July 2, 2019

Global Corn & DDGS Production, Supply, & Demand

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U.S. Grains Council

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Corn Production, Supply, & Demand

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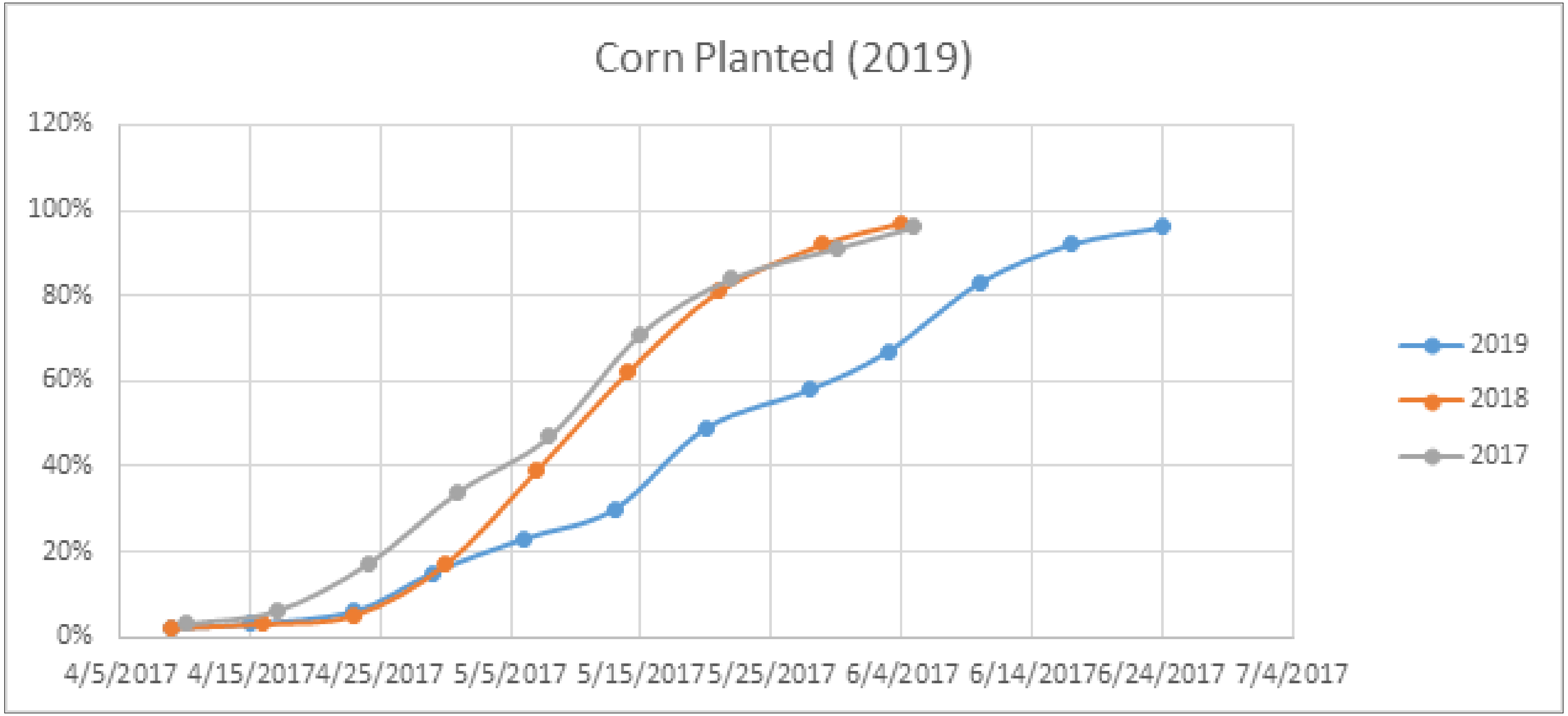
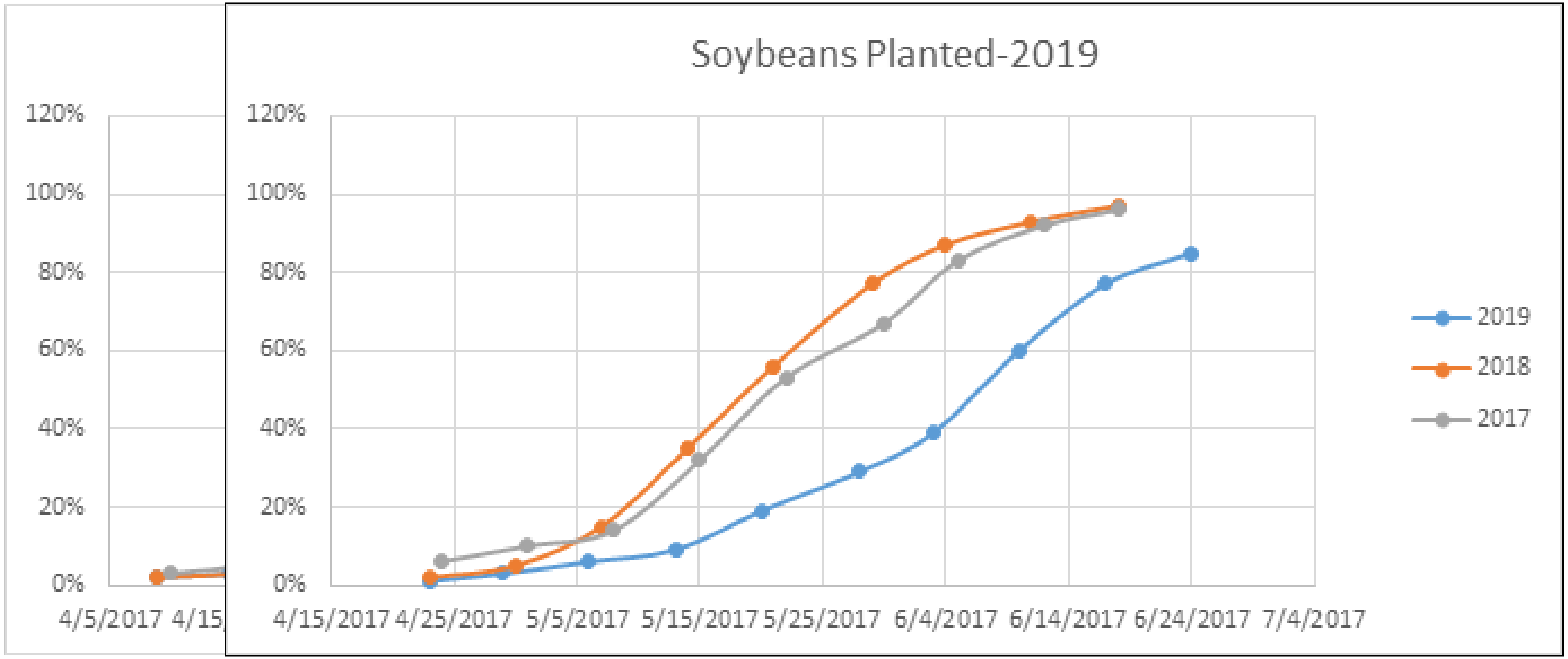
Plantings Down Across The Board



