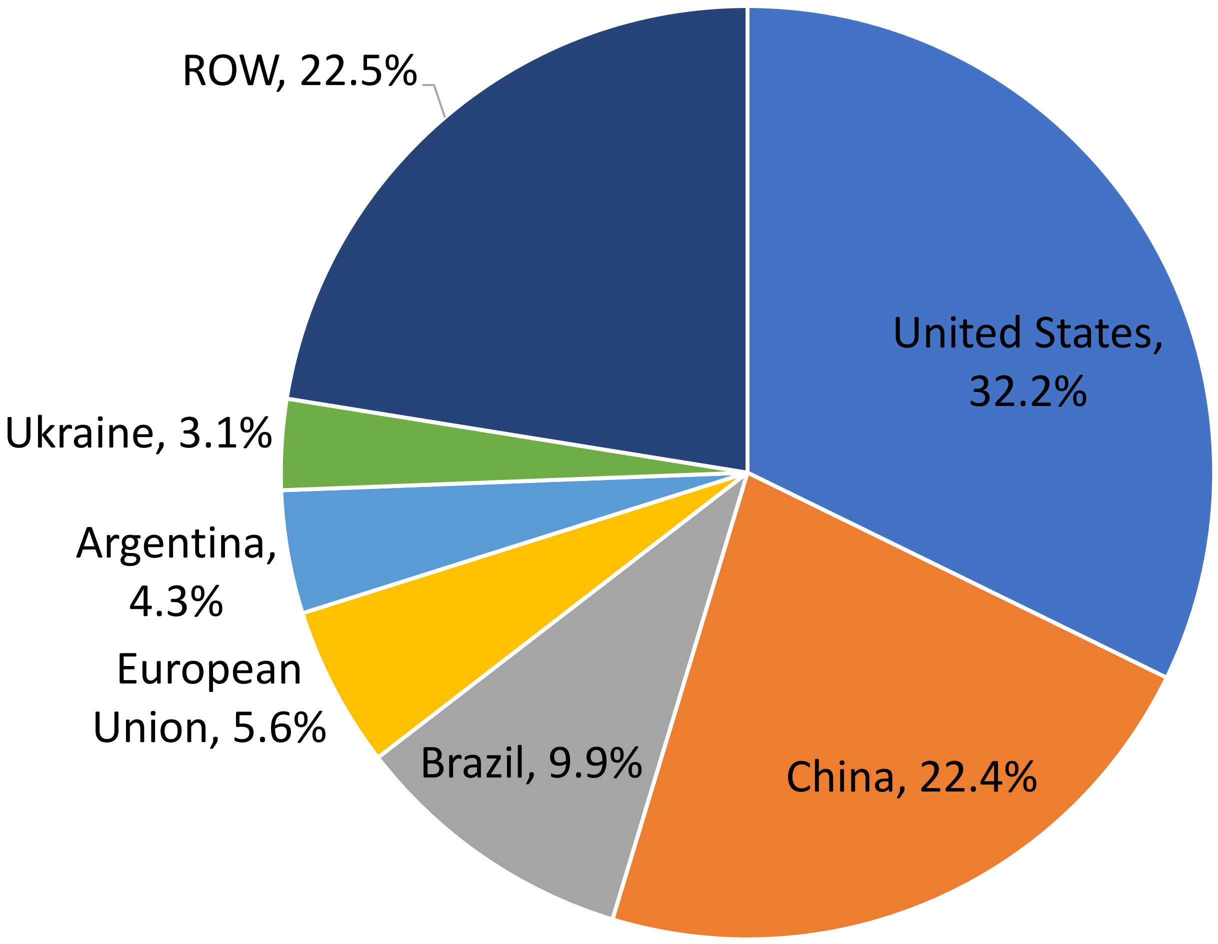
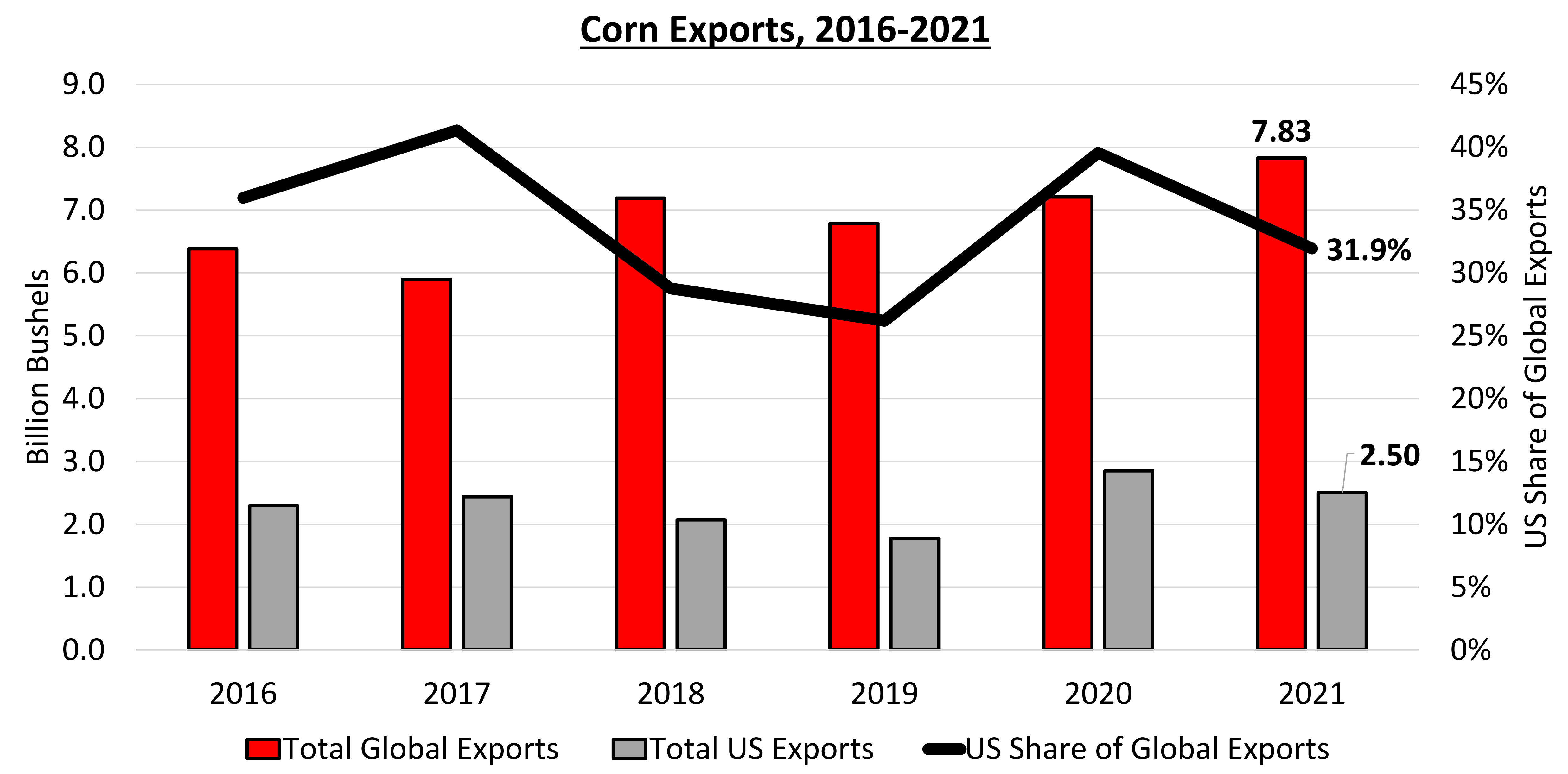




2021 Share of Global Corn Production





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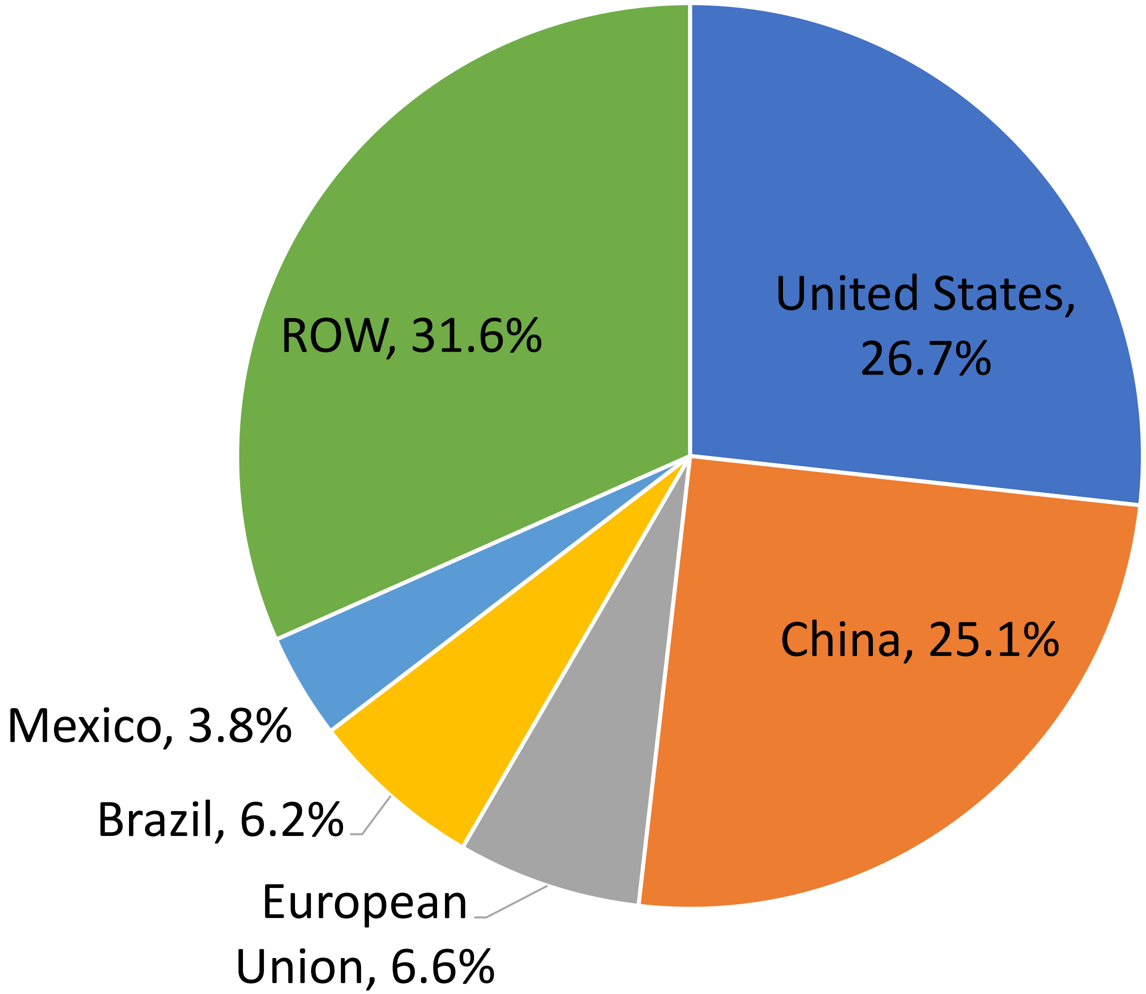
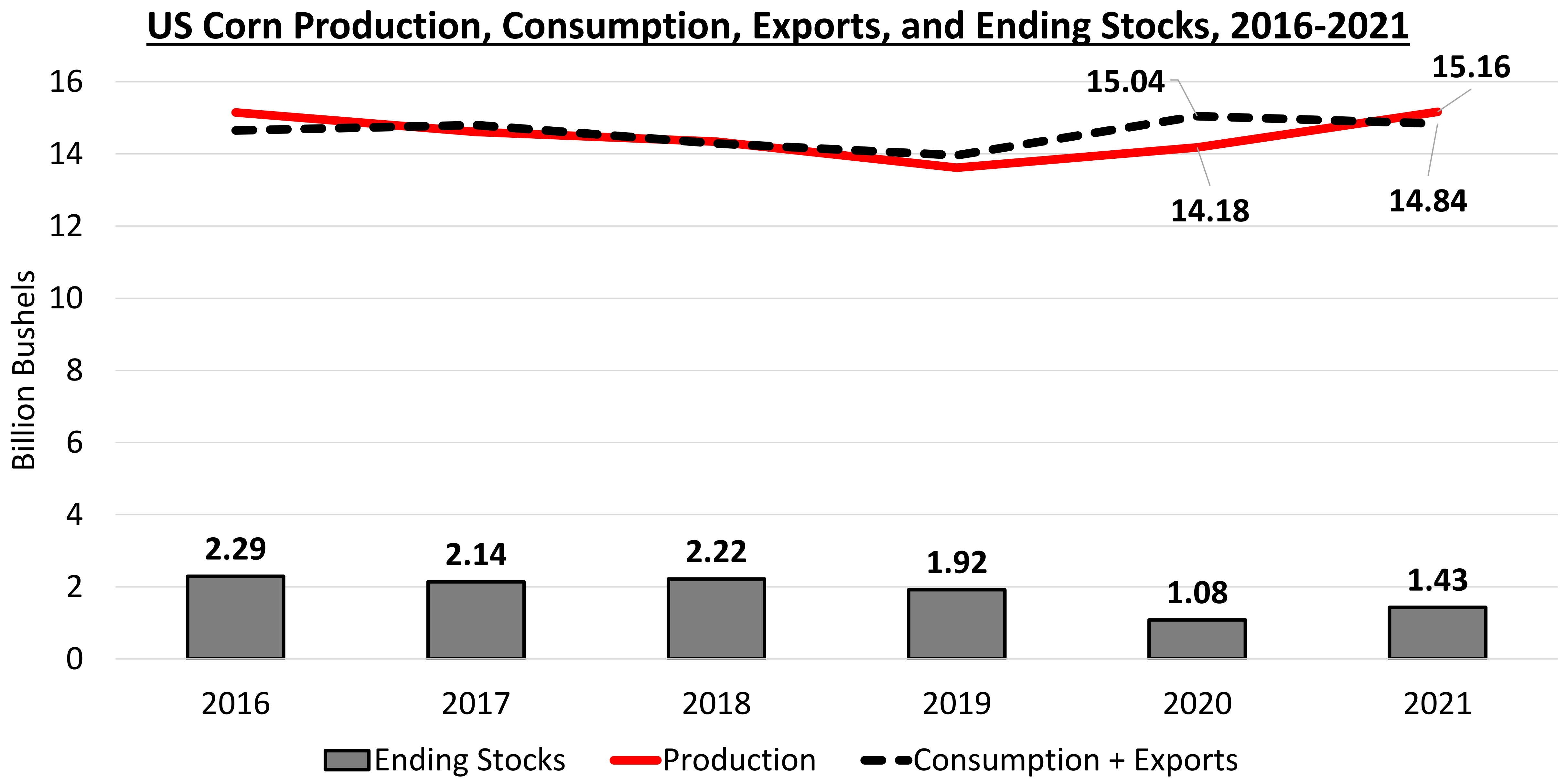
Corn Consumption by Country, 2021



Consumption does not include corn by-products.

Primary uses:

- Ethanol
- Animal feed
- Distilling
- Food, seed, and other industrial applications



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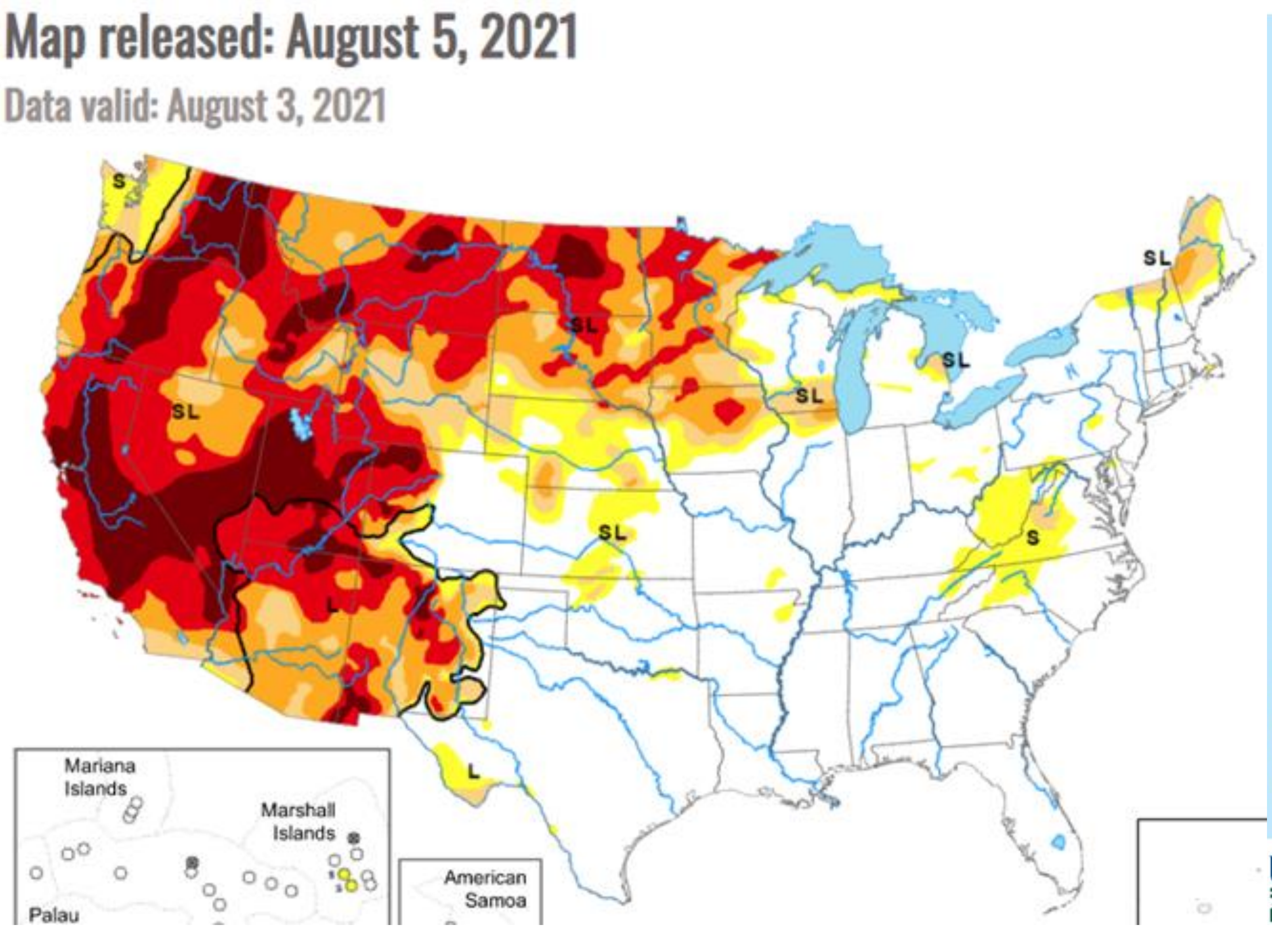

Map released: August 5, 2021
Data valid: August 3, 2021
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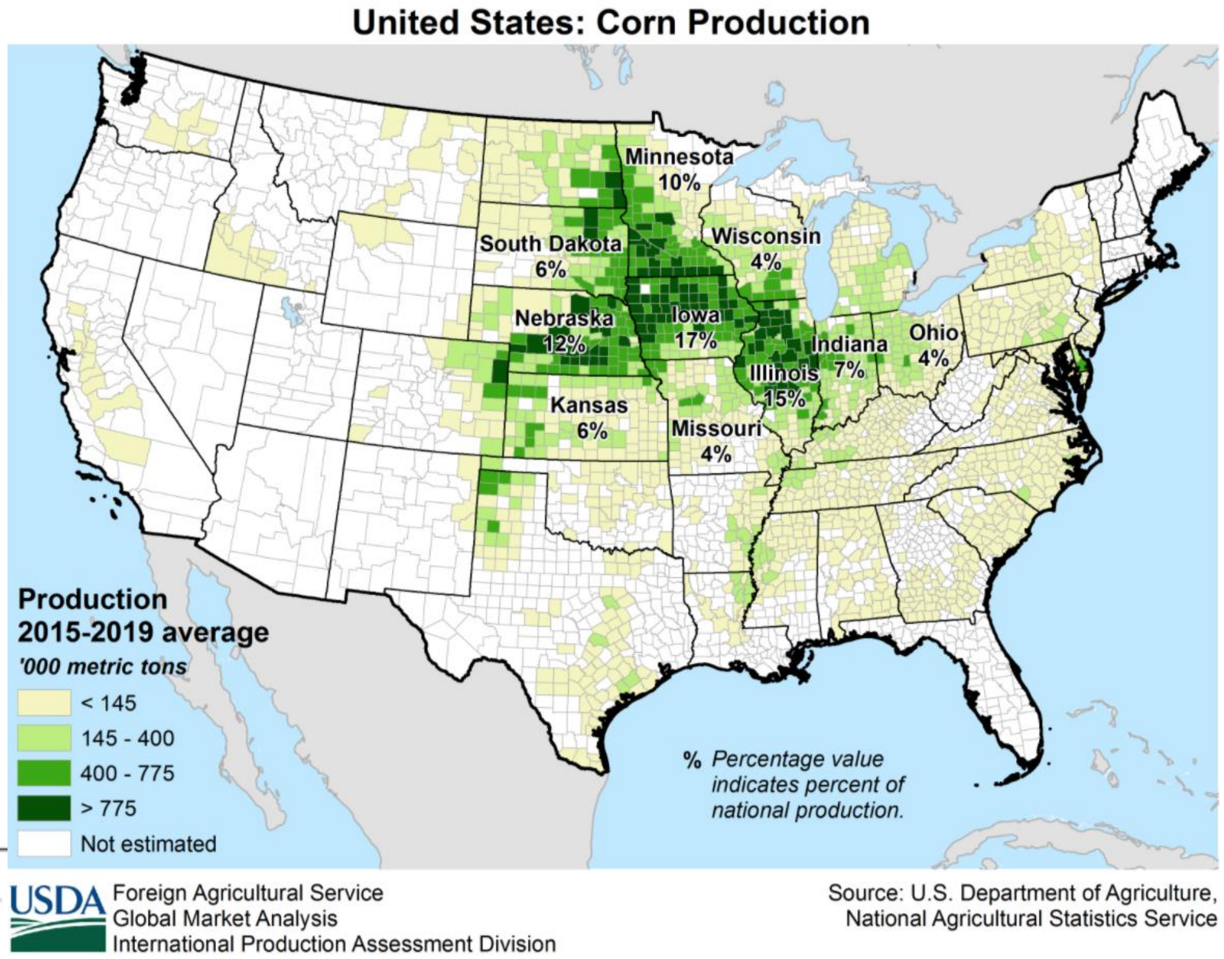
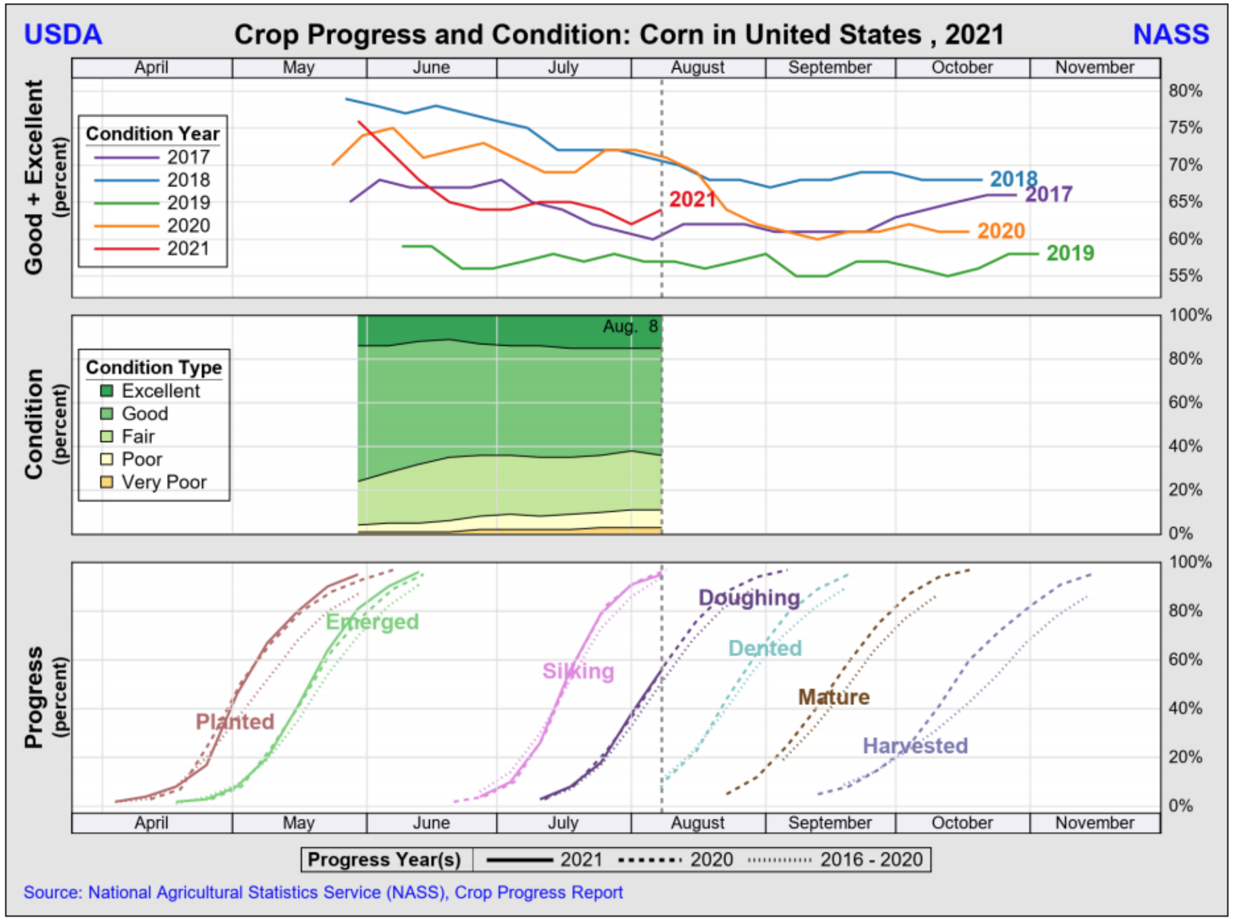
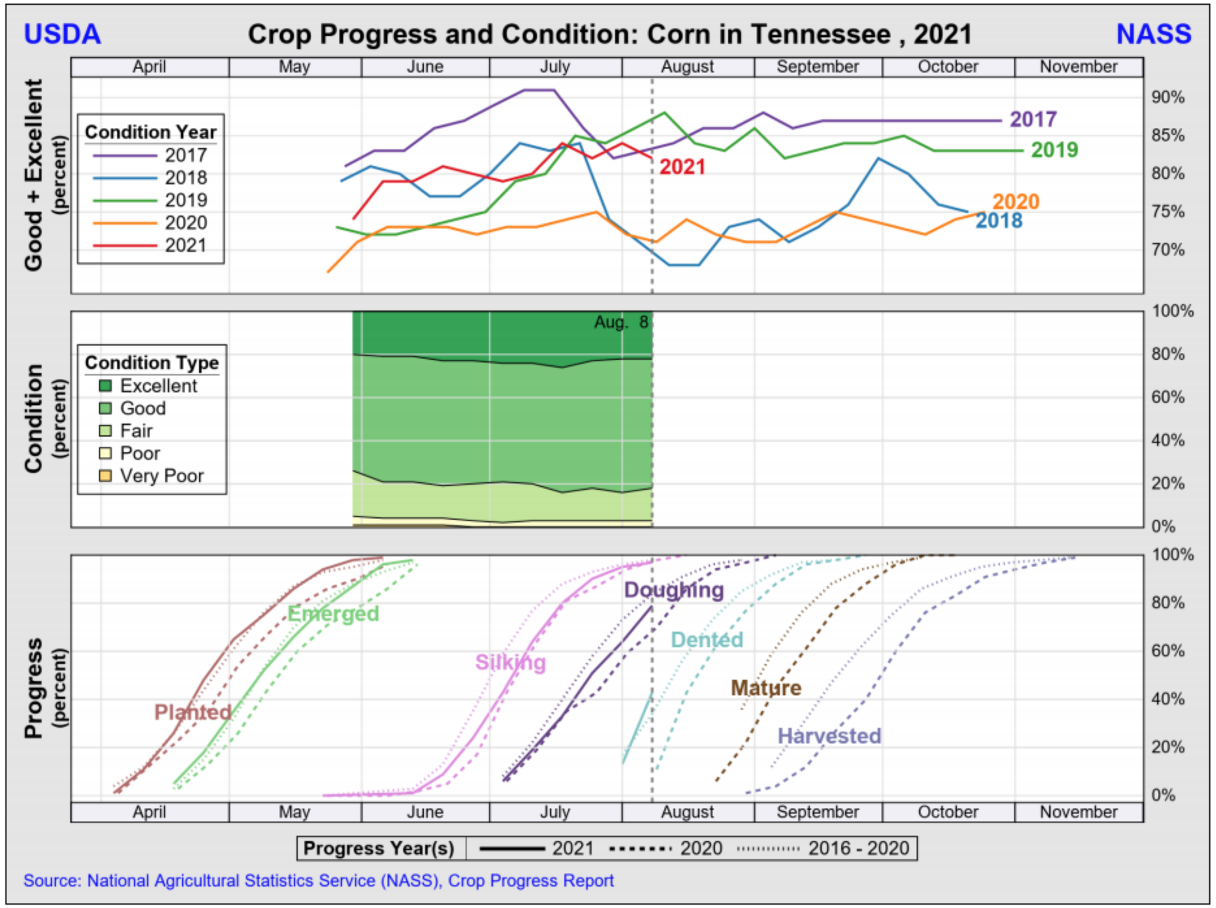
Mariana Islands
Marshall Islands
Palau
American Samoa