Plantings Down Across The Board



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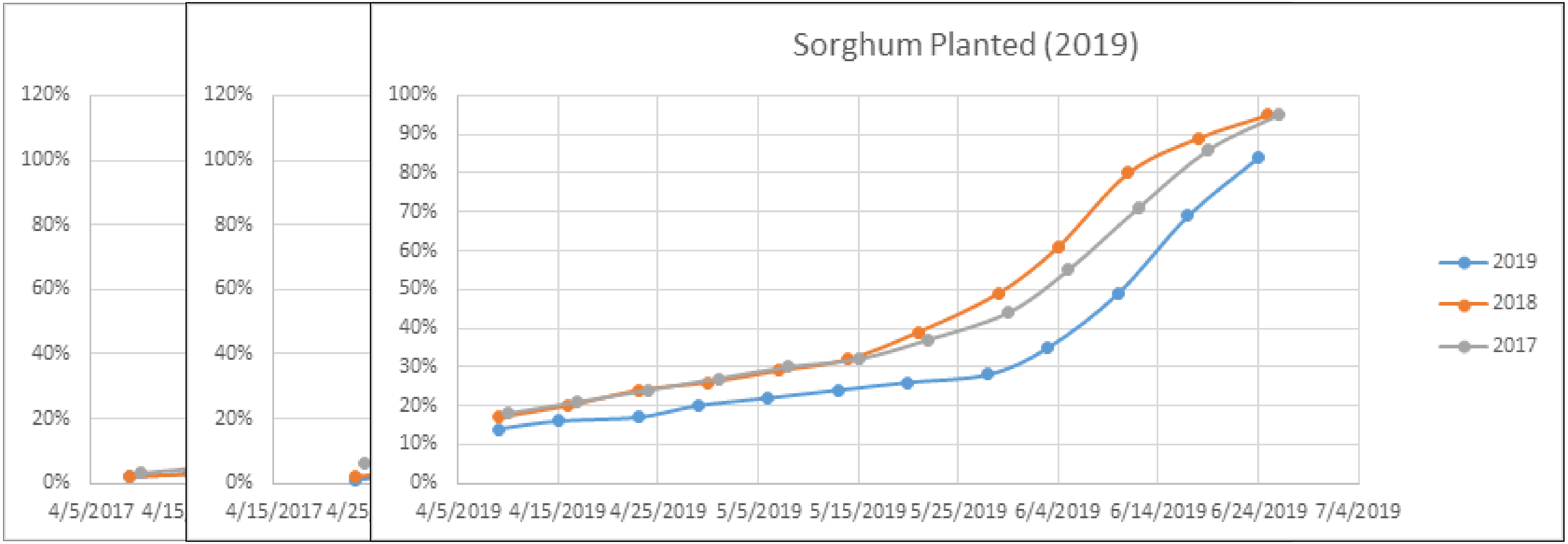

Corn Emerged As Of June 30

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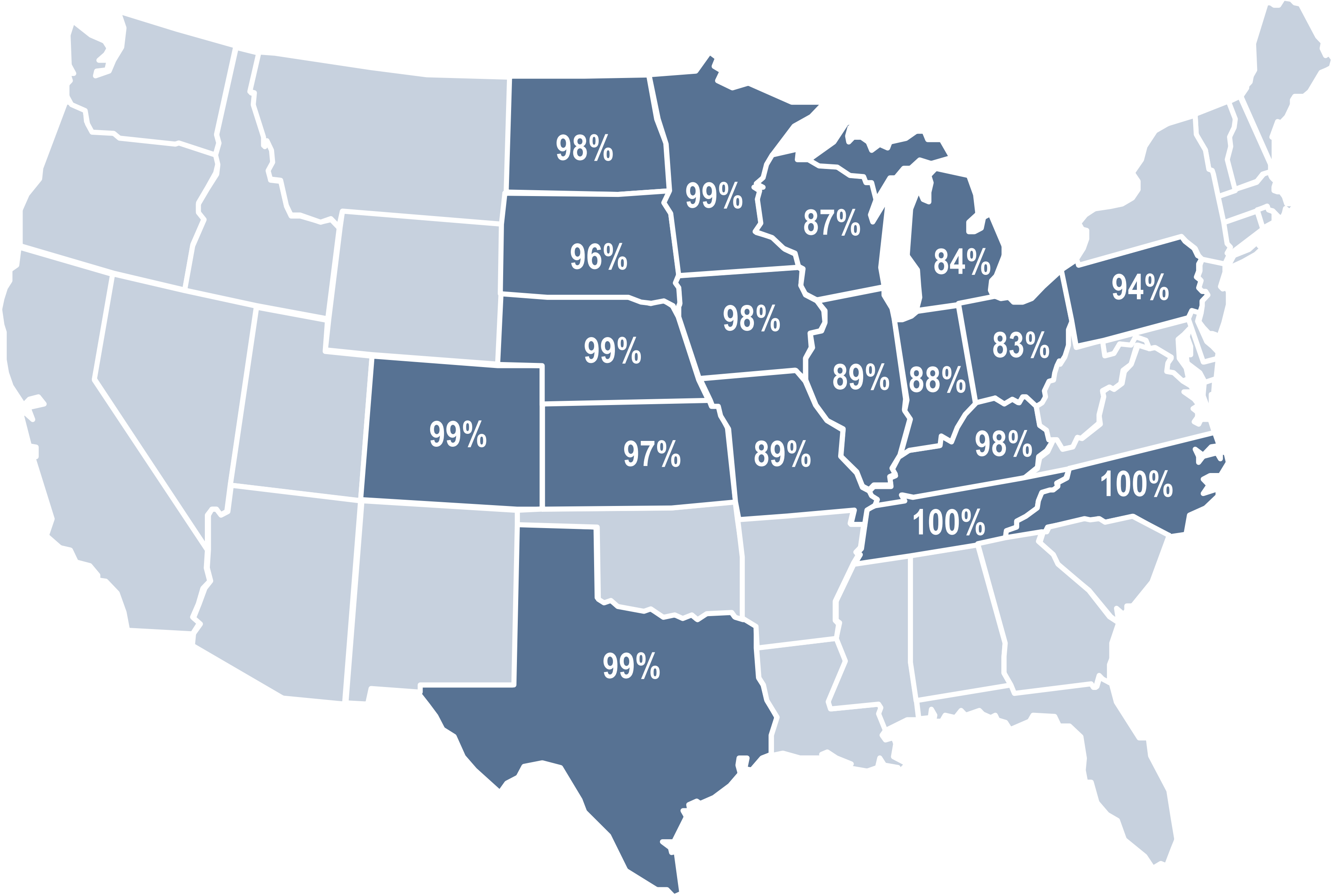

NATIONAL:

June 30, 2019: **94%**
June 30, 2018: **100%**
Five-Year Avg: **100%**

Note: These 18 states highlighted represent 92% of U.S. corn acreage in 2018.

Source: USDA, July 1, 2019

Corn in Good/Excellent Condition As Of June 30

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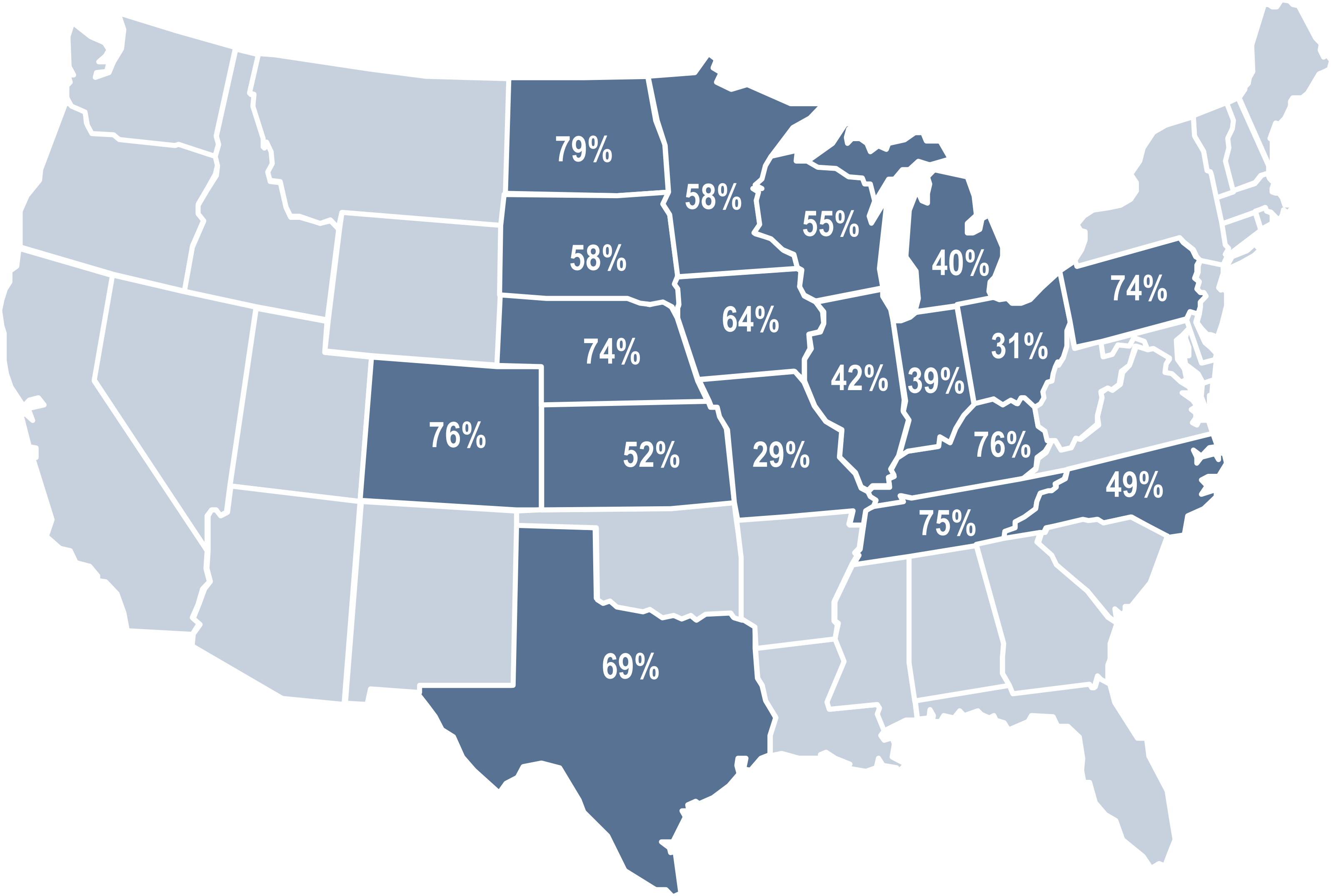

NATIONAL:

June 30, 2019: **56%**
June 30, 2018: **76%**

Note: These 18 states highlighted represent 92% of U.S. corn acreage in 2018.