United States: Corn Production
Minnesota 10%
South Dakota 6%
Wisconsin 4%
Nebraska 12%
Iowa 17%
Indiana 7%
Ohio 4%
Illinois 15%
Kansas 6%
Missouri 4%
Production 2015-2019 average
'000 metric tons
< 145
145 - 400
400 - 775
> 775
Not estimated
% Percentage value indicates percent of national production.
USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division
Source: U.S. Department of Agriculture, National Agricultural Statistics Service


USDA
Crop Progress and Condition: Corn in United States , 2021
NASS
Good + Excellent (percent)
Condition Year
2017
2018
2019
2020
2021
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Aug. 8
Progress (percent)
Planted
Emerged
Silking
Doughing
Dented
Mature
Harvested
April
May
June
July
August
September
October
November
Progress Year(s)
2021
2020
2016 - 2020
Source: National Agricultural Statistics Service (NASS), Crop Progress Report


USDA
Crop Progress and Condition: Corn in Tennessee , 2021
NASS
Good + Excellent (percent)
Condition Year
2017
2018
2019
2020
2021
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Aug. 8
Progress (percent)
Planted
Emerged
Silking
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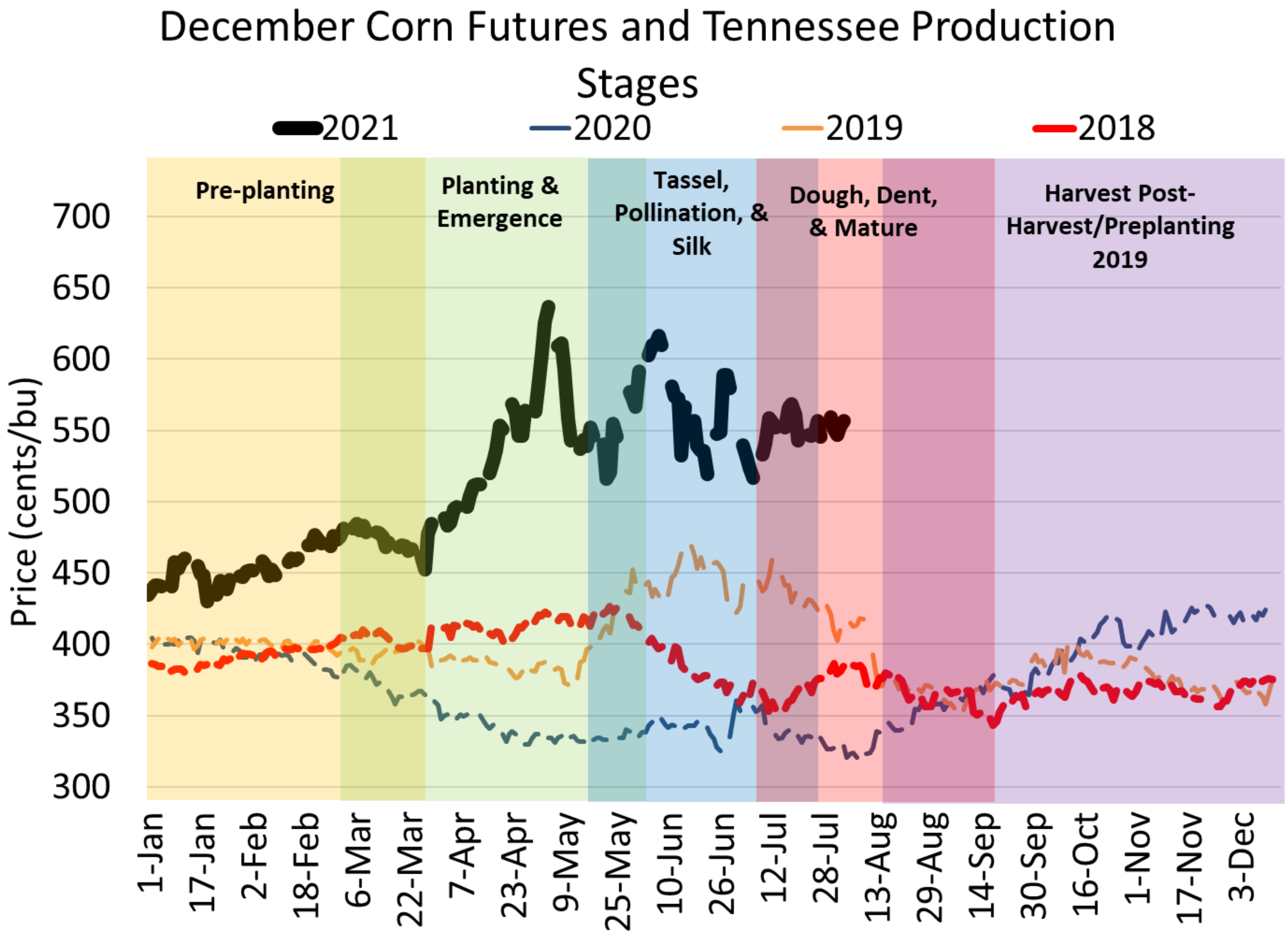
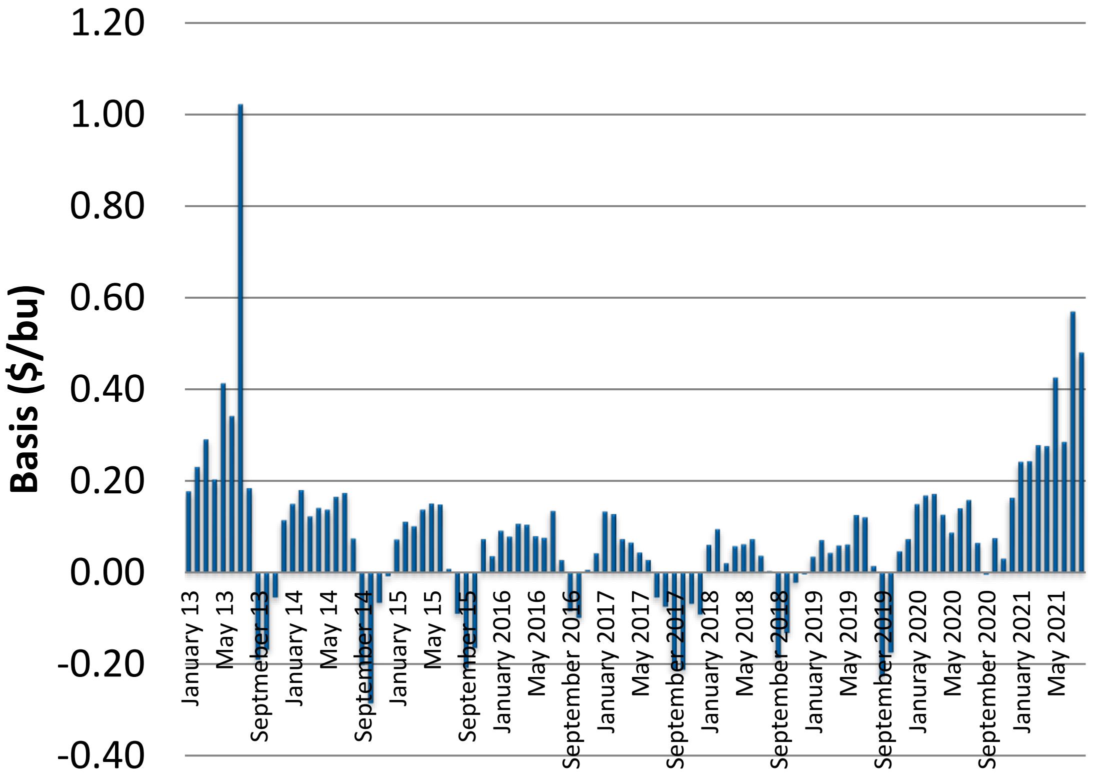
Source: National Agricultural Statistics Service (NASS), Crop Progress Report

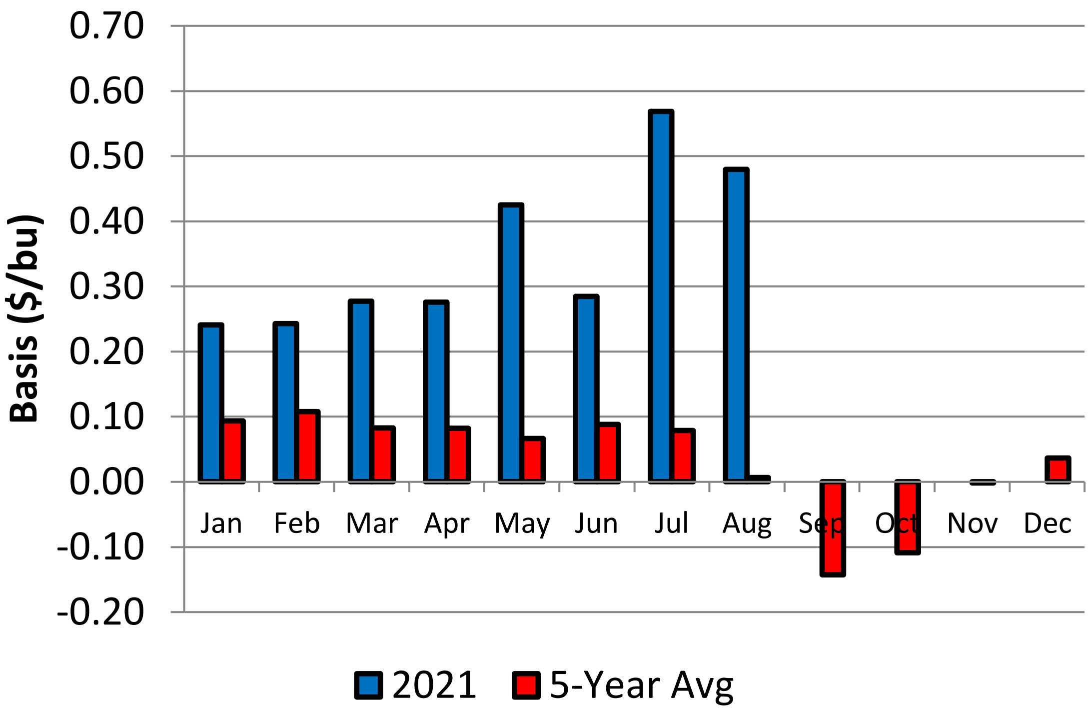


- 2020 prices rallied starting mid august and carried through into 2021. Fueled by China purchases the derecho and flash drought.
- 2021 prices have been strongly influenced by drought, US export sales pace, and frost in Brazil.
- Volatility in markets April-July 2021.

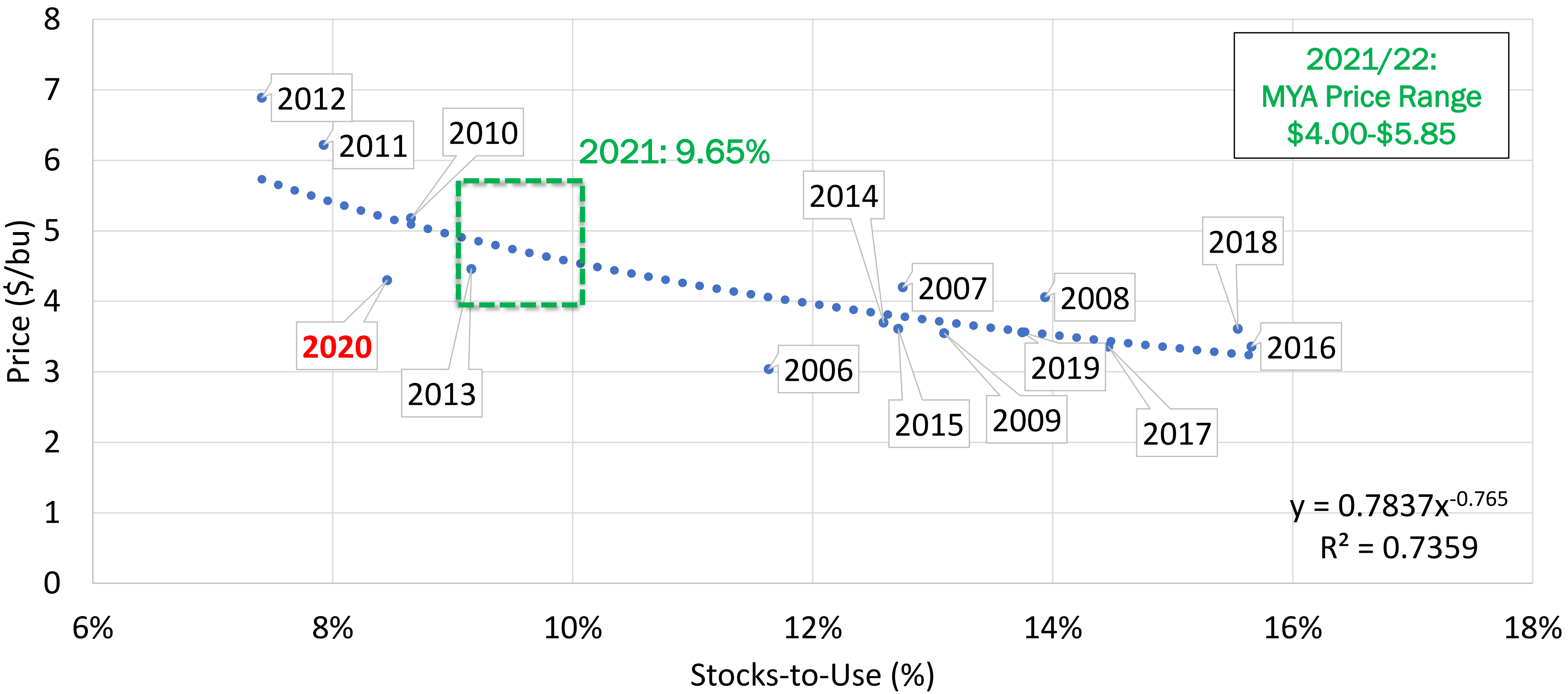
Tennessee Average Monthly Corn Basis (Elevators and Barge Points), 2013-2021



Tennessee Average Monthly Corn Basis (Elevators and Barge Points), 5-Year Average (2016-2020) and 2021



Corn: U.S. Stocks-to-Use to MYA Price, 2006-2020



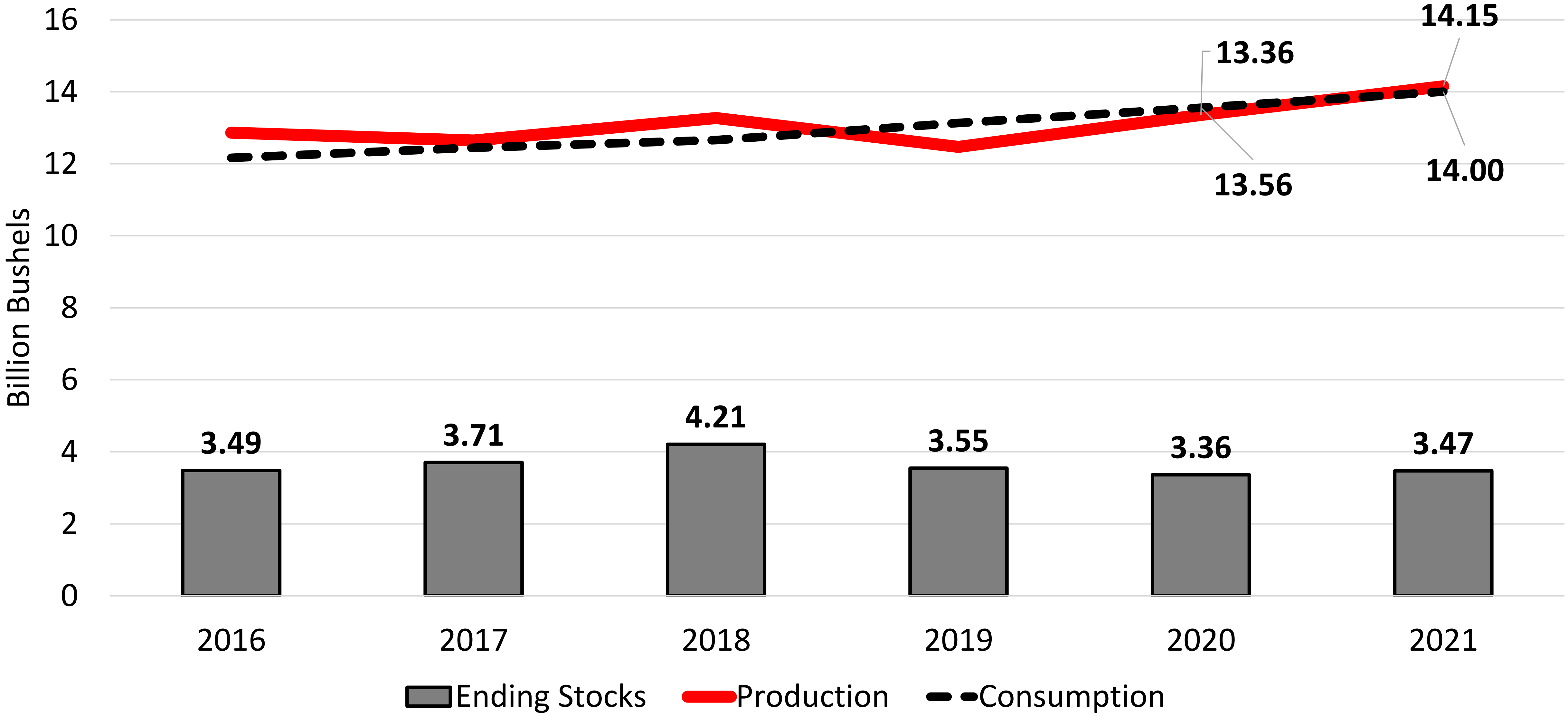
Supply, Demand, and Price Update

SOYBEAN OUTLOOK

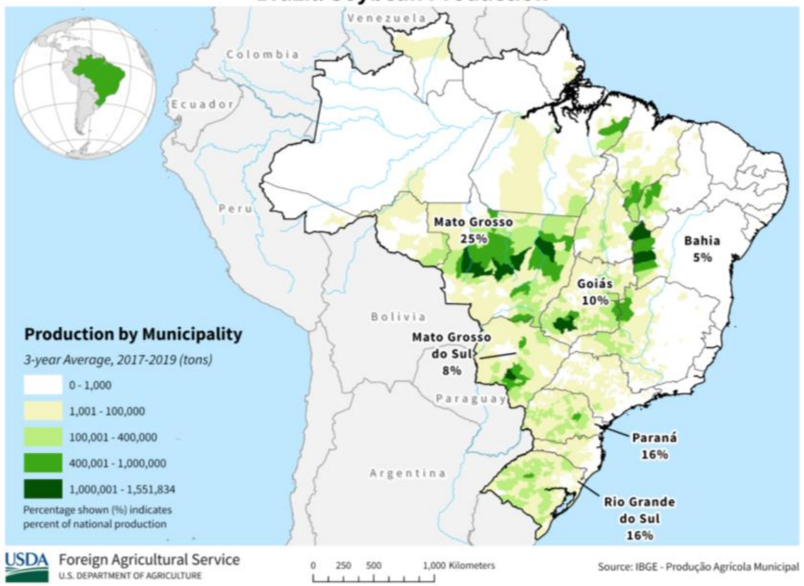
Soybean - Net Return Table ($/acre); $580/acre CoP

		Yield (bu/acre)										
		25	30	35	40	45	50	55	60	65	70	75
Price ($/bu)	11.00	(305)	(250)	(195)	(140)	(85)	(30)	25	80	135	190	245
	11.25	(299)	(243)	(186)	(130)	(74)	(18)	39	95	151	208	264
	11.50	(293)	(235)	(178)	(120)	(63)	(5)	53	110	168	225	283
	11.75	(286)	(228)	(169)	(110)	(51)	8	66	125	184	243	301
	12.00	(280)	(220)	(160)	(100)	(40)	20	80	140	200	260	320
	12.25	(274)	(213)	(151)	(90)	(29)	33	94	155	216	278	339
	12.50	(268)	(205)	(143)	(80)	(18)	45	108	170	233	295	358
	12.75	(261)	(198)	(134)	(70)	(6)	58	121	185	249	313	376
	13.00	(255)	(190)	(125)	(60)	5	70	135	200	265	330	395
	13.25	(249)	(183)	(116)	(50)	16	83	149	215	281	348	414
	13.50	(243)	(175)	(108)	(40)	28	95	163	230	298	365	433
	13.75	(236)	(168)	(99)	(30)	39	108	176	245	314	383	451
	14.00	(230)	(160)	(90)	(20)	50	120	190	260	330	400	470
	14.25	(224)	(153)	(81)	(10)	61	133	204	275	346	418	489
	14.50	(218)	(145)	(73)	0	73	145	218	290	363	435	508
	14.75	(211)	(138)	(64)	10	84	158	231	305	379	453	526

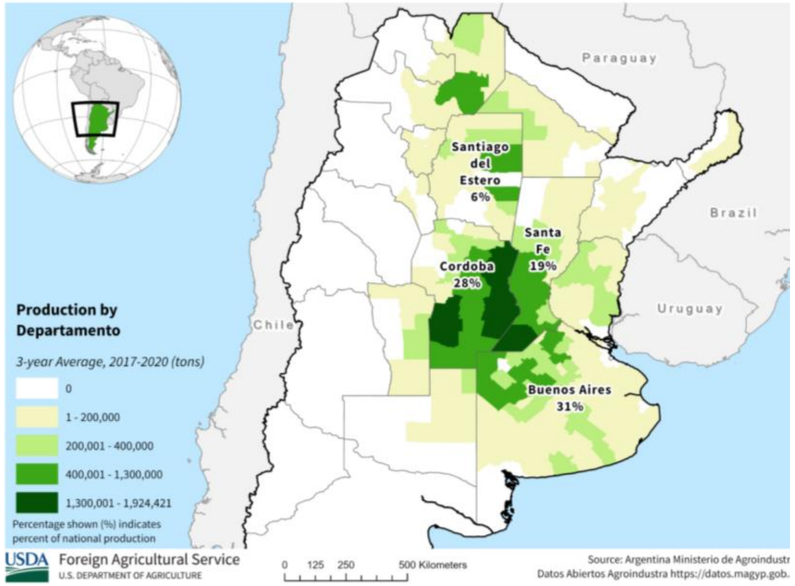
Global Soybean Production, Consumption, and Ending Stocks, 2016-2021



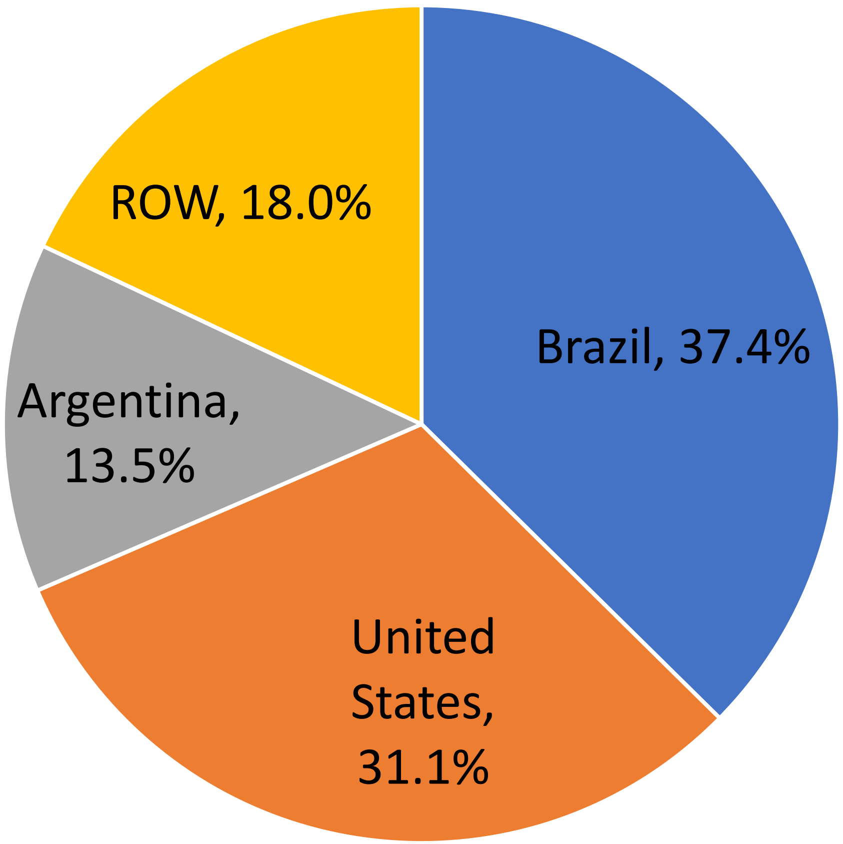
Brazil: Soybean Production



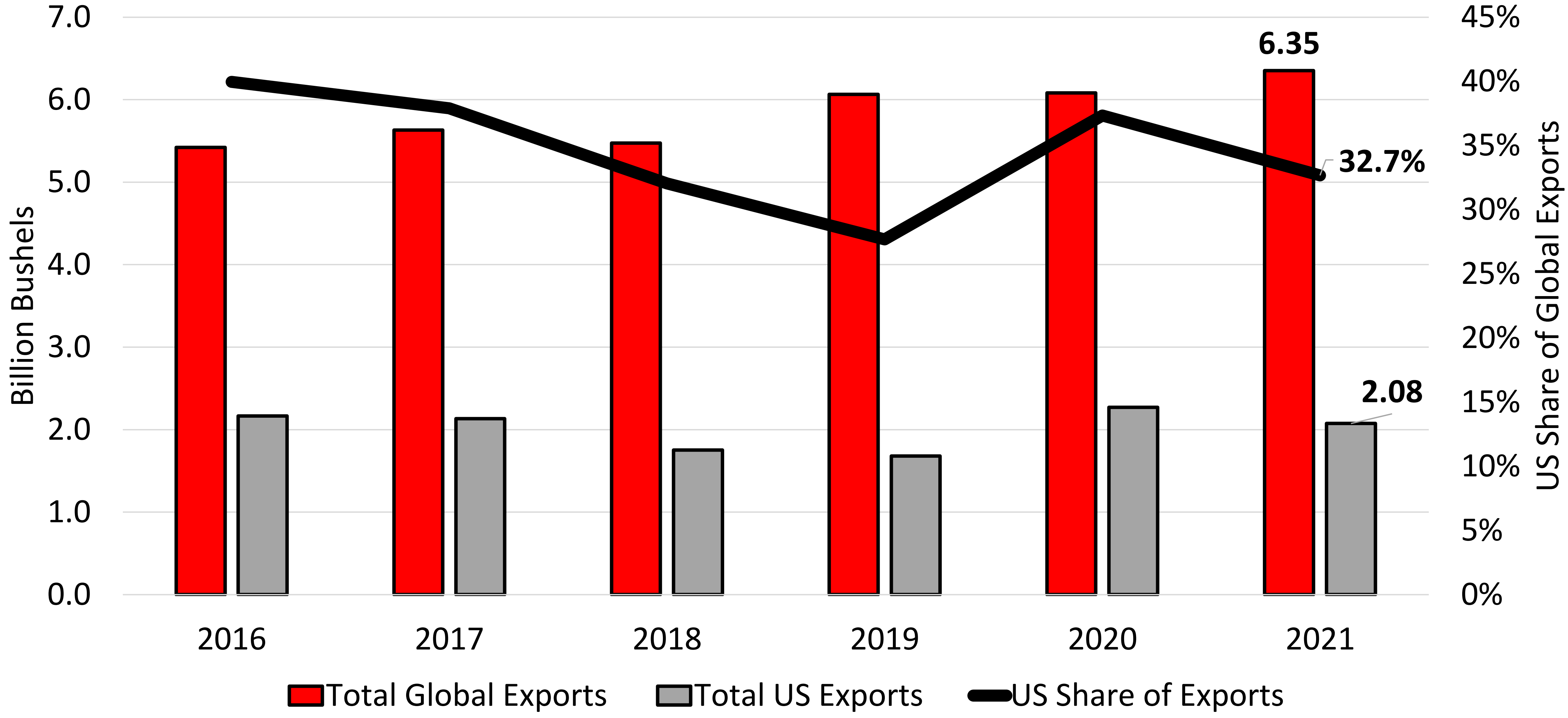
Argentina: Soybean Production



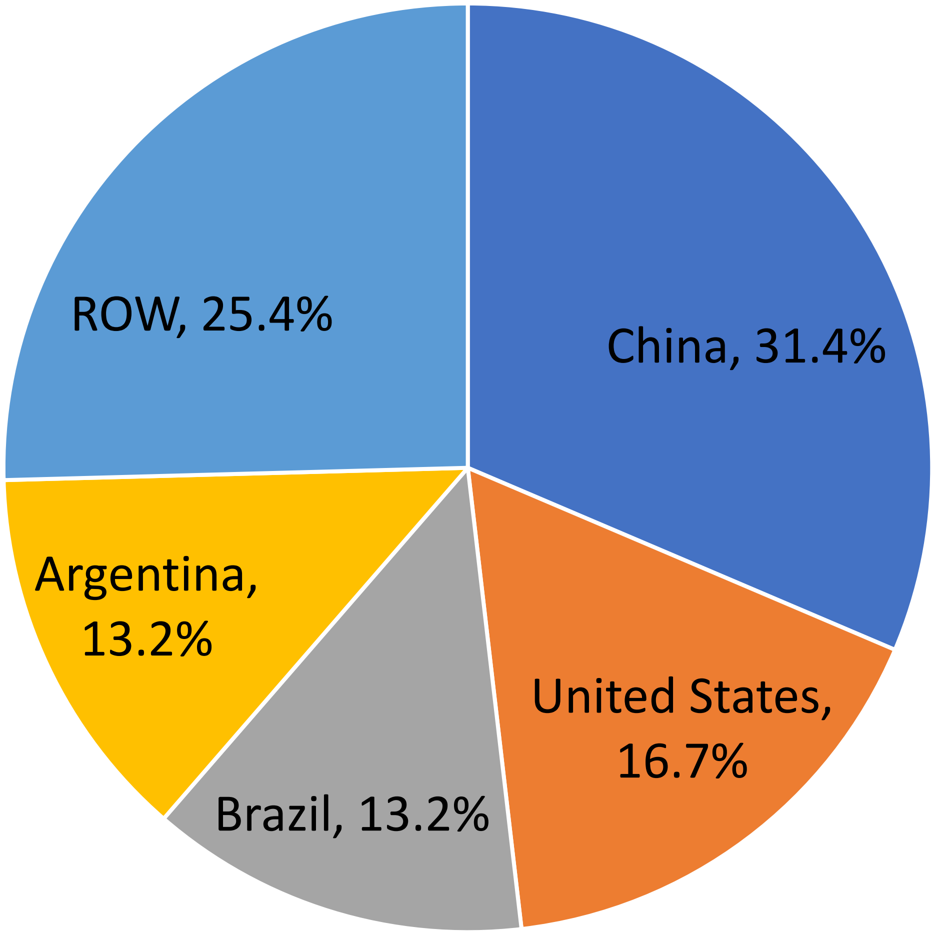
2021 Share of Global Soybean Production



Soybean Exports, 2016-2021

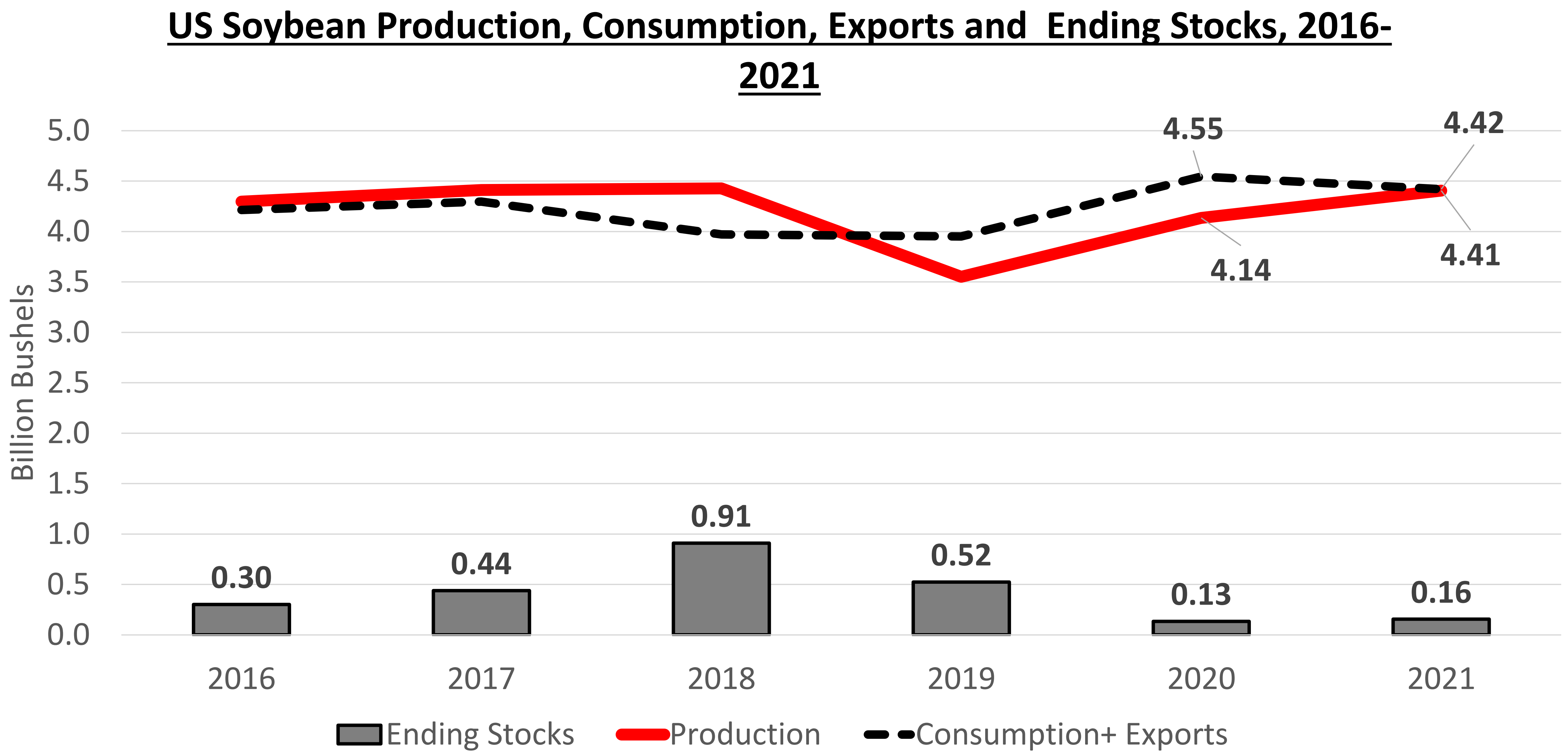


Global Soybean Consumption, 2021



Consumption does not include soybean by-products.

Argentina crushes most of its soybeans and exports meal and oil, rather than raw soybeans.



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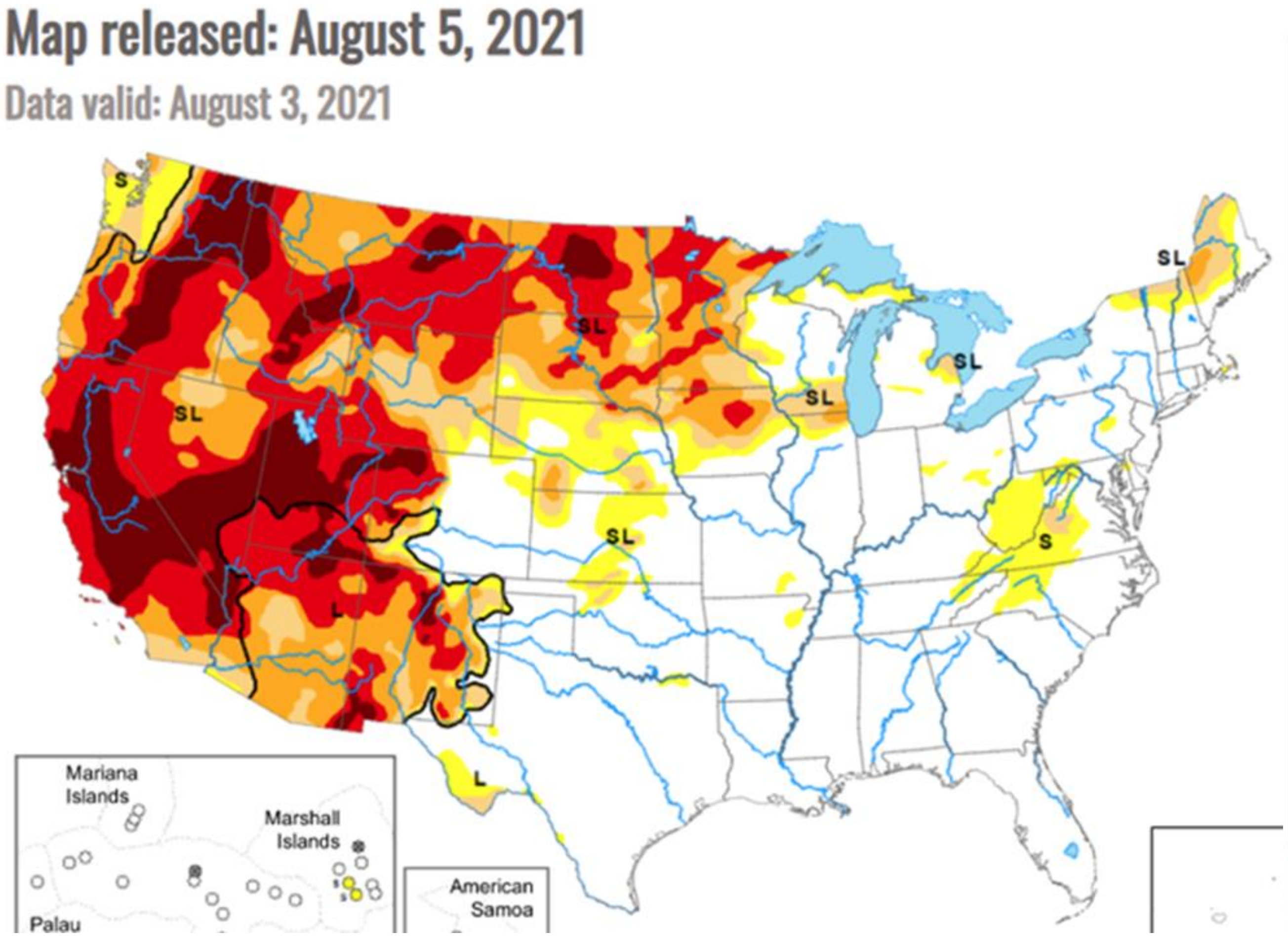