Source: USDA, July 1, 2019

Planting Troubles In U.S. Affect Supply

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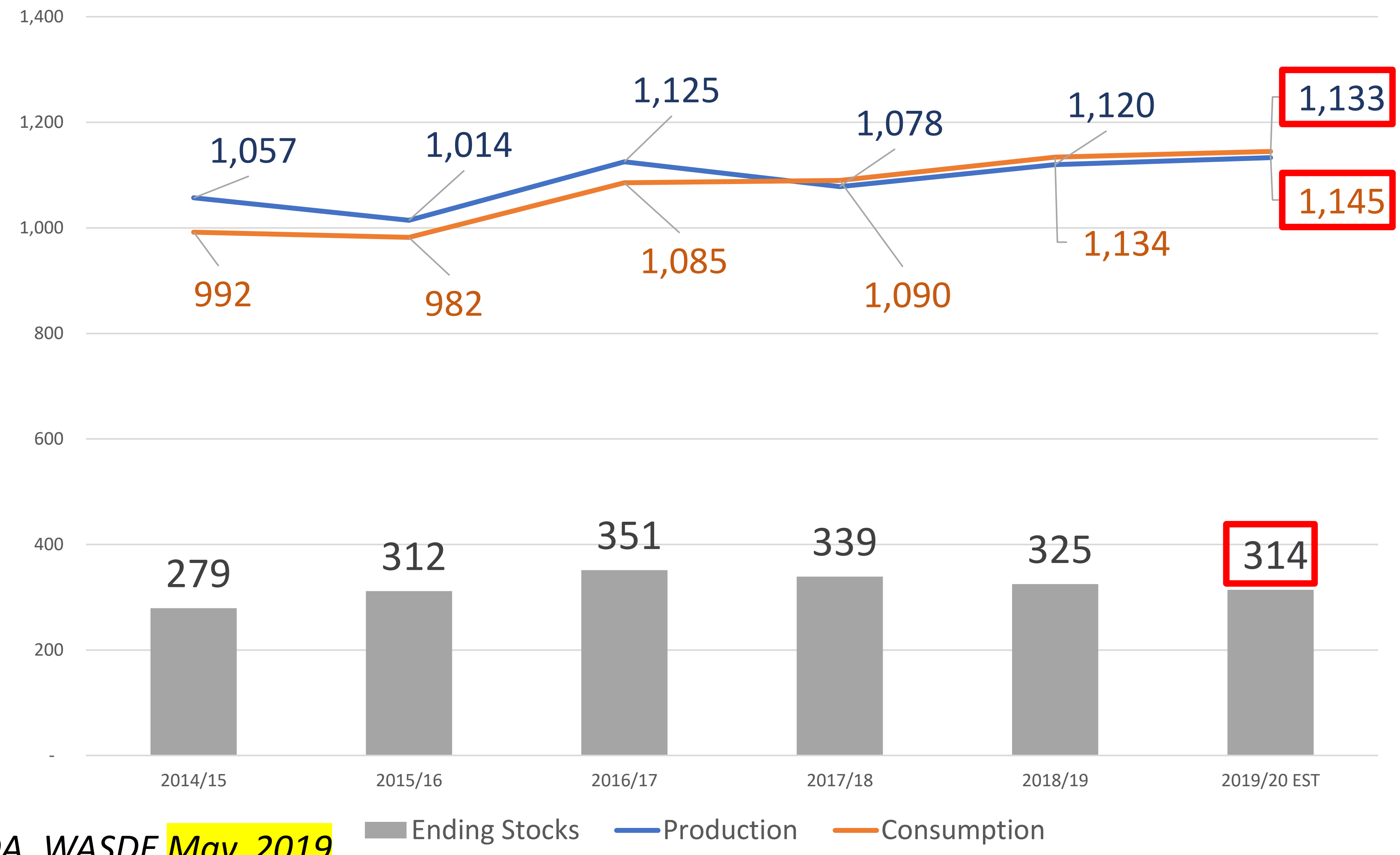
CORN	2017/18	2018/19 Est.	2019/20 Proj. May	2019/20 Proj. Jun
		Million Acres		
Area Planted	90.2	89.1	92.8 *	89.8 *
Area Harvested	82.7	81.7	85.4 *	82.4 *
		Bushels		
Yield per Harvested Acre	176.6	176.4	176.0 *	166.0 *
		Million Bushels		
Beginning Stocks	2,293	2,140	2,095	2,195
Production	14,609	14,420	15,030	13,680
Imports	36	35	35	50
Supply, Total	16,939	16,595	17,160	15,925
Feed and Residual	5,304	5,300	5,450	5,150
Food, Seed & Industrial 2/	7,056	6,900	6,950	6,950
Ethanol & by-products 3/	5,605	5,450	5,500	5,500
Domestic, Total	12,360	12,200	12,400	12,100
Exports	2,438	2,200	2,275	2,150
Use, Total	14,799	14,400	14,675	14,250
Ending Stocks	2,140	2,195	2,485	1,675
Avg. Farm Price ($/bu) 4/	3.36	3.60	3.30	3.80

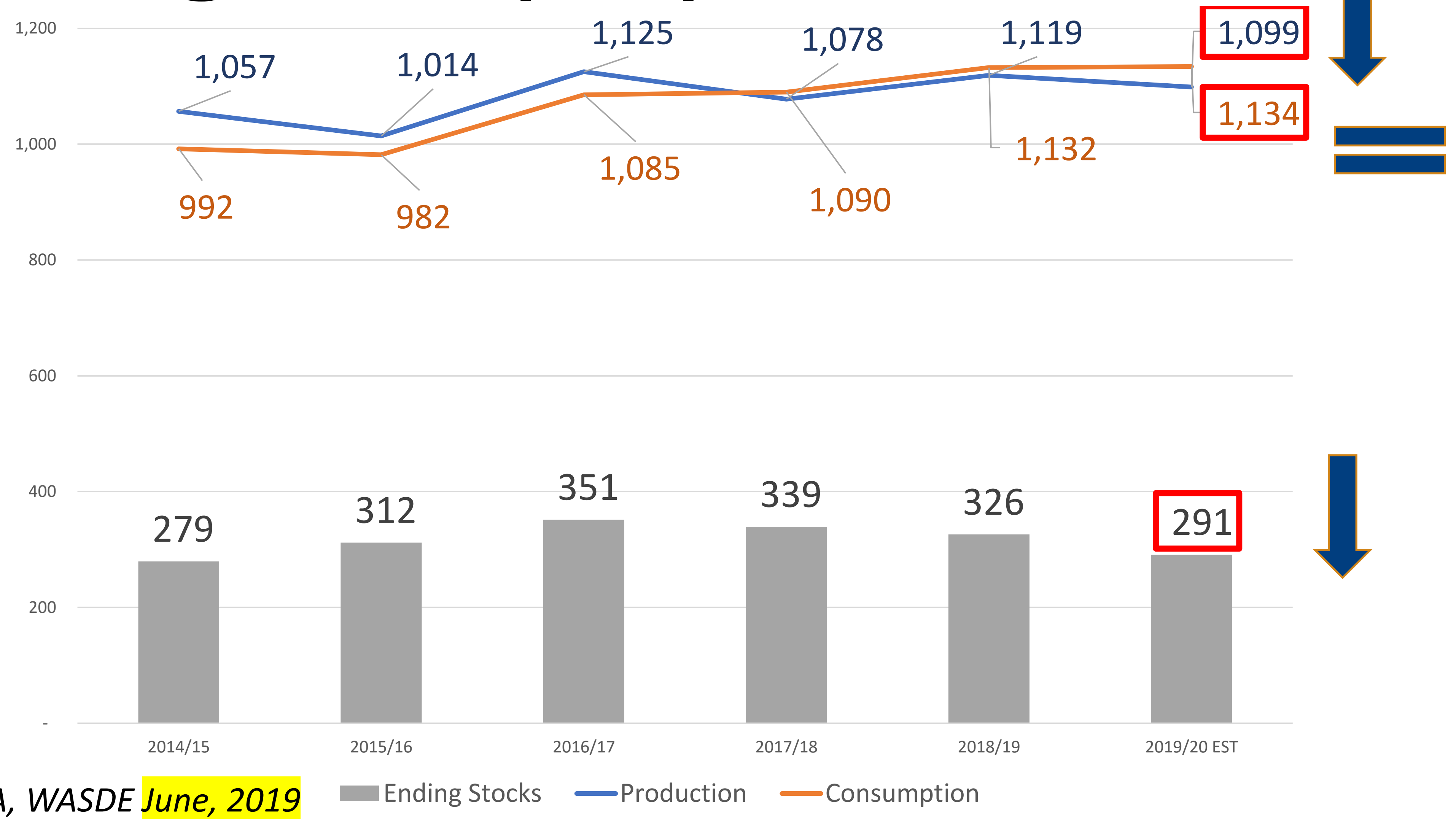
Source: USDA, WASDE June, 2019

Global Production, Consumption, And Ending Stocks (TMT)