Map released: August 5, 2021
Data valid: August 3, 2021
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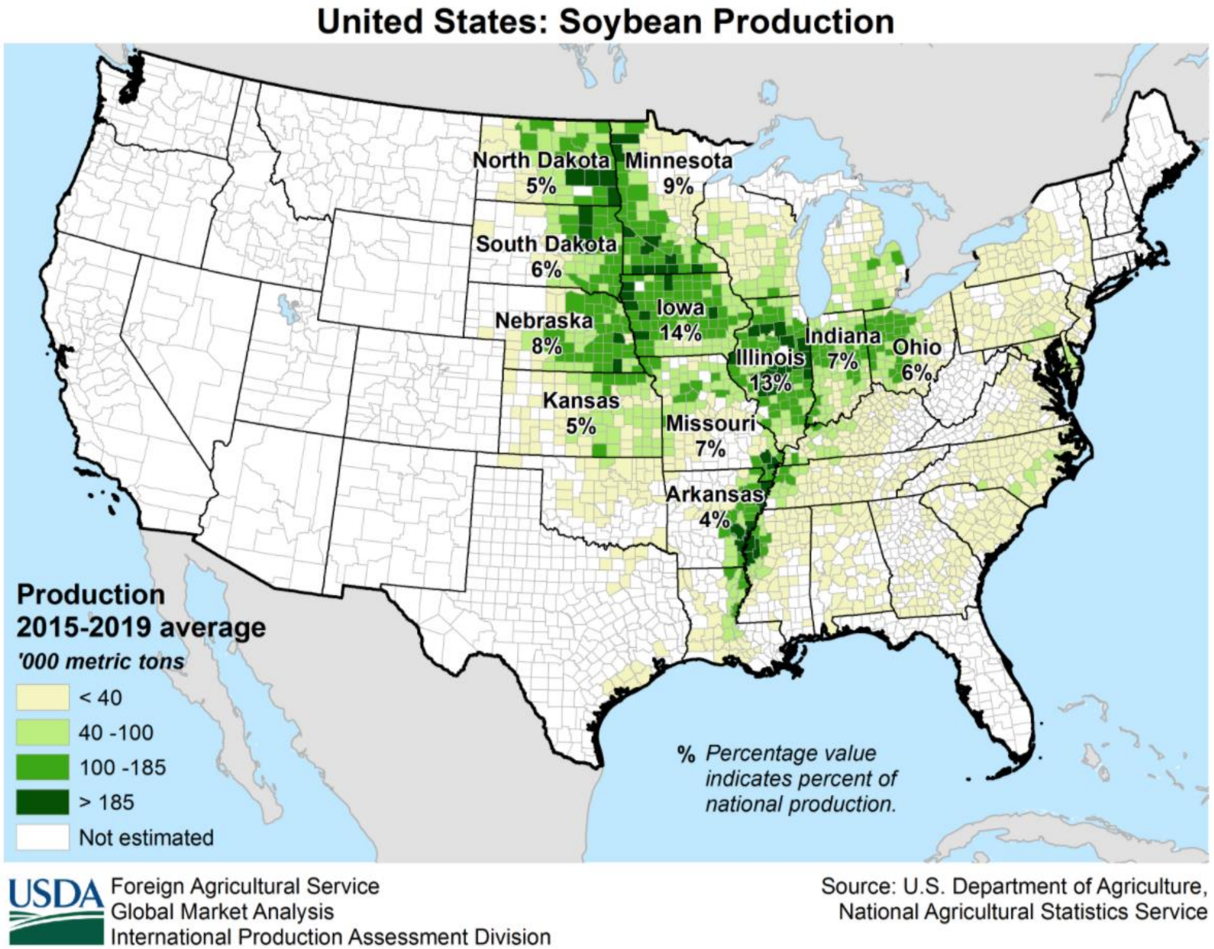
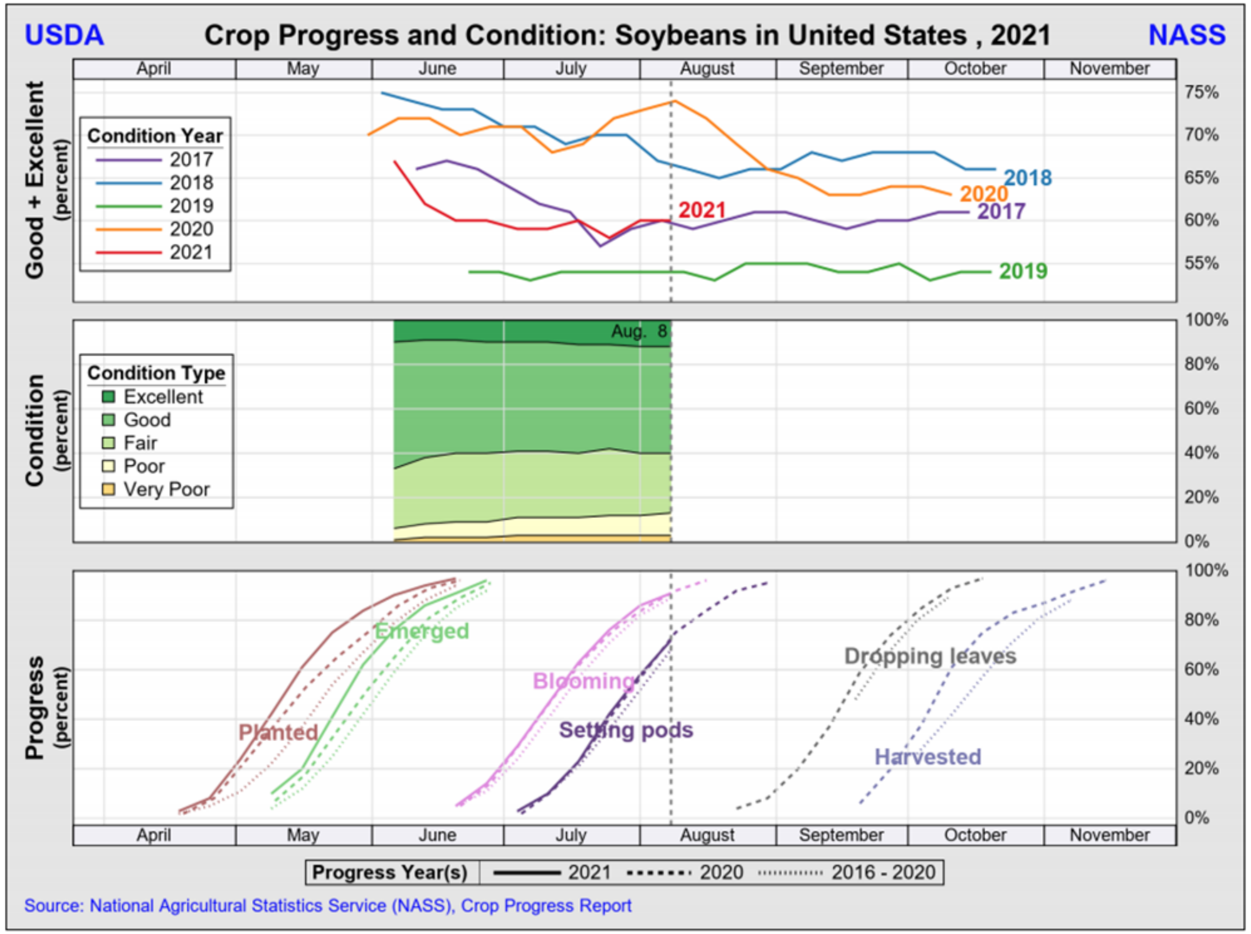
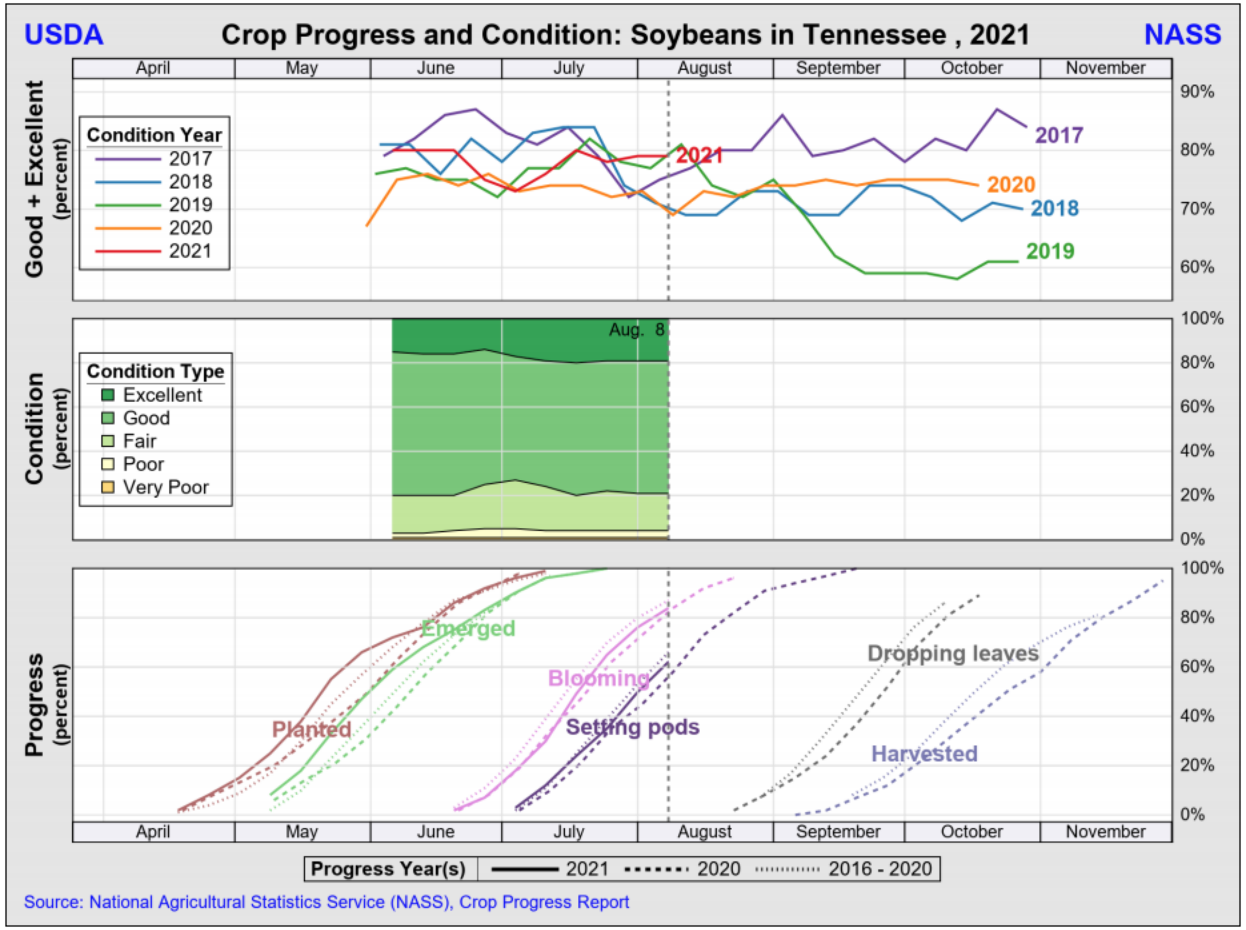
Mariana Islands
Marshall Islands
Palau
American Samoa



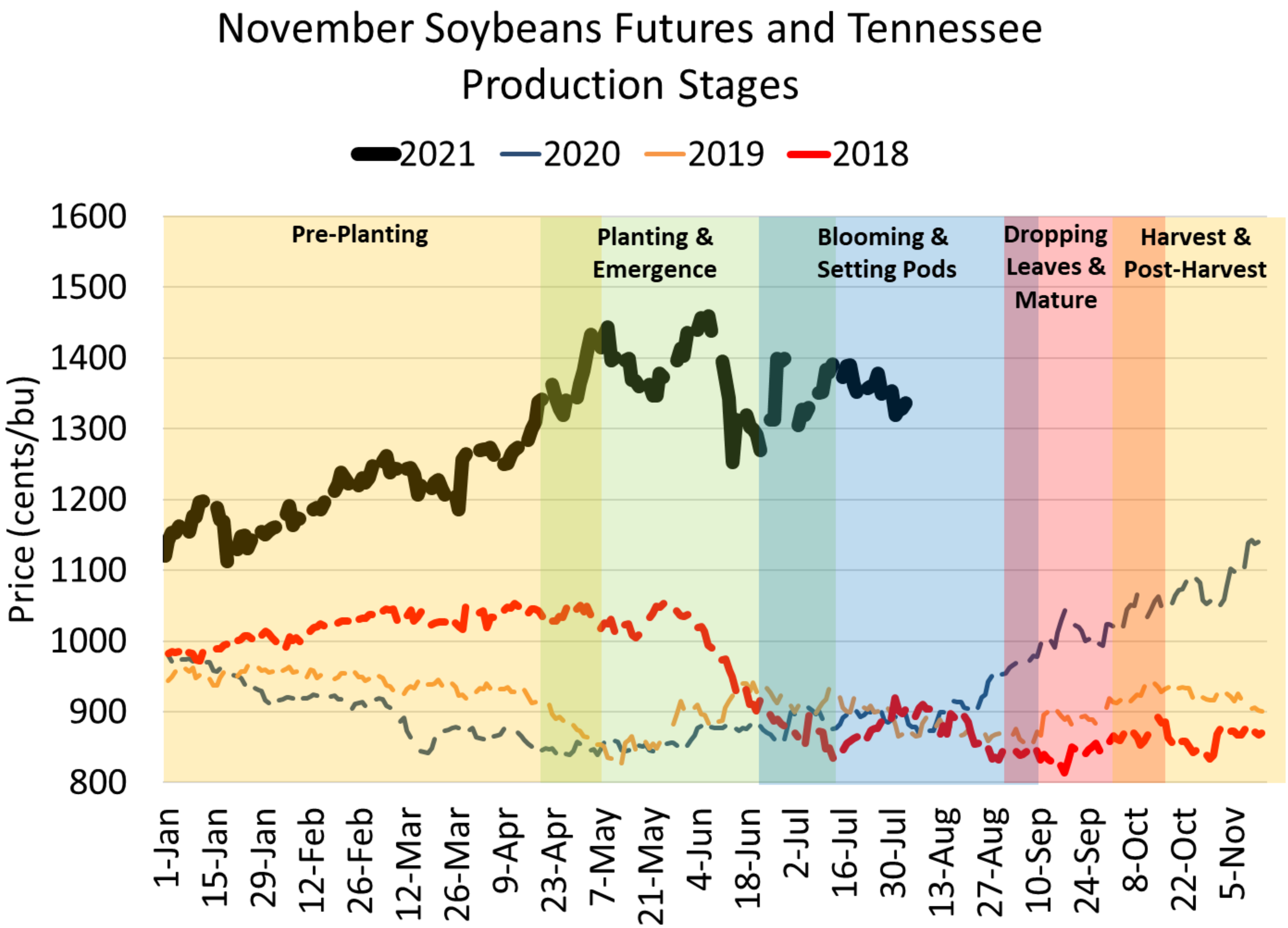
United States: Soybean Production
North Dakota 5%
Minnesota 9%
South Dakota 6%
Iowa 14%
Nebraska 8%
Illinois 13%
Indiana 7%
Ohio 6%
Kansas 5%
Missouri 7%
Arkansas 4%
Production 2015-2019 average
'000 metric tons
< 40
40 -100
100 -185
> 185
Not estimated
% Percentage value indicates percent of national production.
USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division
Source: U.S. Department of Agriculture, National Agricultural Statistics Service



USDA
Crop Progress and Condition: Soybeans in United States , 2021
NASS
April May June July August September October November
Good + Excellent (percent)
Condition Year
2017
2018
2019
2020
2021
75%
70%
65%
60%
55%
2018
2020
2021
2017
2019
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Aug. 8
100%
80%
60%
40%
20%
0%
Progress (percent)
Planted
Emerged
Blooming
Setting pods
Dropping leaves
Harvested
Progress Year(s)
2021
2020
2016 - 2020
Source: National Agricultural Statistics Service (NASS), Crop Progress Report

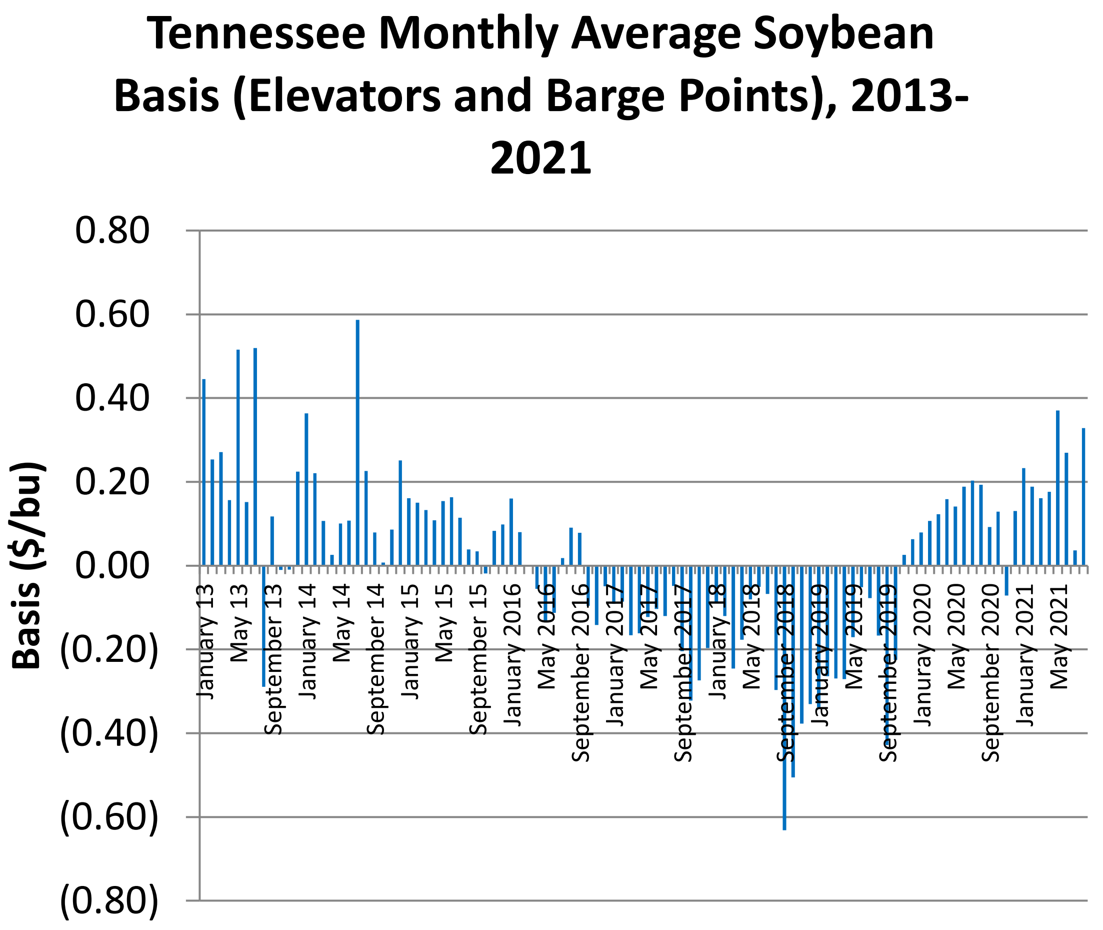


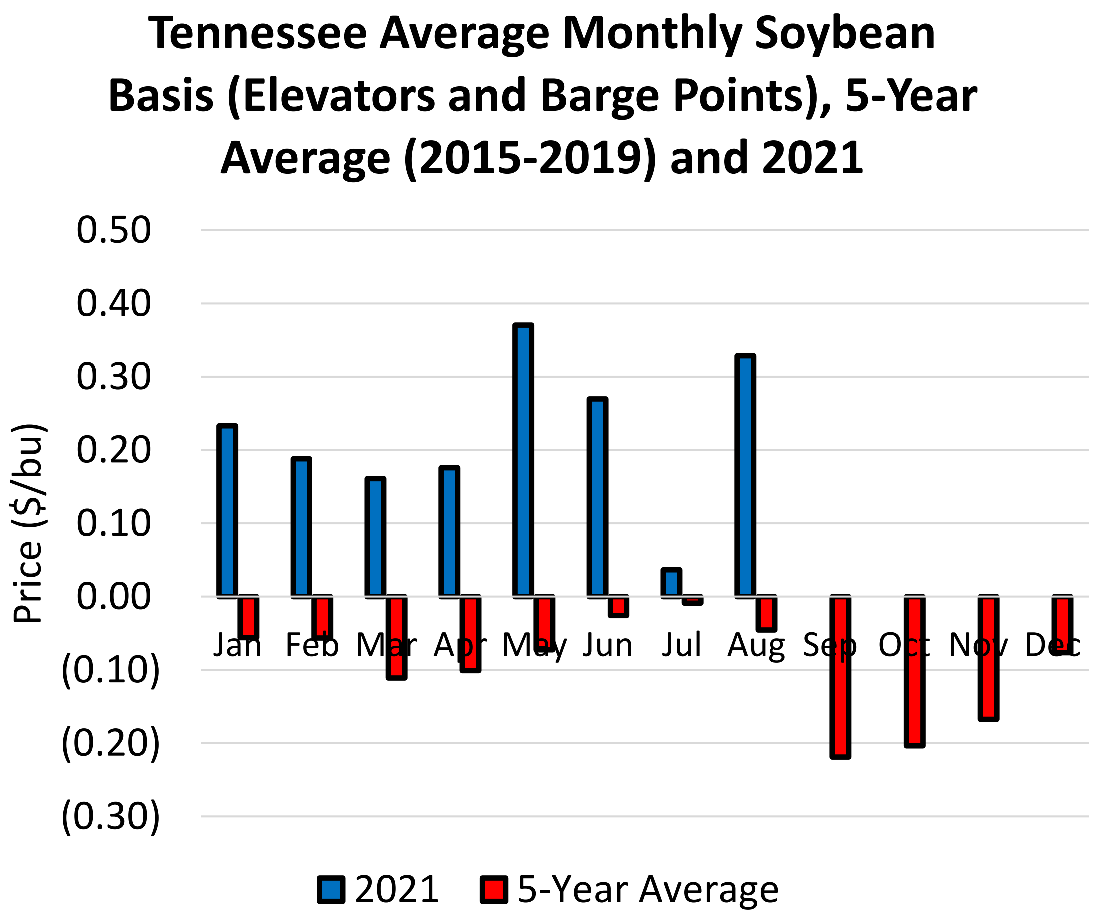
USDA
Crop Progress and Condition: Soybeans in Tennessee , 2021
NASS
April May June July August September October November
Good + Excellent (percent)
Condition Year
2017
2018
2019
2020
2021
90%
80%
70%
60%
2017
2021
2020
2018
2019
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Aug. 8
100%
80%
60%
40%
20%
0%
Progress (percent)
Planted
Emerged
Blooming
Setting pods
Dropping leaves
Harvested
Progress Year(s)
2021
2020
2016 - 2020
Source: National Agricultural Statistics Service (NASS), Crop Progress Report



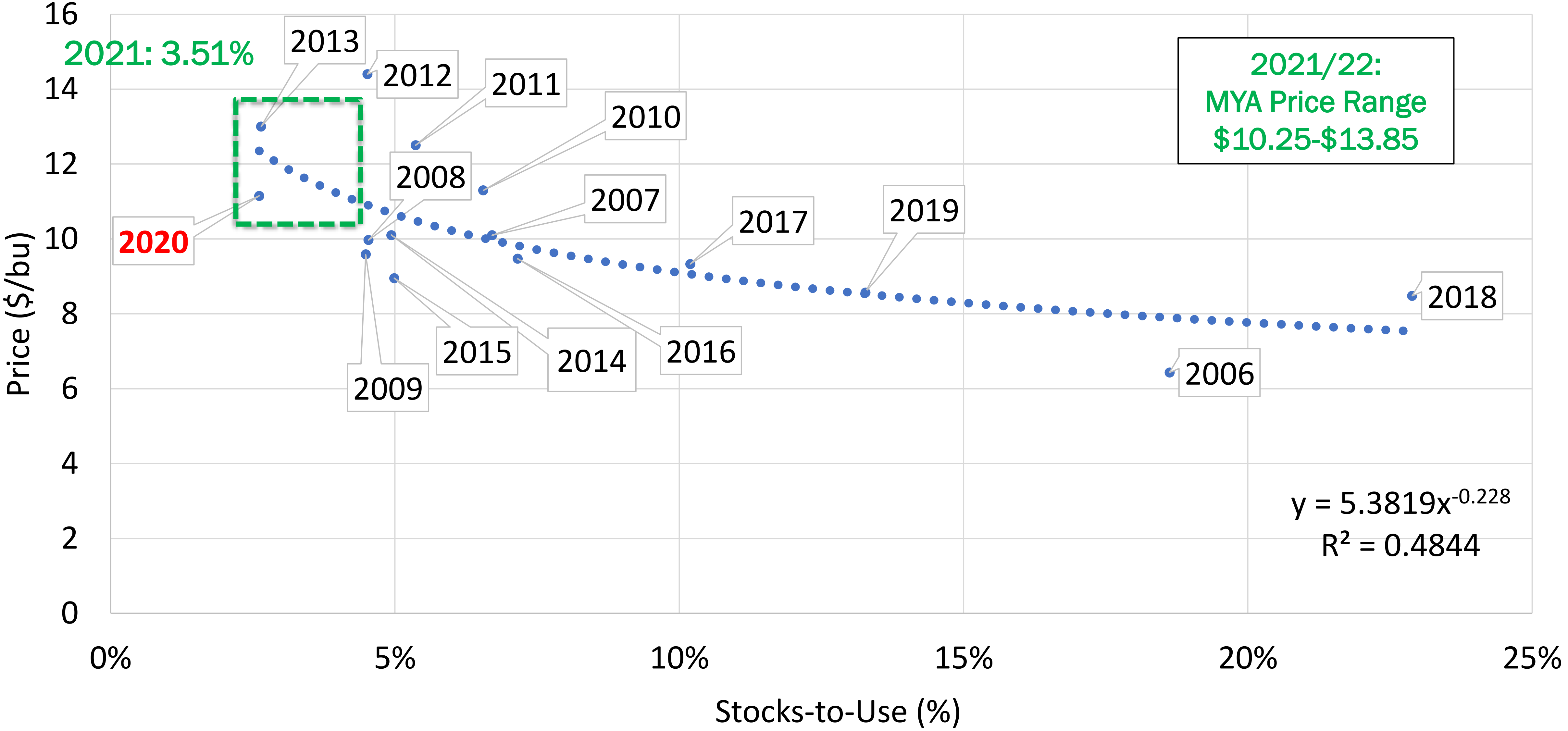
Strong global demand and tight US stocks.

Drought in the northern plains.