Source: *USDA, WASDE May, 2019*

Global Production, Consumption, And Ending Stocks (TMT)



Source: *USDA, WASDE June, 2019*

Market Responds To Planting Fears

Market Responds To Planting Fears

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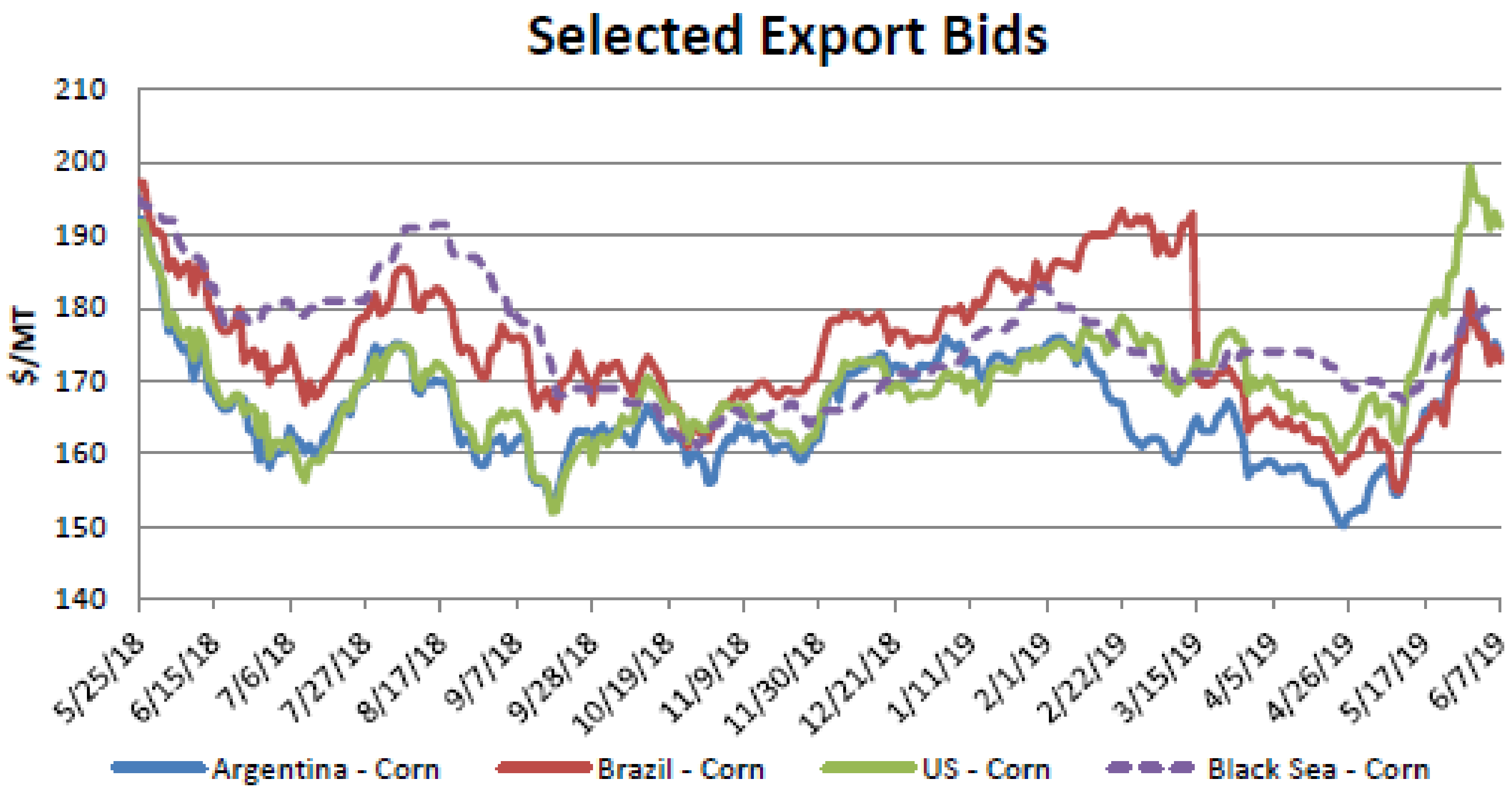
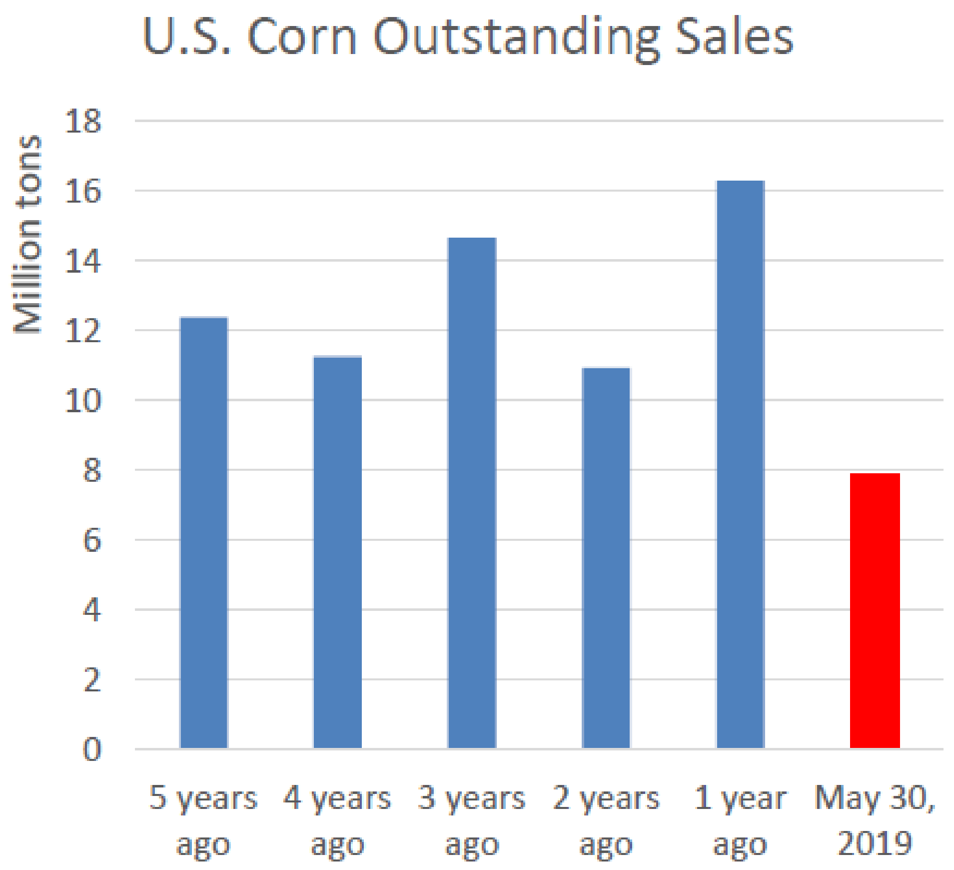