Tennessee Monthly Average Soybean Basis (Elevators and Barge Points), 2013-2021
Basis ($/bu)
0.80
0.60
0.40
0.20
0.00
(0.20)
(0.40)
(0.60)
(0.80)
January 13
May 13
September 13
January 14
May 14
September 14
January 15
May 15
September 15
January 2016
May 2016
September 2016
January 2017
May 2017
September 2017
January 18
May 2018
September 2018
January 2019
May 2019
September 2019
Januray 2020
May 2020
September 2020
January 2021
May 2021


Tennessee Average Monthly Soybean Basis (Elevators and Barge Points), 5-Year Average (2015-2019) and 2021
Price ($/bu)
0.50
0.40
0.30
0.20
0.10
0.00
(0.10)
(0.20)
(0.30)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2021
5-Year Average

Soybean: Stocks-to-Use to MYA Price, 2006 to 2020



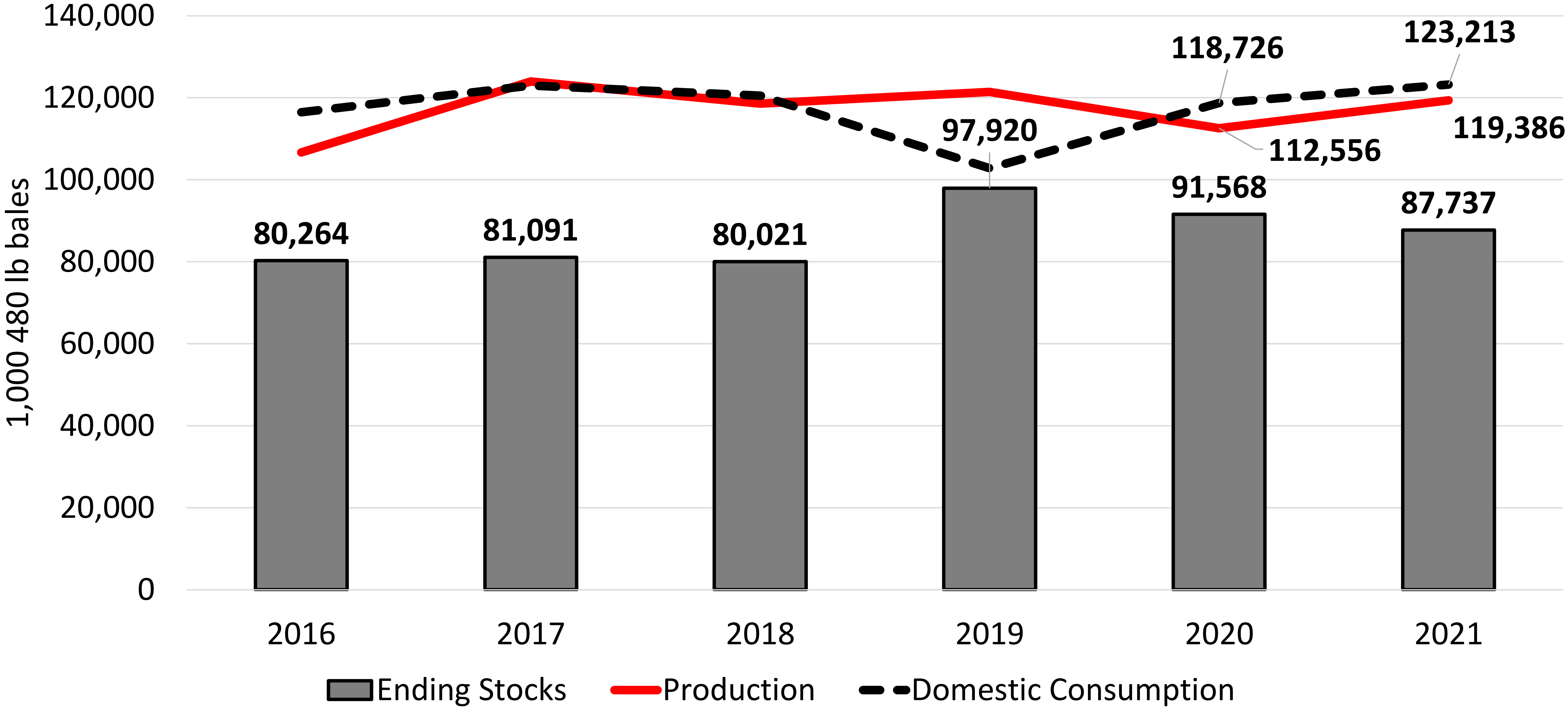
Supply, Demand, and Price Update

COTTON OUTLOOK

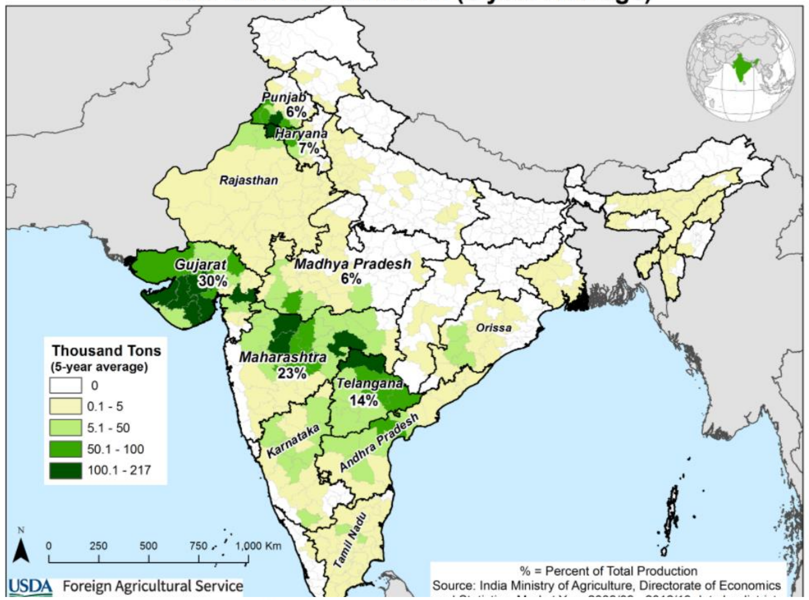
Cotton - Net Return Table ($/acre); $820/acre CoP

		Yield (lb/acre)										
		850	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350
	75.00	(183)	(145)	(108)	(70)	(33)	5	43	80	118	155	193
	76.00	(174)	(136)	(98)	(60)	(22)	16	54	92	130	168	206
	77.00	(166)	(127)	(89)	(50)	(12)	27	66	104	143	181	220
	78.00	(157)	(118)	(79)	(40)	(1)	38	77	116	155	194	233
	79.00	(149)	(109)	(70)	(30)	10	49	89	128	168	207	247
	80.00	(140)	(100)	(60)	(20)	20	60	100	140	180	220	260
	81.00	(132)	(91)	(51)	(10)	31	71	112	152	193	233	274
Price	82.00	(123)	(82)	(41)	0	41	82	123	164	205	246	287
(cent/lb)	83.00	(115)	(73)	(32)	10	52	93	135	176	218	259	301
	84.00	(106)	(64)	(22)	20	62	104	146	188	230	272	314
	85.00	(98)	(55)	(13)	30	73	115	158	200	243	285	328
	86.00	(89)	(46)	(3)	40	83	126	169	212	255	298	341
	87.00	(81)	(37)	7	50	94	137	181	224	268	311	355
	88.00	(72)	(28)	16	60	104	148	192	236	280	324	368
	89.00	(64)	(19)	26	70	115	159	204	248	293	337	382
	90.00	(55)	(10)	35	80	125	170	215	260	305	350	395

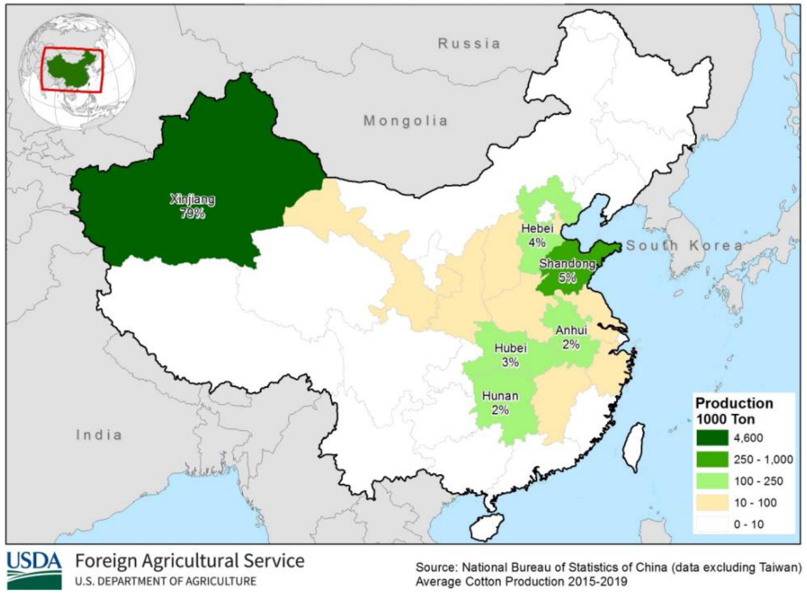
Global Cotton Production, Consumption, and Ending Stocks, 2016-2021



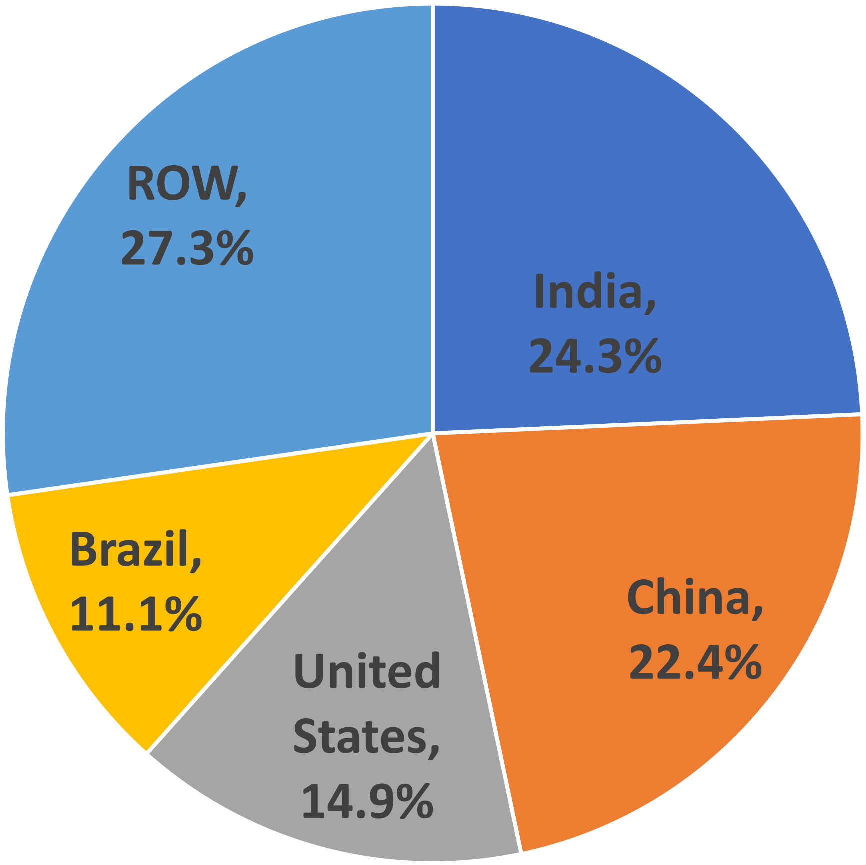
India Cotton Production (5-year Average)

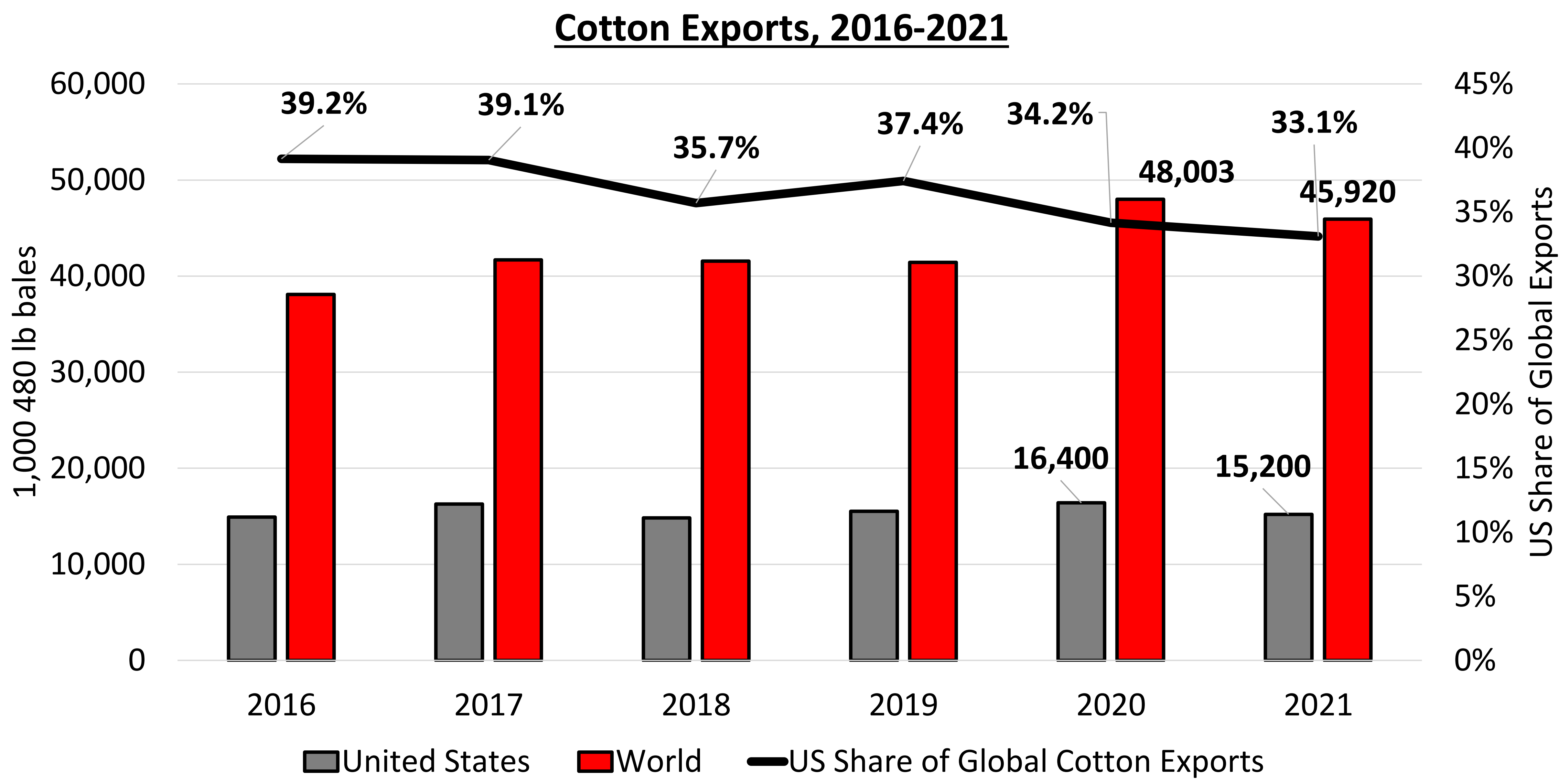


China: Cotton Production



2021 Share of Global Cotton Production





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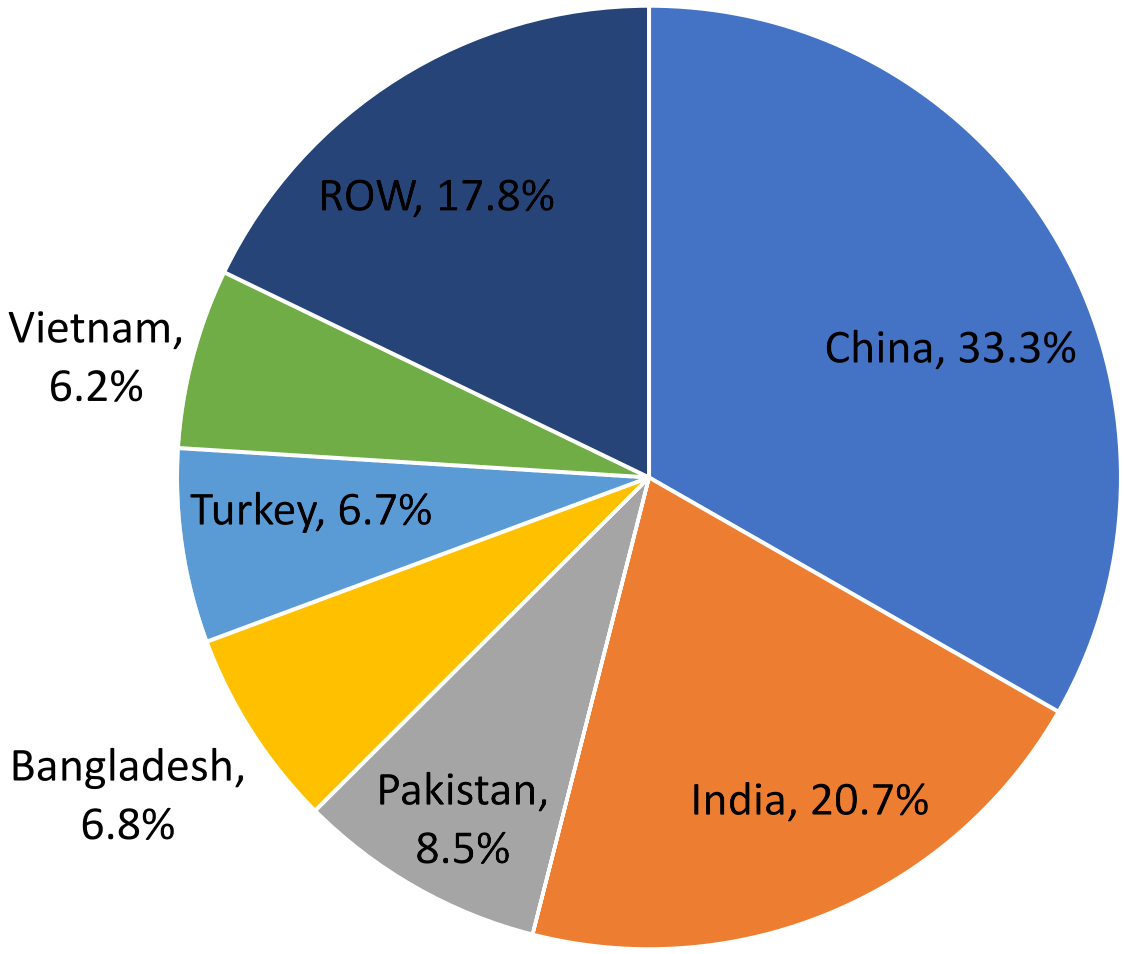
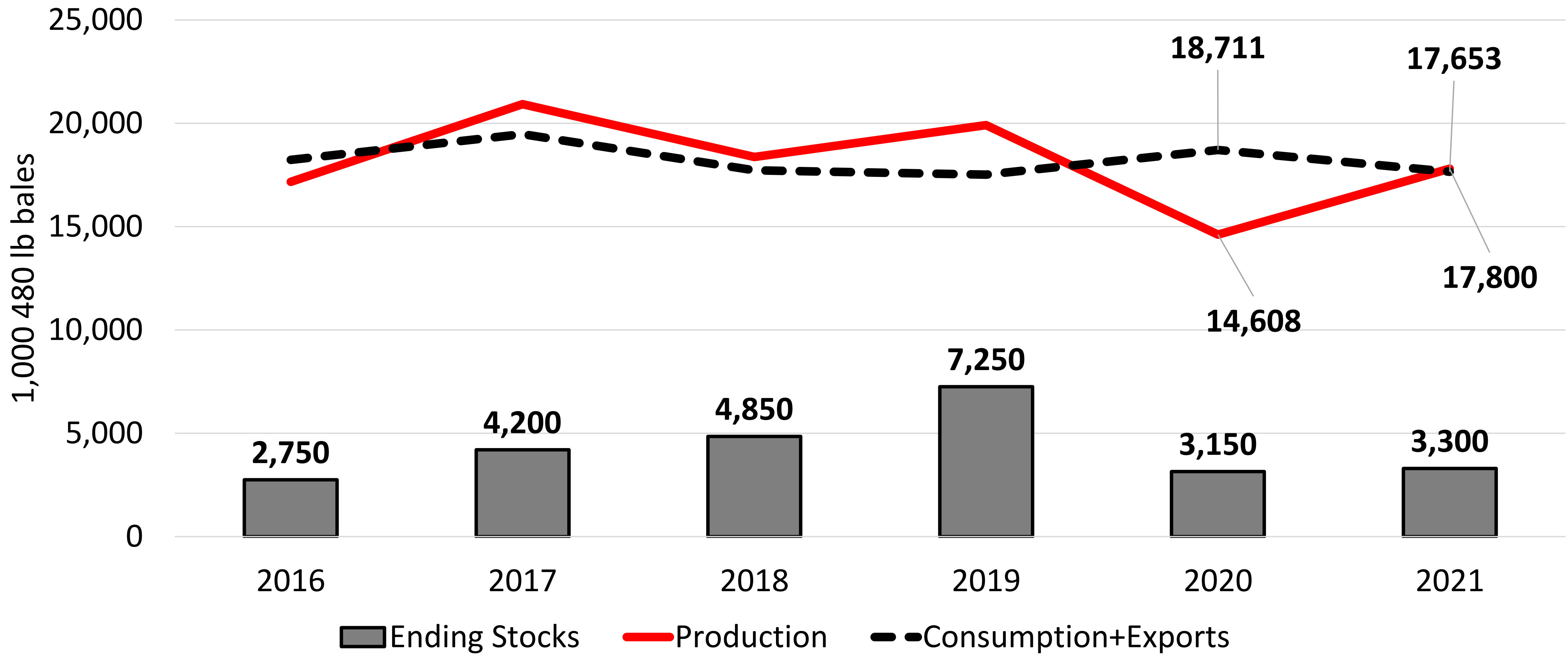
Cotton Consumption by Country, 2021

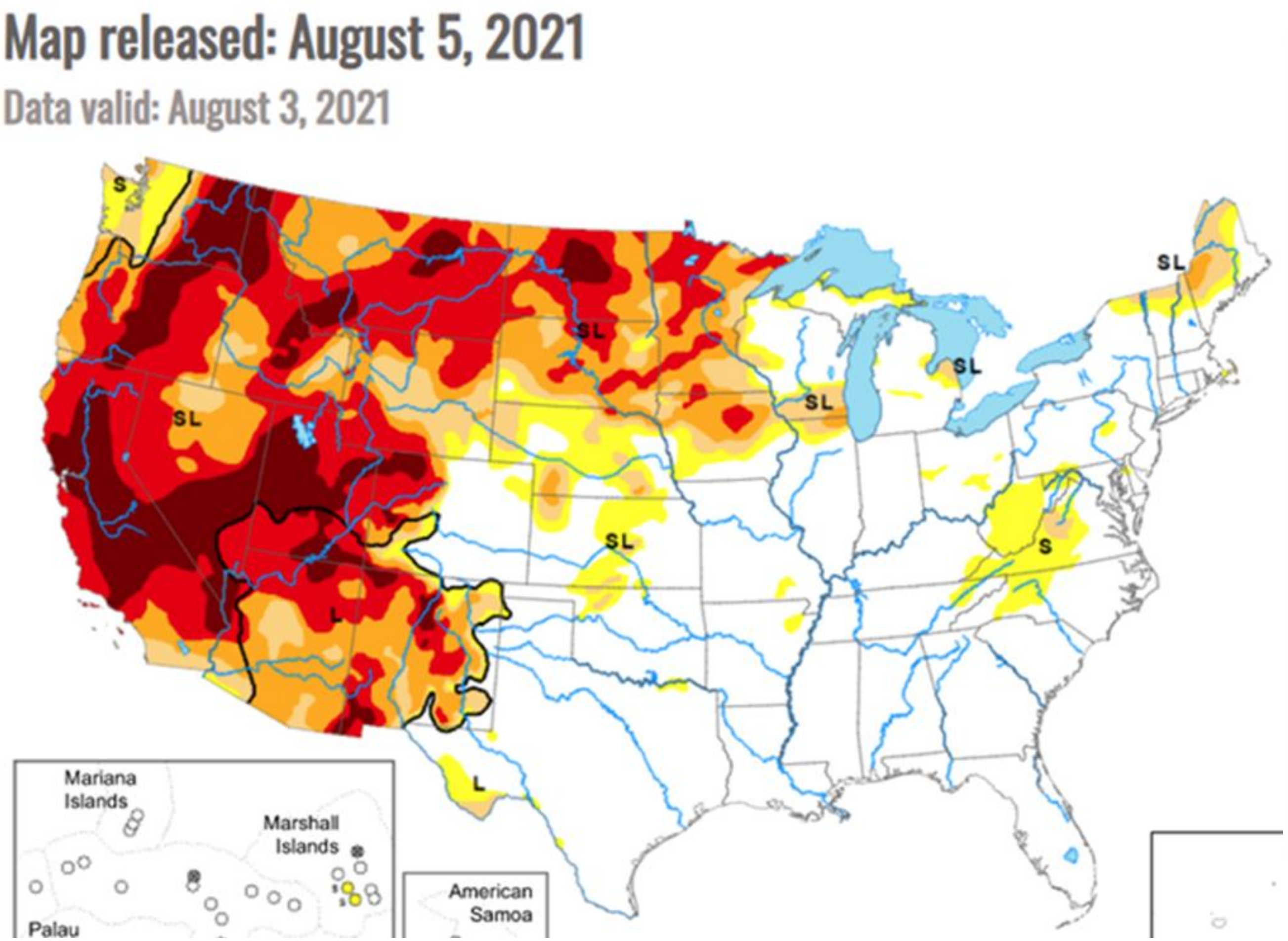


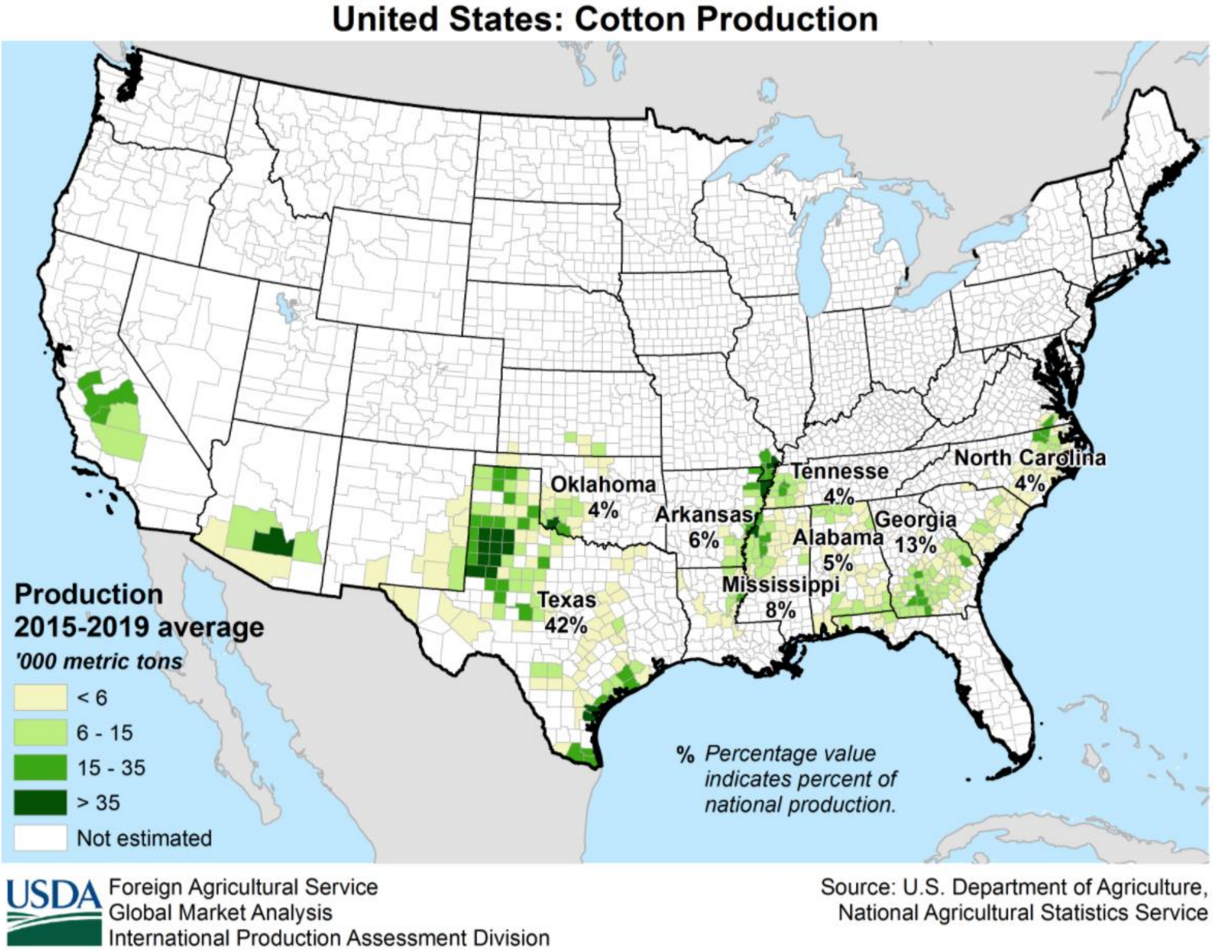
China is the dominant user in cotton and has supply chain influences across many countries.

For example, US cotton exported to Vietnam is processed into yarn and then exported to China.

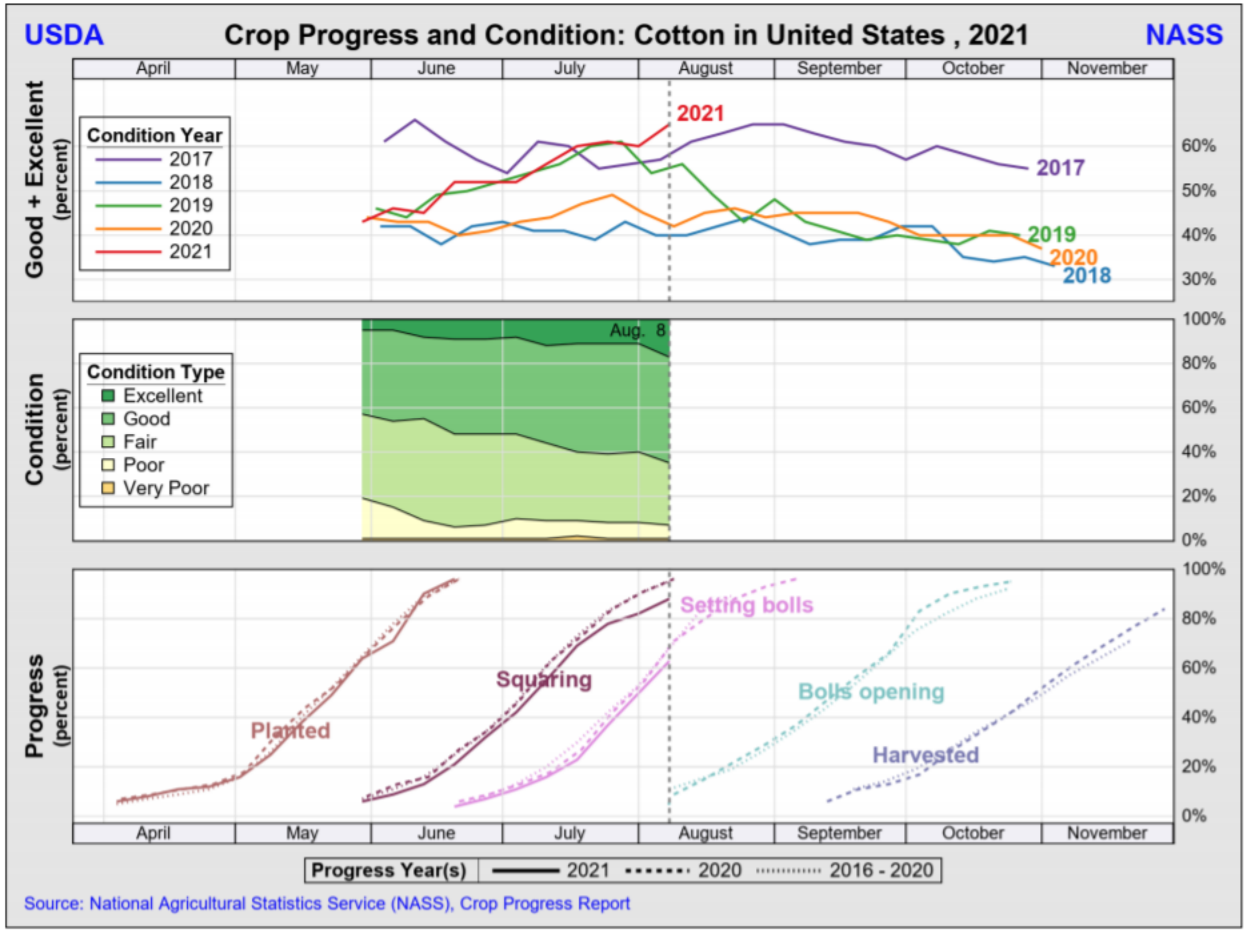
US Cotton Production, Consumption+Exports, and Ending Stocks, 2016-2021

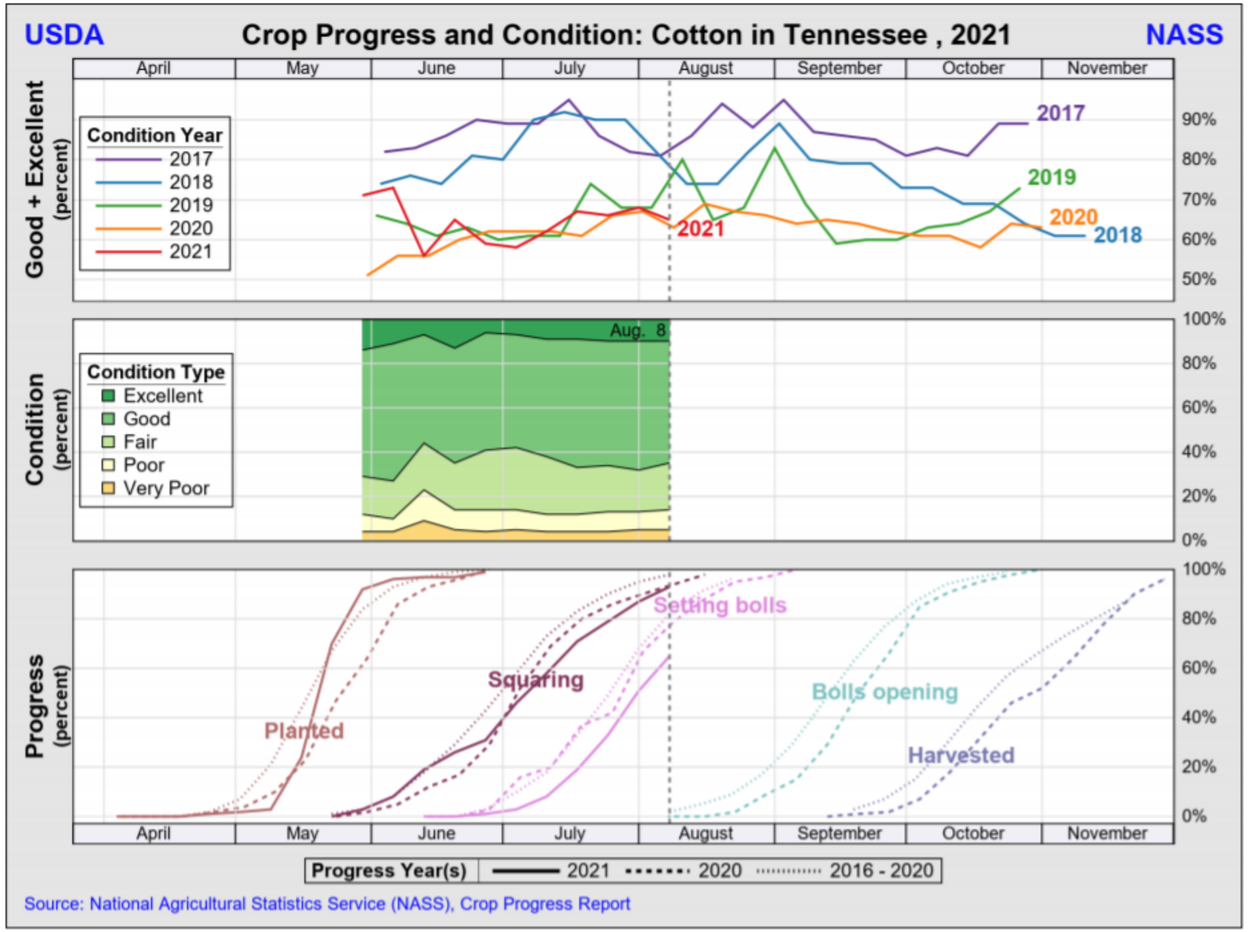




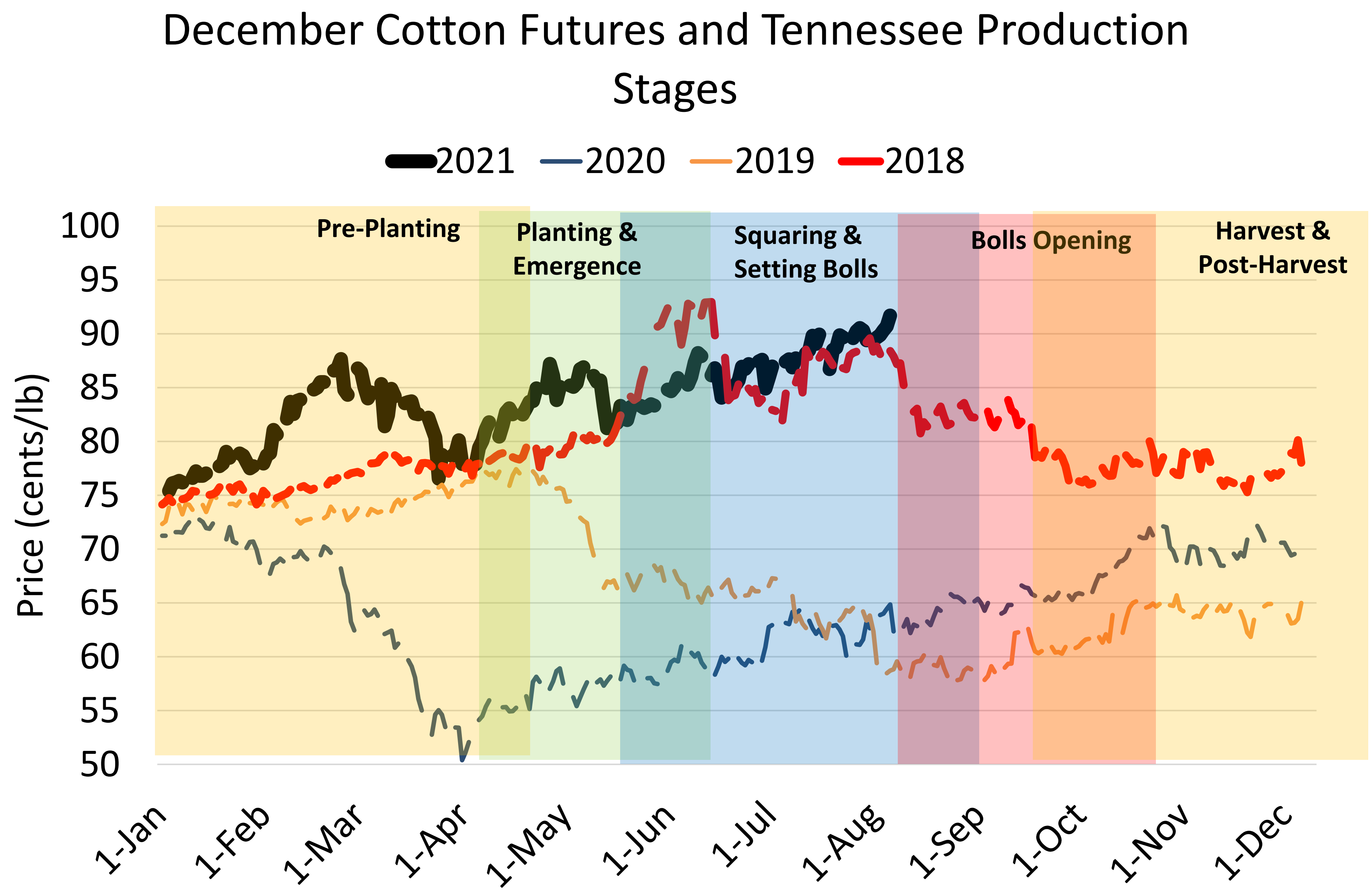


Two types of cotton produced Pima (ELS) and Upland





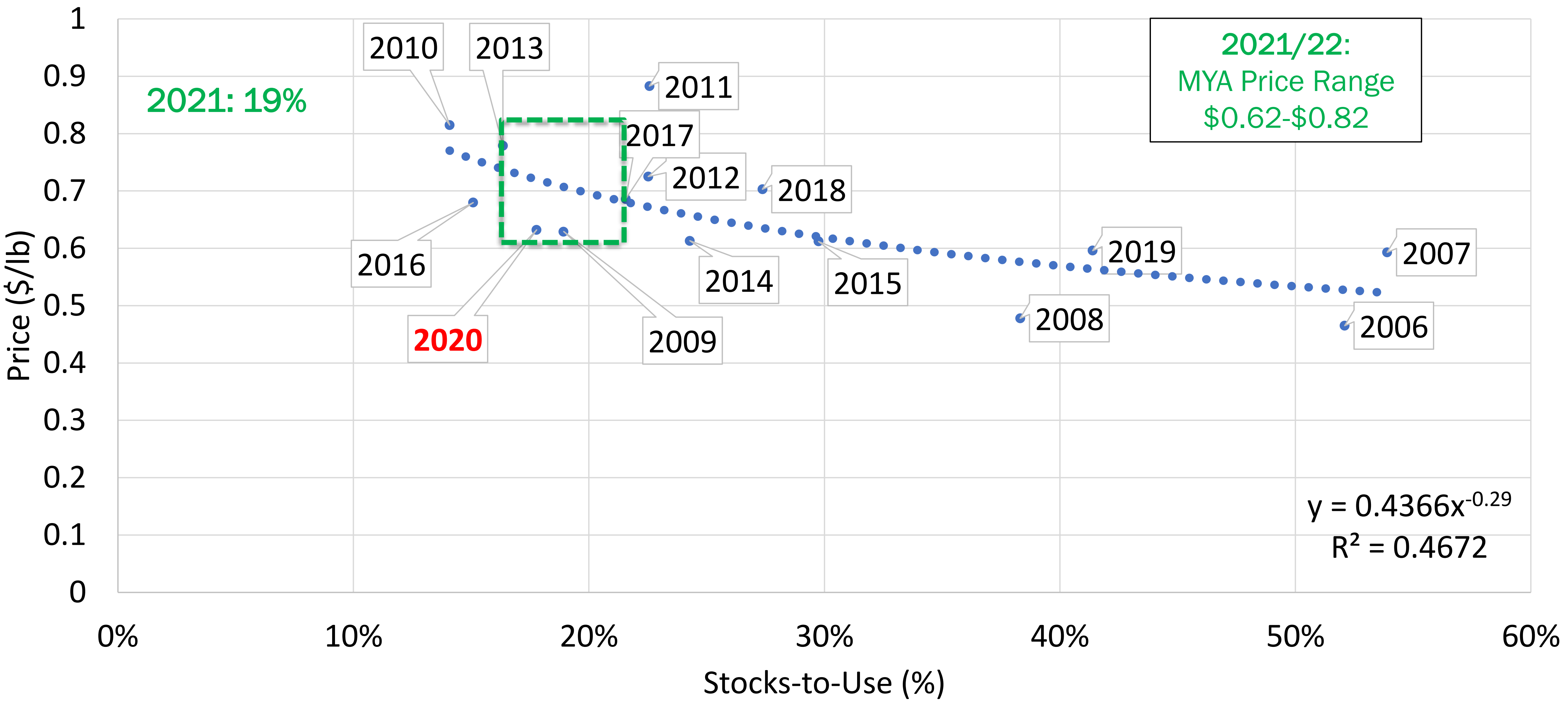
In Tennessee, cotton is 2.5-3.5 weeks behind normal development due to the wet cool conditions this spring.



April 2021 cotton prices were near 50 cents, this winter prices have a chance of hitting $1.

Extended periods with cotton over 95 cents may lead to long term demand erosion and market share replacement with synthetic fibers.

Cotton: U.S. Stocks-to-Use to MYA Price, 2006-2020



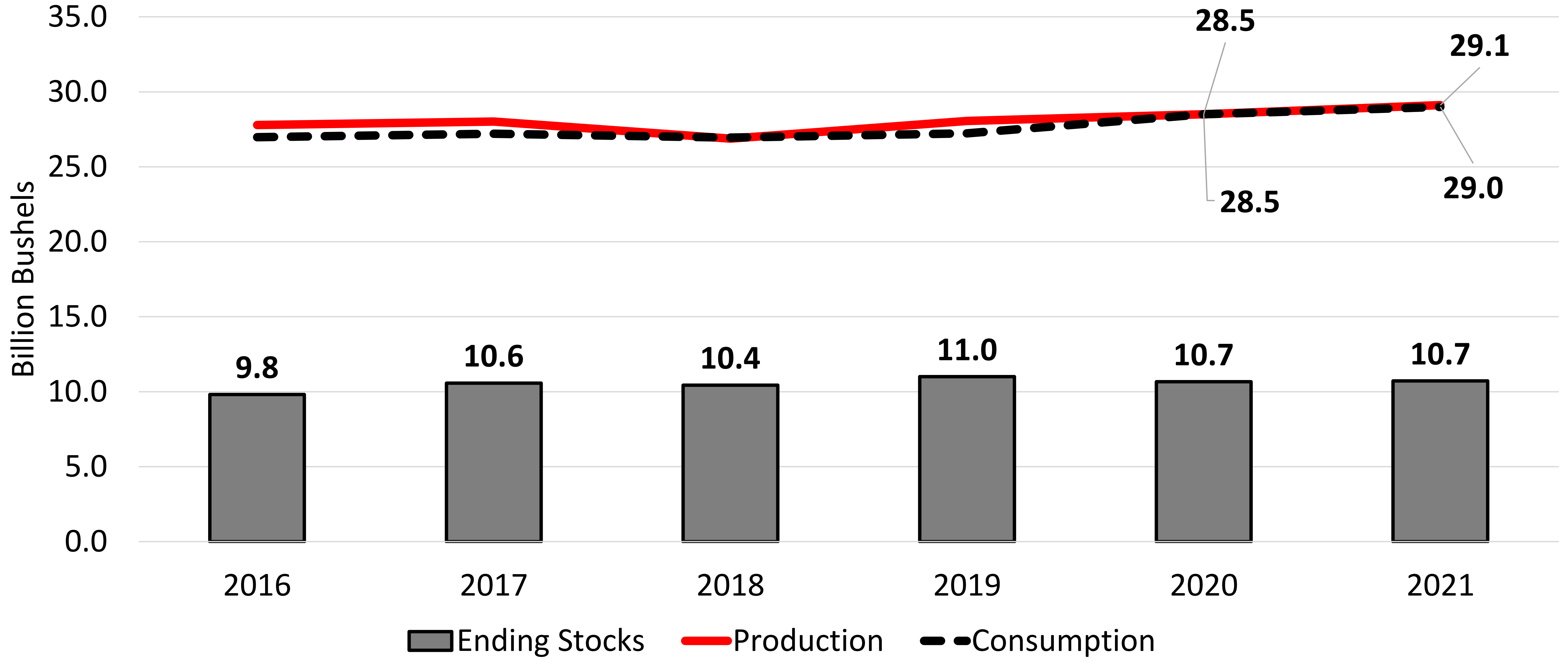
Supply, Demand, and Price Update

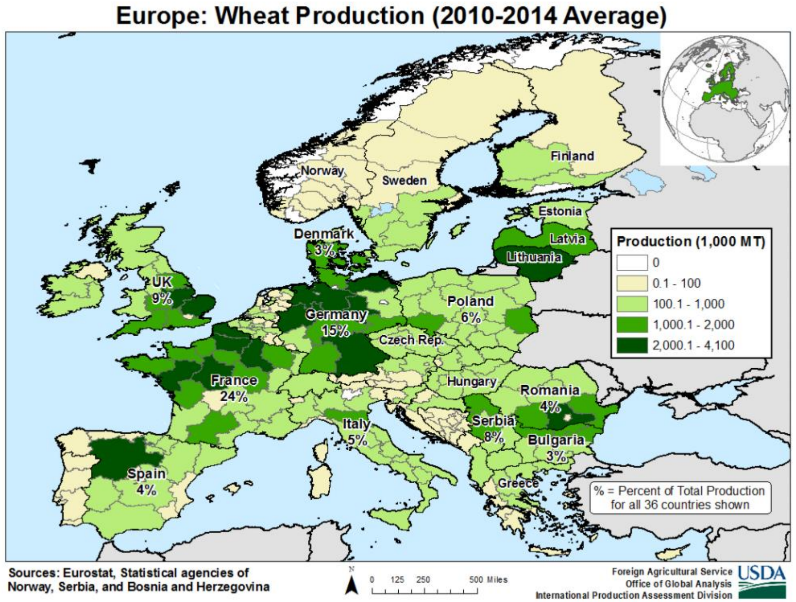
WHEAT OUTLOOK

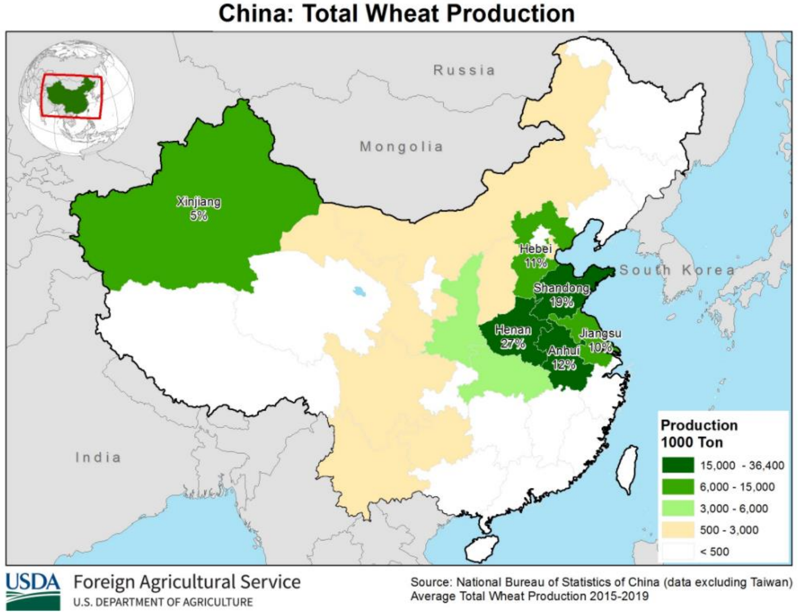
Wheat - Net Return Table ($/acre); $480 CoP