Source: IGC

Rationed Exports

TRADE CHANGES IN 2019/20 (1,000 MT)

Country	Commodity	Attribute	Previous	Current	Change	Reason
Argentina	Corn	Exports	32,000	**33,500**	**1,500**	Larger exportable supplies
Brazil	Corn	Exports	34,000	**35,000**	**1,000**	Reflects strong second crop shipments after September 2019
Russia	Corn	Exports	4,500	**5,000**	**500**	Larger crop
United States	Corn	Imports	850	**1,300**	**450**	Reflects reported purchases from Brazil for delivery after September 2019
		Exports	58,000	**55,000**	**-3,000**	Smaller crop; strong domestic use
Zambia	Corn	Exports	400	**150**	**-250**	Smaller crop



Source: USDA, PS&D June, 2019

Market Conclusions

- U.S. should see a dip in production this year
  - Planting issues lead to decrease in acreage and yield
  - Will still have plenty of corn domestically due to large carryout from last year
  - Futures prices should hover around 4.50 at current projected stocks/use ratio
    - Futures have increased all countries prices, but the U.S. has gone up more than other countries due to elevated basis levels in an attempt to ration exports to appropriate levels
- Globally, the corn crop is strong
  - Record South American and Ukrainian crops projected
  - While significantly cheaper than U.S. origin today, parity should return once market fears flee U.S. and a clearer idea of PSND is achieved

DDGS Production, Supply, & Demand

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DDGS Profile

- Traditionally a 35 profat product
  - Straying away from this product, as DDGS becomes more tailored feed
- For the purpose of this presentation, we will be looking at most liquid market, which is for the below specs.

Parameter	Average	Range	DDGS Contract Spec
Humidity %	10.7	8 –14	12 Maximum
Crude Protein %	30.9	27 – 32.9	27 Maximum
Crude Fat %	7	4 – 12	4 Maximum
Crude Fiber %	7.2	5.4 – 10.4	9 Maximum
Sand/Silica %	6	3 – 9.8	8 Maximum

DDGS Consumption By Species

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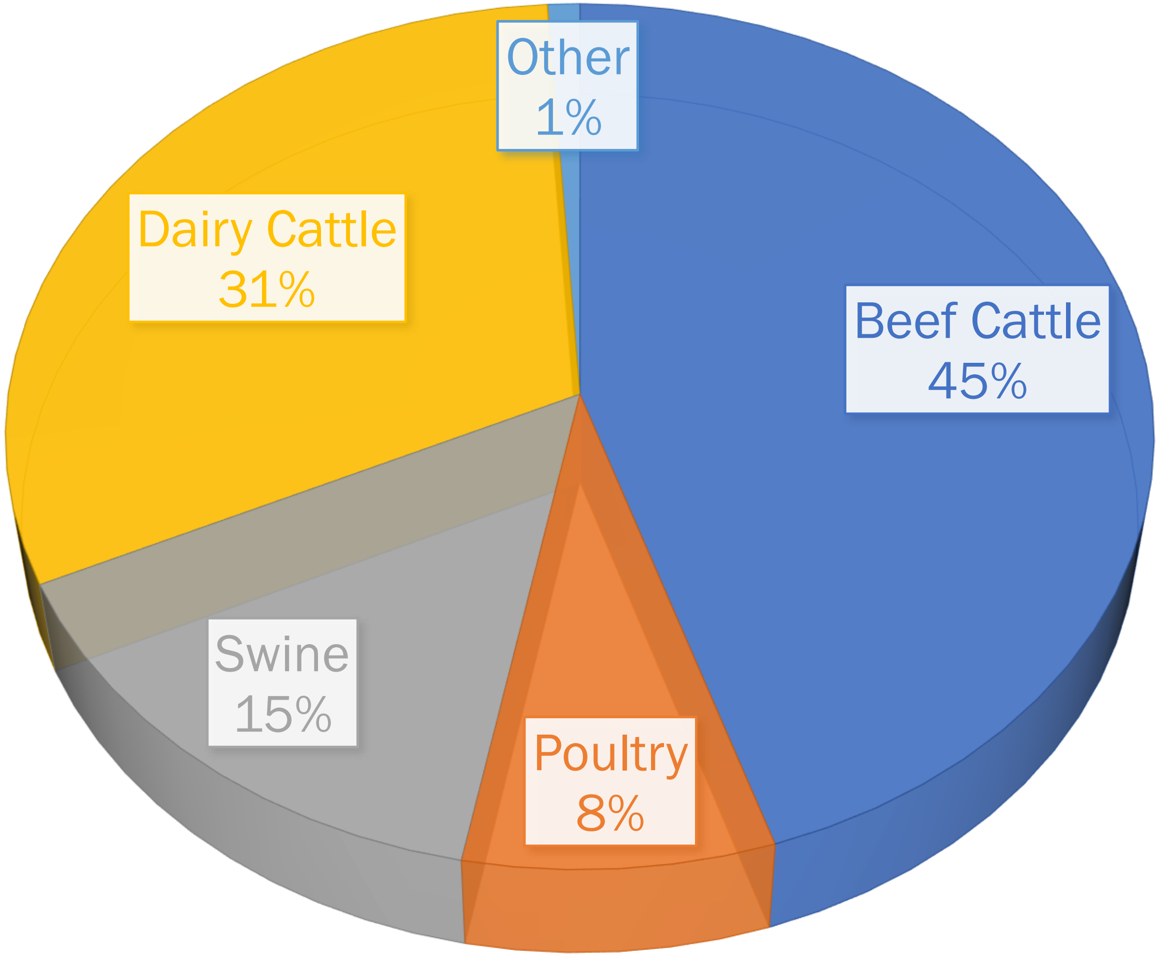
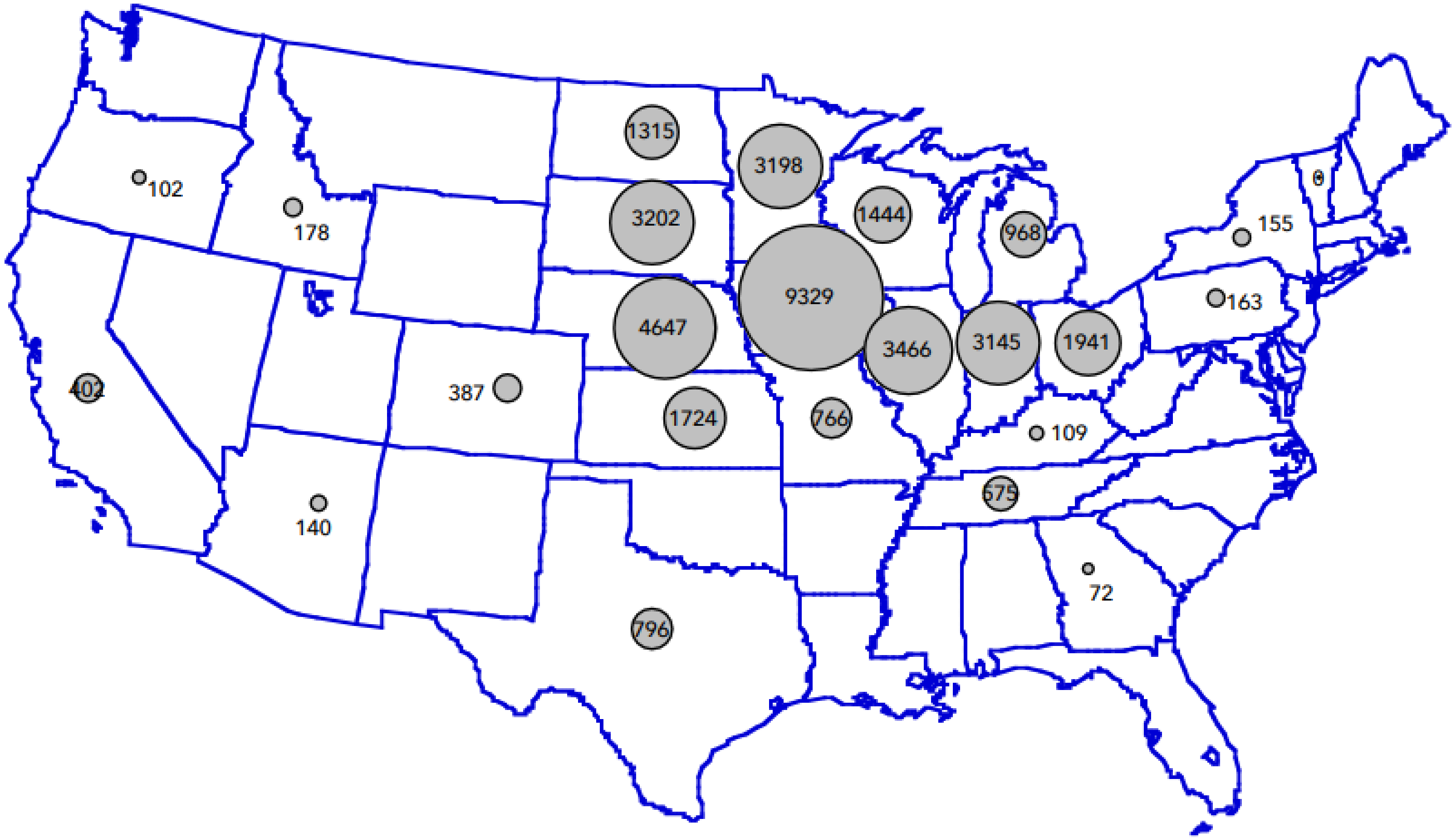


Source: Distillers' Grains Technology Council

DDGS Production By State



Source: The ProExporter Network

DDGS Historical Export Demand

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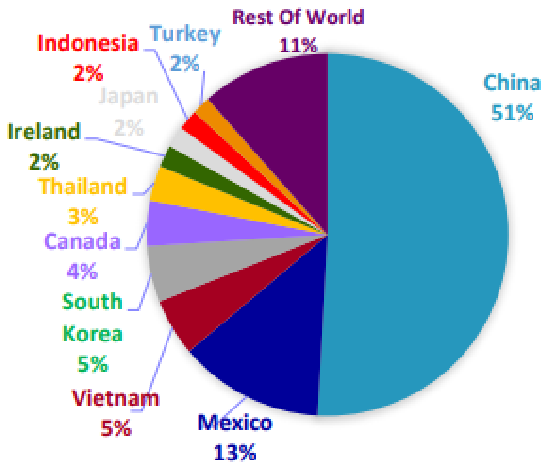
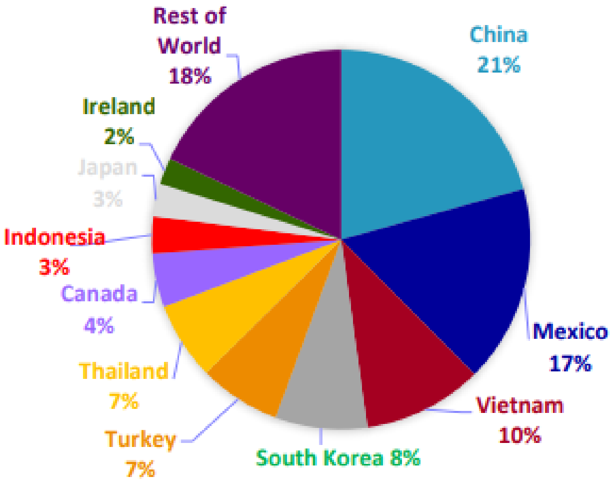
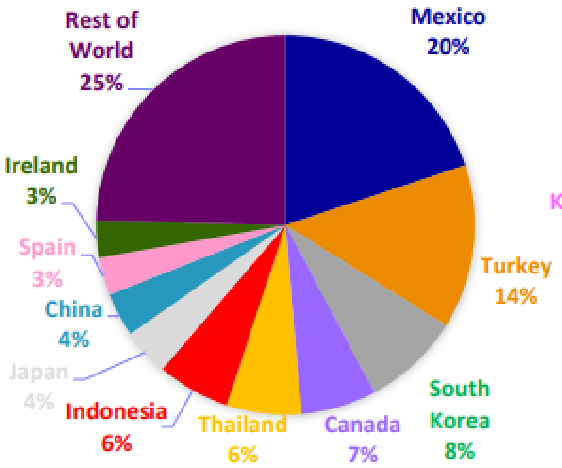
2015