		Yield (bu/acre)										
		50	55	60	65	70	75	80	85	90	95	100
	5.00	(230)	(205)	(180)	(155)	(130)	(105)	(80)	(55)	(30)	(5)	20
	5.20	(220)	(194)	(168)	(142)	(116)	(90)	(64)	(38)	(12)	14	40
	5.40	(210)	(183)	(156)	(129)	(102)	(75)	(48)	(21)	6	33	60
	5.60	(200)	(172)	(144)	(116)	(88)	(60)	(32)	(4)	24	52	80
	5.80	(190)	(161)	(132)	(103)	(74)	(45)	(16)	13	42	71	100
	6.00	(180)	(150)	(120)	(90)	(60)	(30)	0	30	60	90	120
	6.20	(170)	(139)	(108)	(77)	(46)	(15)	16	47	78	109	140
Price ($/bu)	6.40	(160)	(128)	(96)	(64)	(32)	0	32	64	96	128	160
	6.60	(150)	(117)	(84)	(51)	(18)	15	48	81	114	147	180
	6.80	(140)	(106)	(72)	(38)	(4)	30	64	98	132	166	200
	7.00	(130)	(95)	(60)	(25)	10	45	80	115	150	185	220
	7.20	(120)	(84)	(48)	(12)	24	60	96	132	168	204	240
	7.40	(110)	(73)	(36)	1	38	75	112	149	186	223	260
	7.60	(100)	(62)	(24)	14	52	90	128	166	204	242	280
	7.80	(90)	(51)	(12)	27	66	105	144	183	222	261	300
	8.00	(80)	(40)	0	40	80	120	160	200	240	280	320

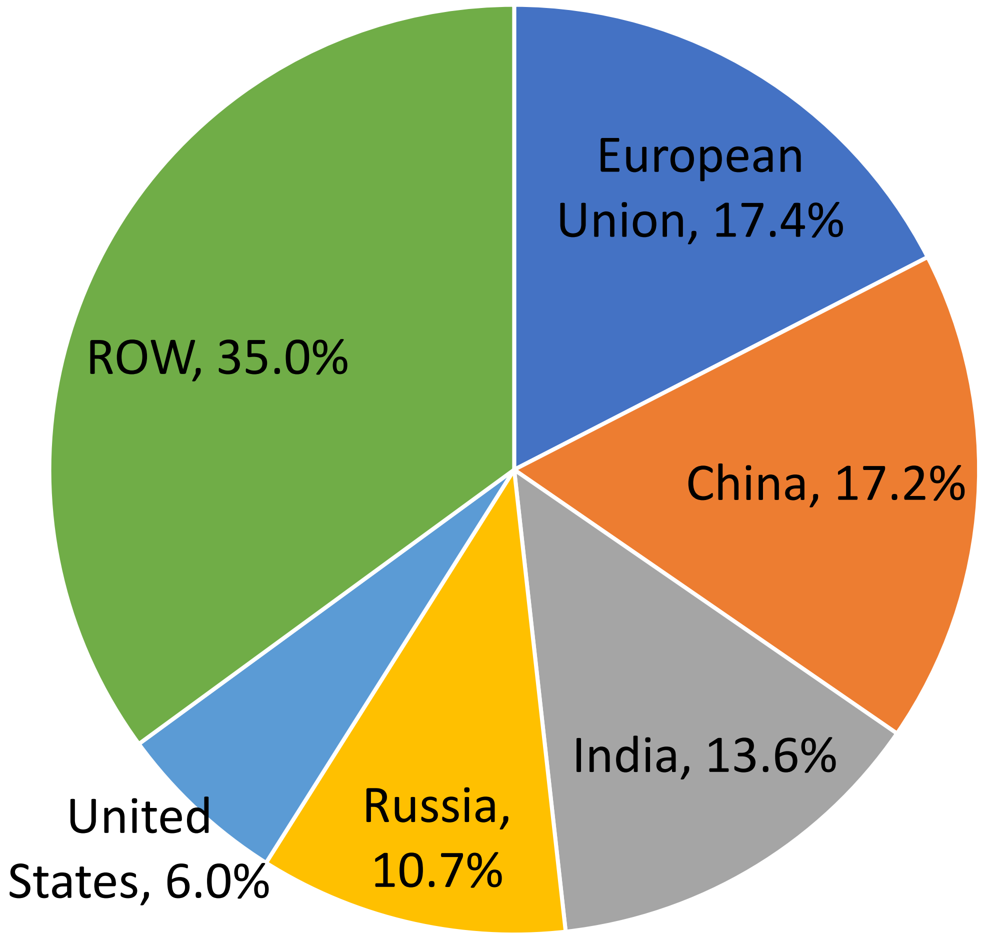
Global Wheat Production, Consumption+Exports, and Ending Stocks, 2016-2021



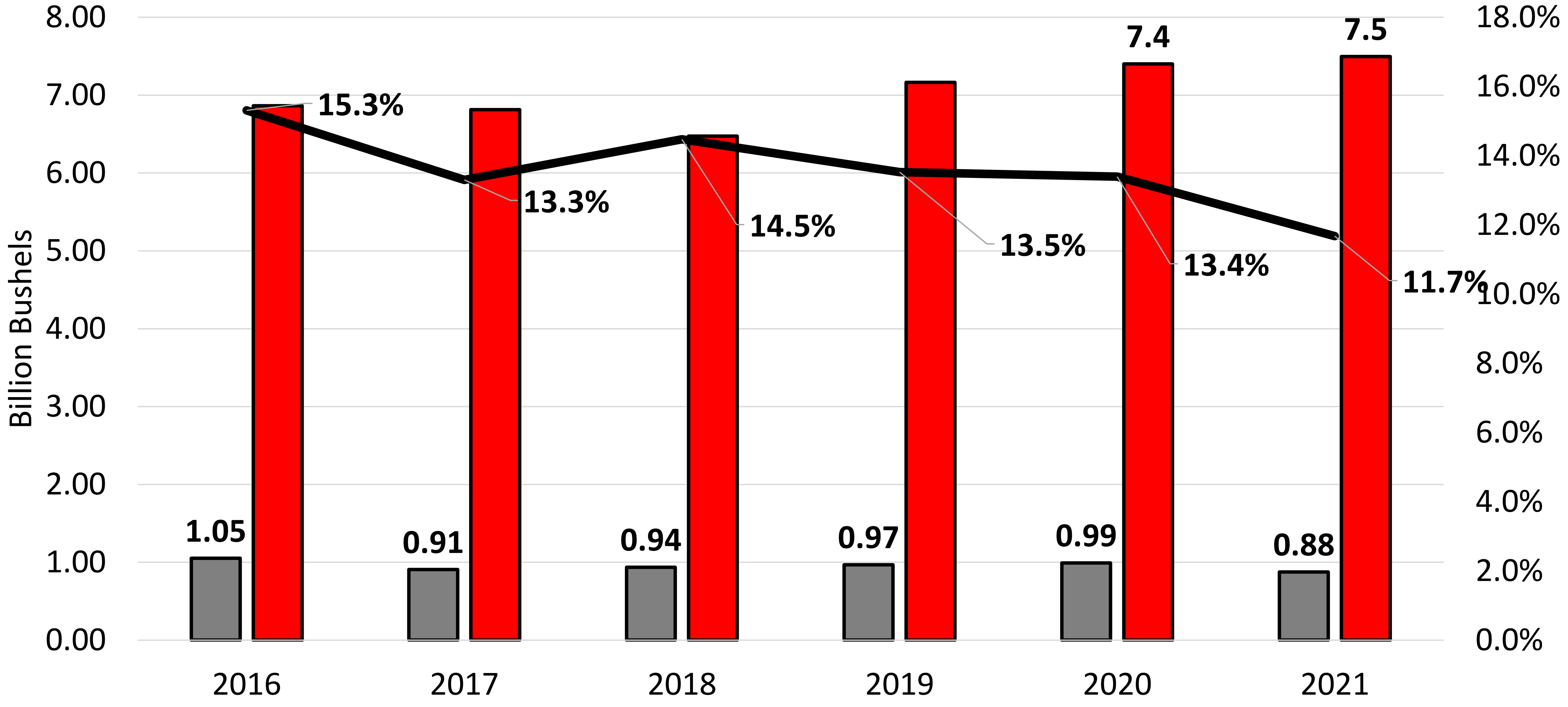




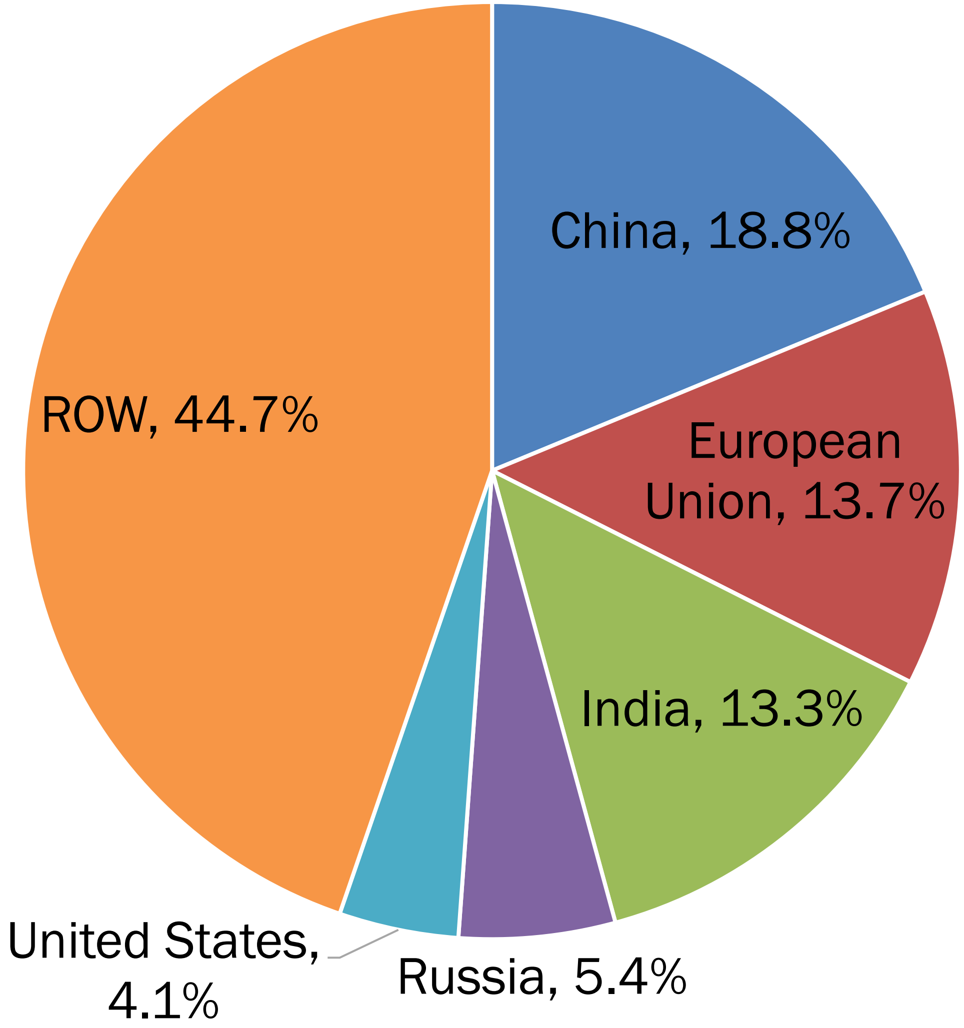
2021 Share of Global Wheat Production



Wheat Exports, 2016-2021



2021 Share of Global Wheat Consumption



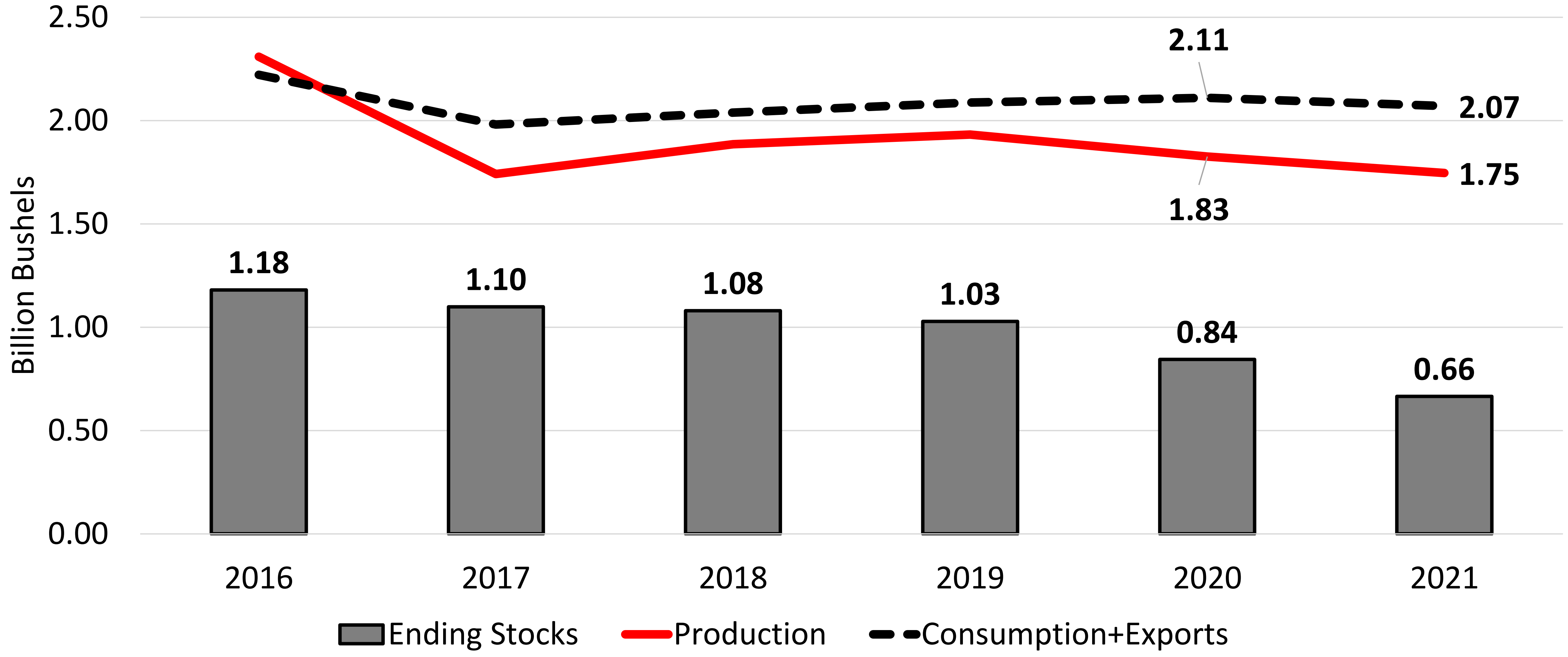
Wheat is a true global commodity on production and consumption, It is grown on every continent (excluding Antarctica), in both hemispheres and has spring and winter crops.

Production can recover more quickly because of the diversified production area.

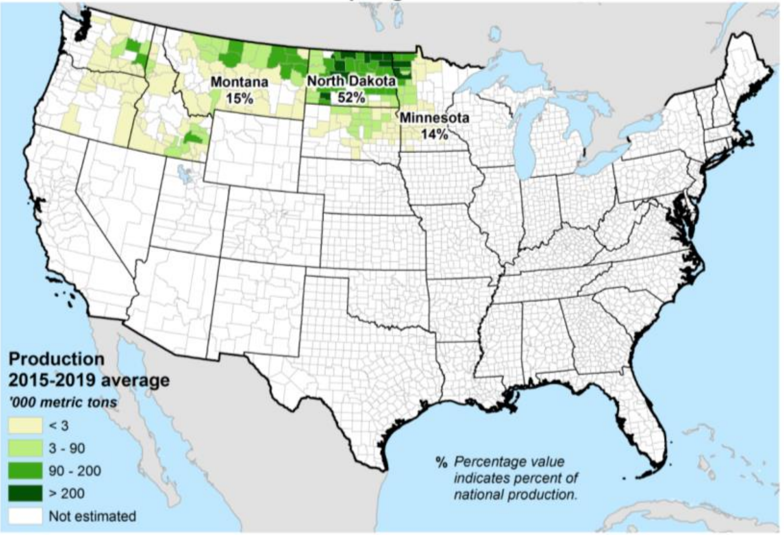
Wheat is not a homogenous product, however substitution can occur across types and into feed grains.

This summer wheat was priced 1:1 with corn for a short period of time.

US Wheat Production, Consumption+Exports, and Ending Stocks, 2016-2021



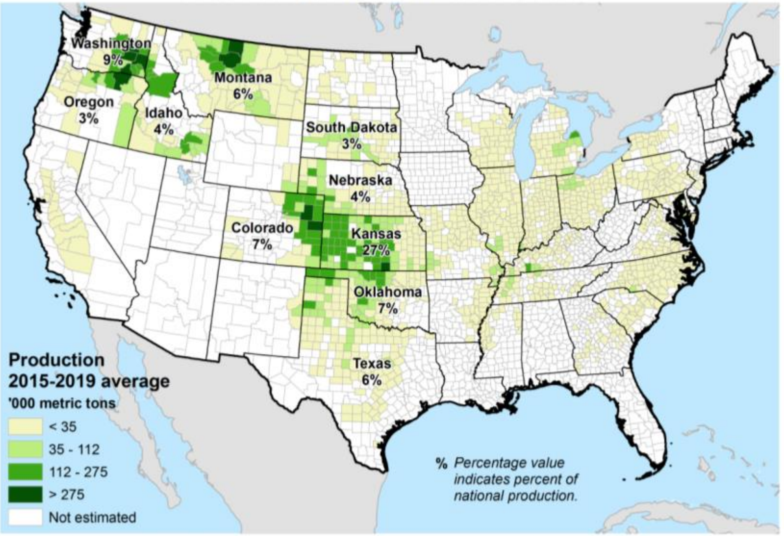
United States: Spring Wheat Production



USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

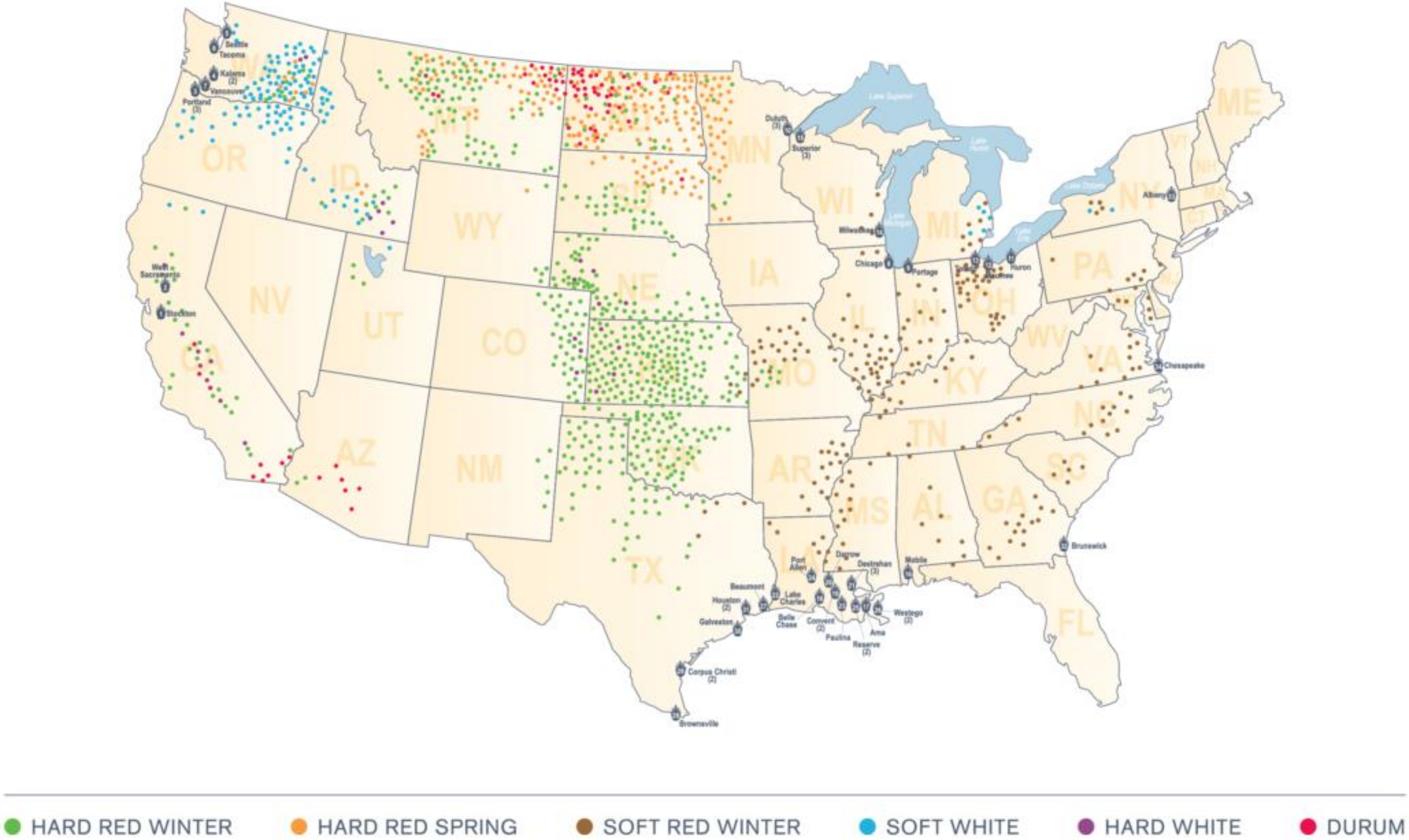
Source: U.S. Department of Agriculture, National Agricultural Statistics Service

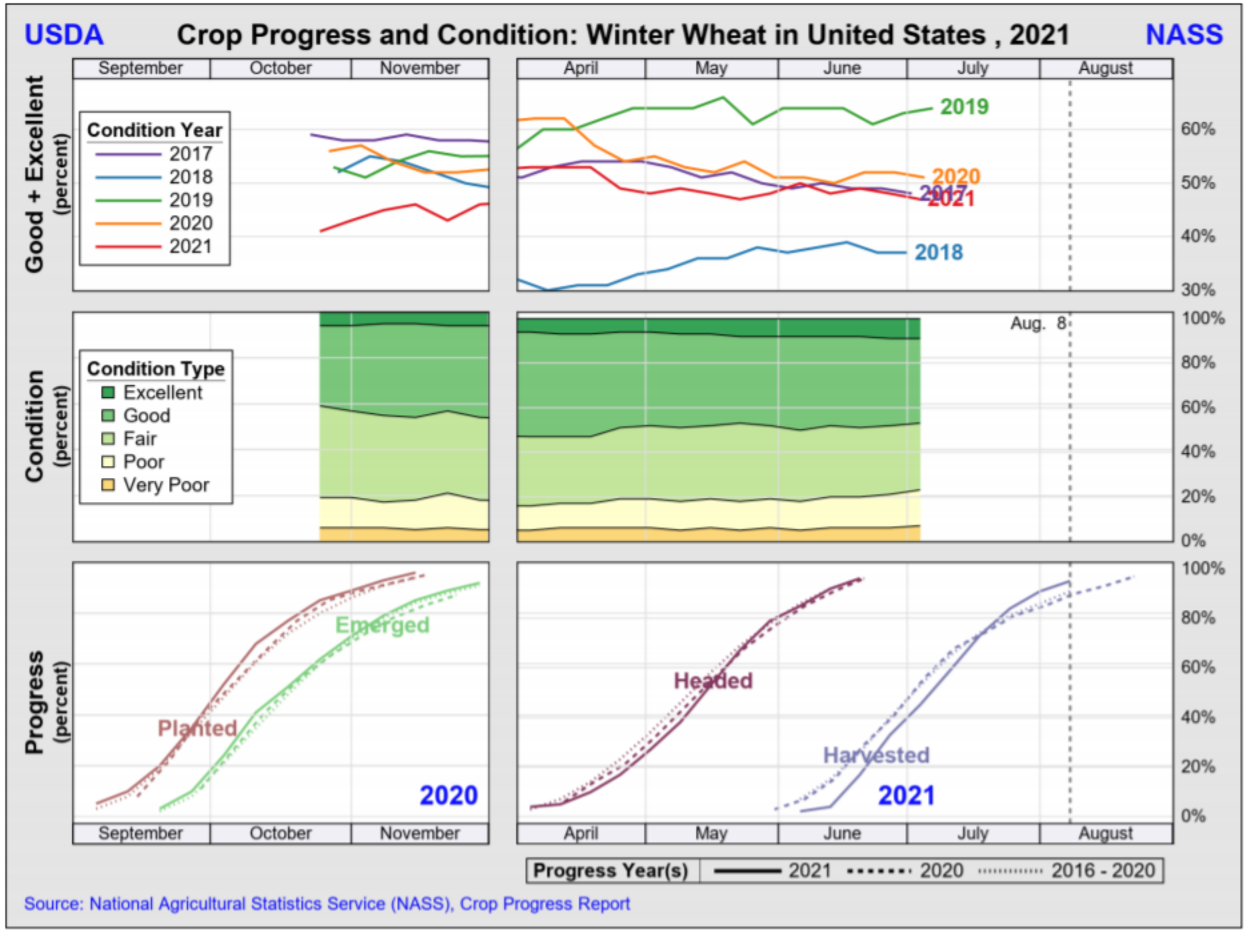
United States: Winter Wheat Production

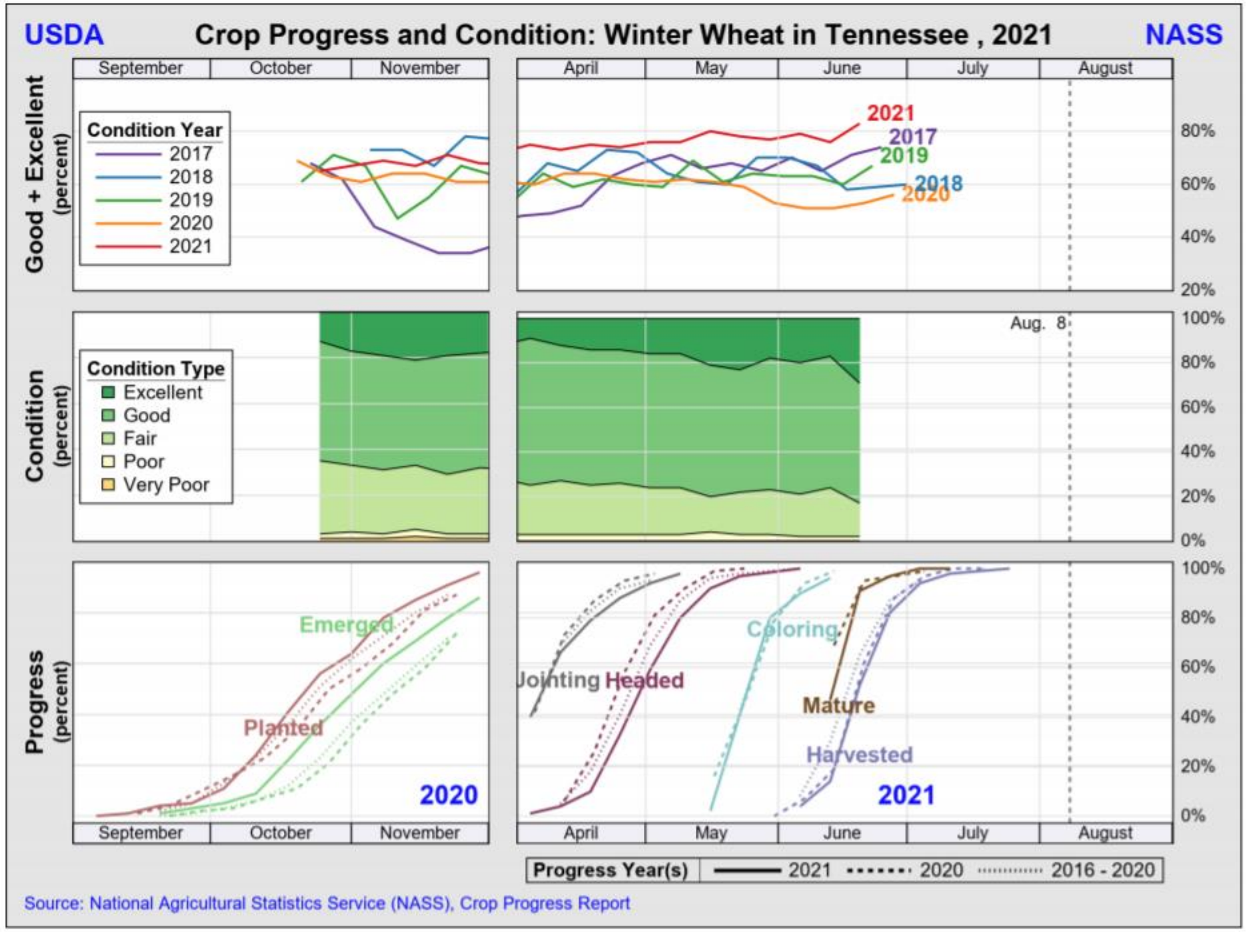


USDA Foreign Agricultural Service
Global Market Analysis
International Production Assessment Division

Source: U.S. Department of Agriculture, National Agricultural Statistics Service




USDA
Crop Progress and Condition: Winter Wheat in United States , 2021
NASS
Good + Excellent (percent)
Condition Year
2017
2018
2019
2020
2021
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Aug. 8
Progress (percent)
Planted
Emerged
2020
Headed
Harvested
2021
September
October
November
April
May
June
July
August
Progress Year(s)
2021
2020
2016 - 2020
Source: National Agricultural Statistics Service (NASS), Crop Progress Report

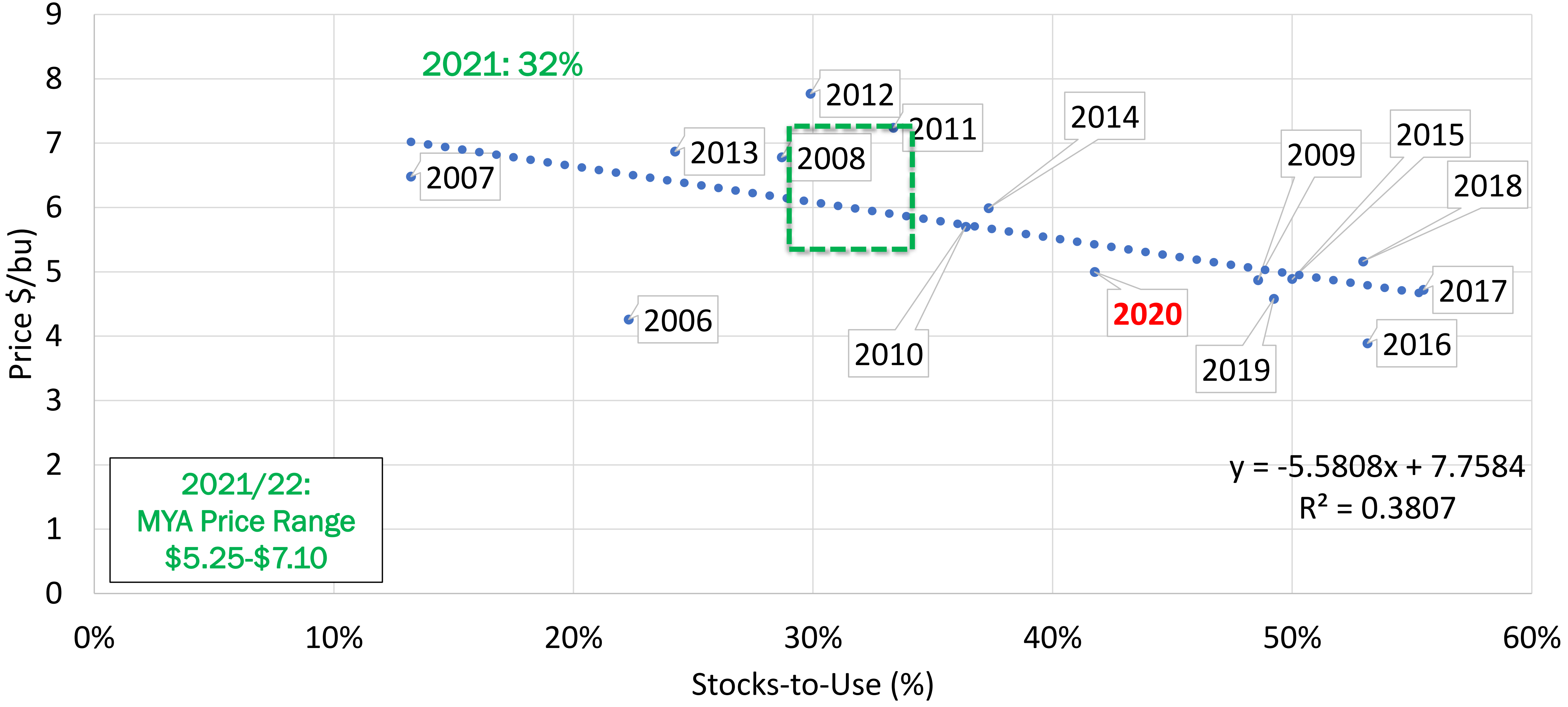

USDA
Crop Progress and Condition: Winter Wheat in Tennessee , 2021
NASS
Good + Excellent (percent)
Condition Year
2017
2018
2019
2020
2021
Condition (percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Aug. 8
Progress (percent)
Emerged
Planted
2020
Jointing
Headed
Coloring
Mature
Harvested
2021
September
October
November
April
May
June
July
August
Progress Year(s)
2021
2020
2016 - 2020
Source: National Agricultural Statistics Service (NASS), Crop Progress Report

Incentive to plant wheat this fall.

Downside price protection should be considered.

Nearby wheat futures have been above $7.00 5 times in the last 20 years.

Wheat: Stocks-to-Use to MYA Price, 2006 to 2020



Price Projections

	Harvest Futures (2021)	WASDE (Jul/21) 2021/22 National MYA Price	Harvest Futures (2022)	Projected Tennessee Cash 21/22 MYA
Corn	$5.58	$5.60	$5.16	$5.50-$7.50
Soybeans	$13.41	$13.70	$12.53	$12.00-$14.50
Cotton	91.17	75	81.58	82-92
Wheat	-	$6.60	$7.22	$6.50-$7.75

Key Factors Moving Forward

- Expect volatility
- 2021 U.S. yields
- Brazil production 2021
- China demand / imports
- Future of the RFS and ethanol
- Livestock and poultry demand
- South American / Eastern Europe production
- Overproduction due to high prices
- Climate and weather

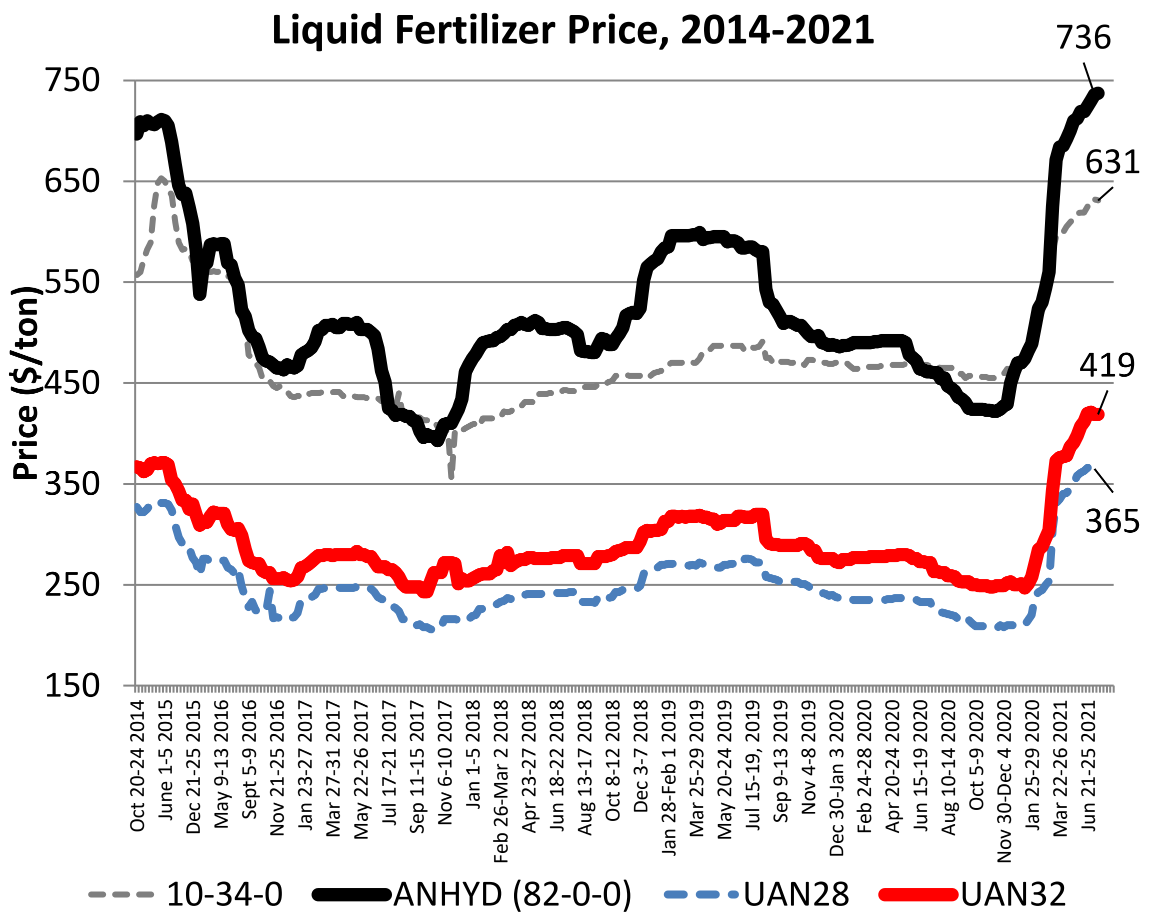
- Farm for profitability not price; high input costs will be a major concern for 2022, particularly if prices pull back.

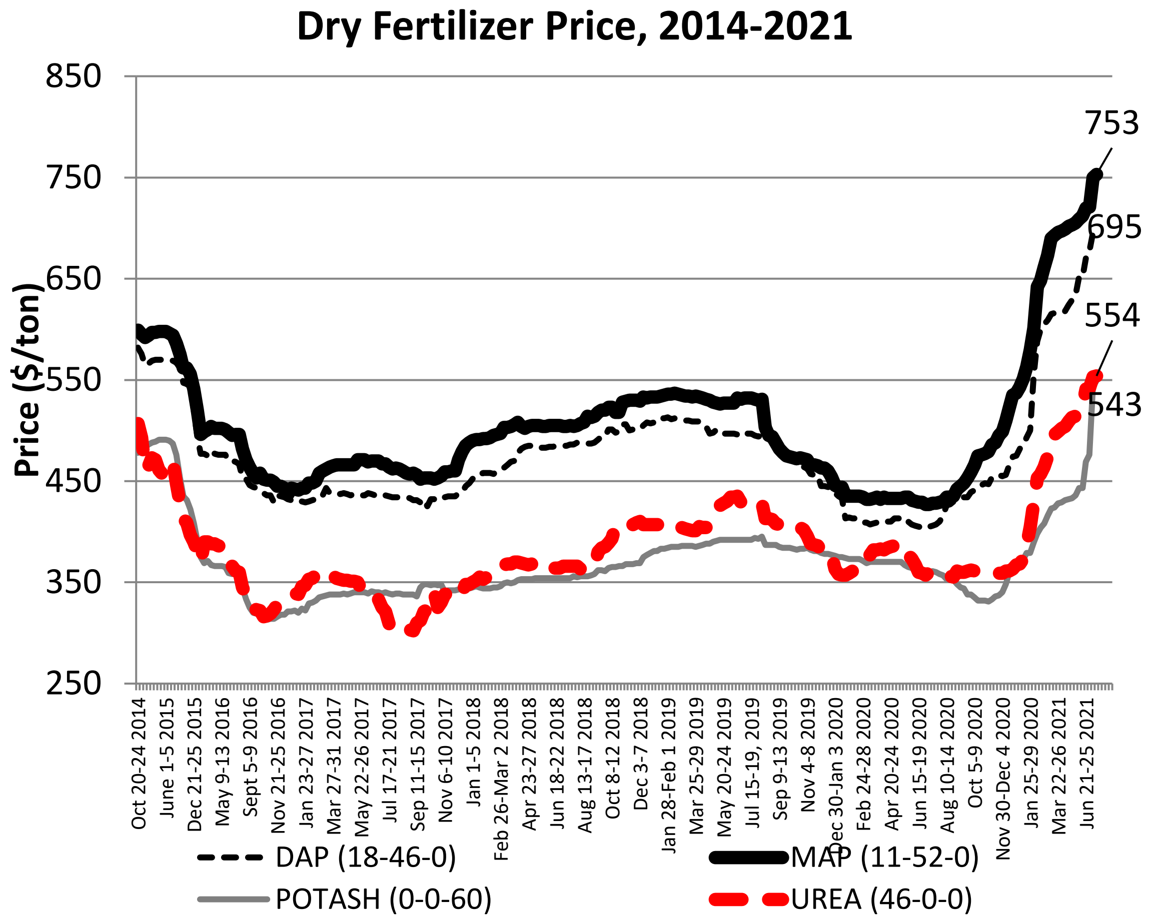
Marketing Considerations

- Straight short hedge requires margin/liquidity.
- Options strategies can remove downside risk and/or allow upside participation in futures market rallies.
- Basis and storage are the most impactful marketing tools available to Tennessee producers.
- Identifying terminal markets for producers in the county/region can increase price premiums.
- Its not too early to look at 2022 crop pricing.

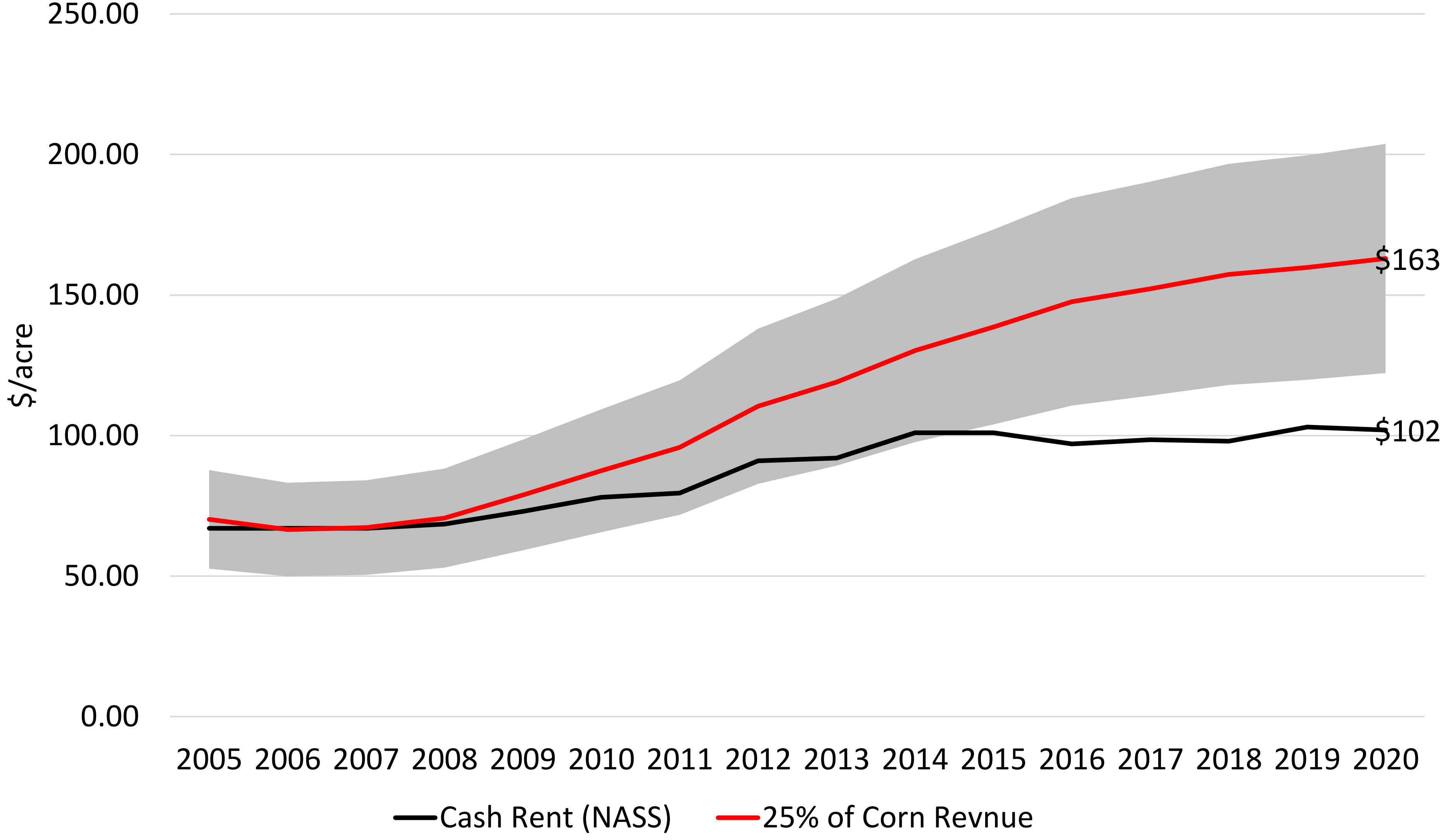
Fertilizer and Land

INPUT COSTS


Liquid Fertilizer Price, 2014-2021
Price ($/ton)
750
650
550
450
350
250
150
736
631
419
365
Oct 20-24 2014
June 1-5 2015
Dec 21-25 2015
May 9-13 2016
Sept 5-9 2016
Nov 21-25 2016
Jan 23-27 2017
Mar 27-31 2017
May 22-26 2017
Jul 17-21 2017
Sep 11-15 2017
Nov 6-10 2017
Jan 1-5 2018
Feb 26-Mar 2 2018
Apr 23-27 2018
Jun 18-22 2018
Aug 13-17 2018
Oct 8-12 2018
Dec 3-7 2018
Jan 28-Feb 1 2019
Mar 25-29 2019
May 20-24 2019
Jul 15-19, 2019
Sep 9-13 2019
Nov 4-8 2019
Dec 30-Jan 3 2020
Feb 24-28 2020
Apr 20-24 2020
Jun 15-19 2020
Aug 10-14 2020
Oct 5-9 2020
Nov 30-Dec 4 2020
Jan 25-29 2020
Mar 22-26 2021
Jun 21-25 2021
10-34-0
ANHYD (82-0-0)
UAN28
UAN32


Dry Fertilizer Price, 2014-2021
Price ($/ton)
850
750
650
550
450
350
250
753
695
554
543
Oct 20-24 2014
June 1-5 2015
Dec 21-25 2015
May 9-13 2016
Sept 5-9 2016
Nov 21-25 2016
Jan 23-27 2017
Mar 27-31 2017
May 22-26 2017
Jul 17-21 2017
Sep 11-15 2017
Nov 6-10 2017
Jan 1-5 2018
Feb 26-Mar 2 2018
Apr 23-27 2018
Jun 18-22 2018
Aug 13-17 2018
Oct 8-12 2018
Dec 3-7 2018
Jan 28-Feb 1 2019
Mar 25-29 2019
May 20-24 2019
Jul 15-19, 2019
Sep 9-13 2019
Nov 4-8 2019
Dec 30-Jan 3 2020
Feb 24-28 2020
Apr 20-24 2020
Jun 15-19 2020
Aug 10-14 2020
Oct 5-9 2020
Nov 30-Dec 4 2020
Jan 25-29 2020
Mar 22-26 2021
Jun 21-25 2021
DAP (18-46-0)
MAP (11-52-0)
POTASH (0-0-60)
UREA (46-0-0)

Tennessee Cropland Rental Rates (Corn 25% Crop Share), 2000-2020



Crop Share Example:
170 bu/acre x $6.50/bu= $1,105

$1,105 x 25% = $276.25/acre

Programs and a look to the 2023 Farm Bill

USDA FSA UPDATE

Ad Hoc Payments to Tennessee Producers

- 2018: MFP: $68.97 million
- 2019: MFP: $245.78 million
- CFAP 1 $133.2 million
- CFAP 2 $164.6 million
- PPP: $115+ million
- WHIP & WHIP+ ??

- Farm Bill Programs: ARC/PLC, DMC, Marketing Loans, Conservation

FSA Programs Moving Forward

- Priorities have changed
  - Carbon, regenerative agriculture, environmental compliance
  - Underserved communities and socially disadvantaged farmers
- Farm Bill Programs: ARC/PLC and Crop insurance
  - Further ties to conservation compliance
- Will ad hoc payments continue?
  - Likely smaller amounts with more targeted programs

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THANK YOU