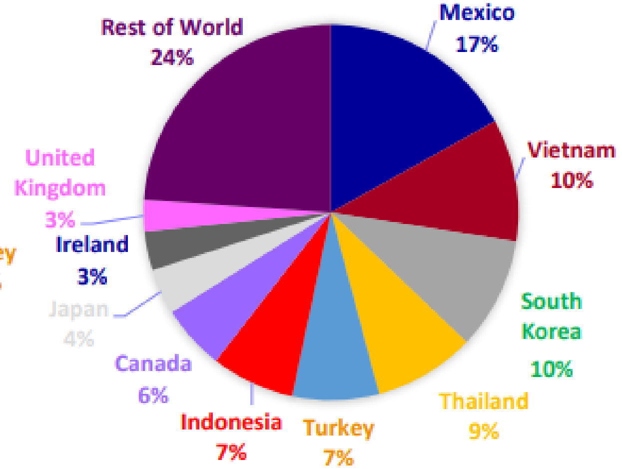
2016



2017



2018



Source: CHS

DDGS Demand Growth Post China

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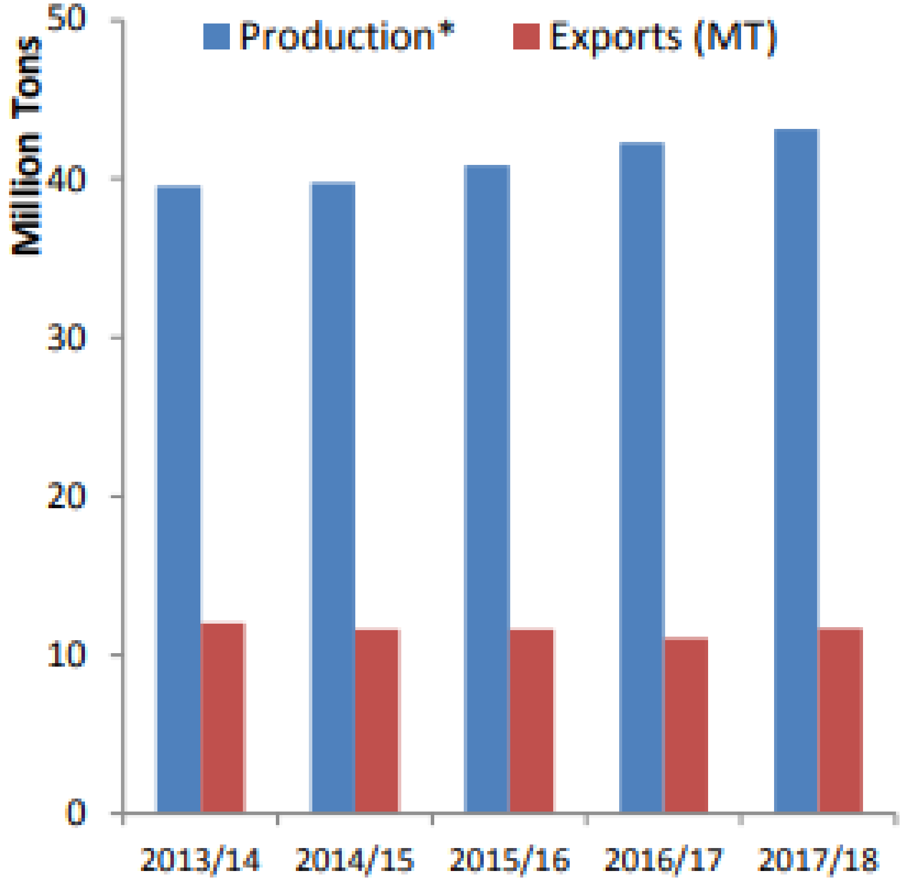
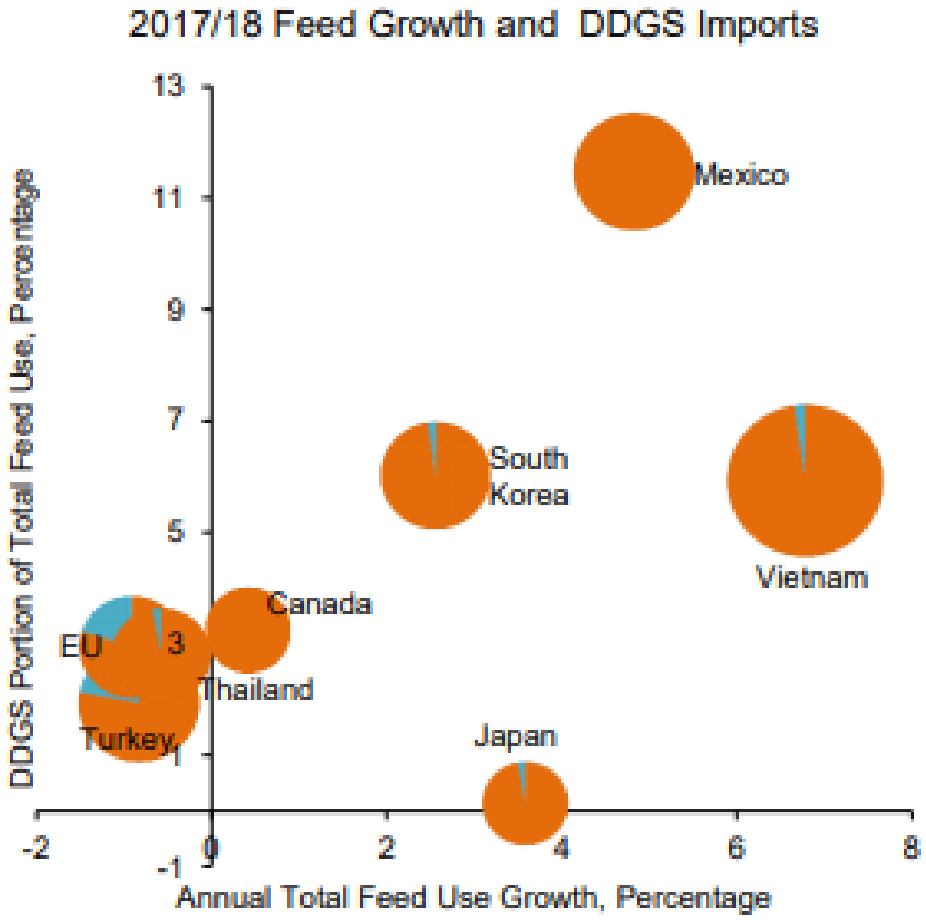
U.S. DDGS, At A Glance





Source: USDA

DDGS Exports Annually

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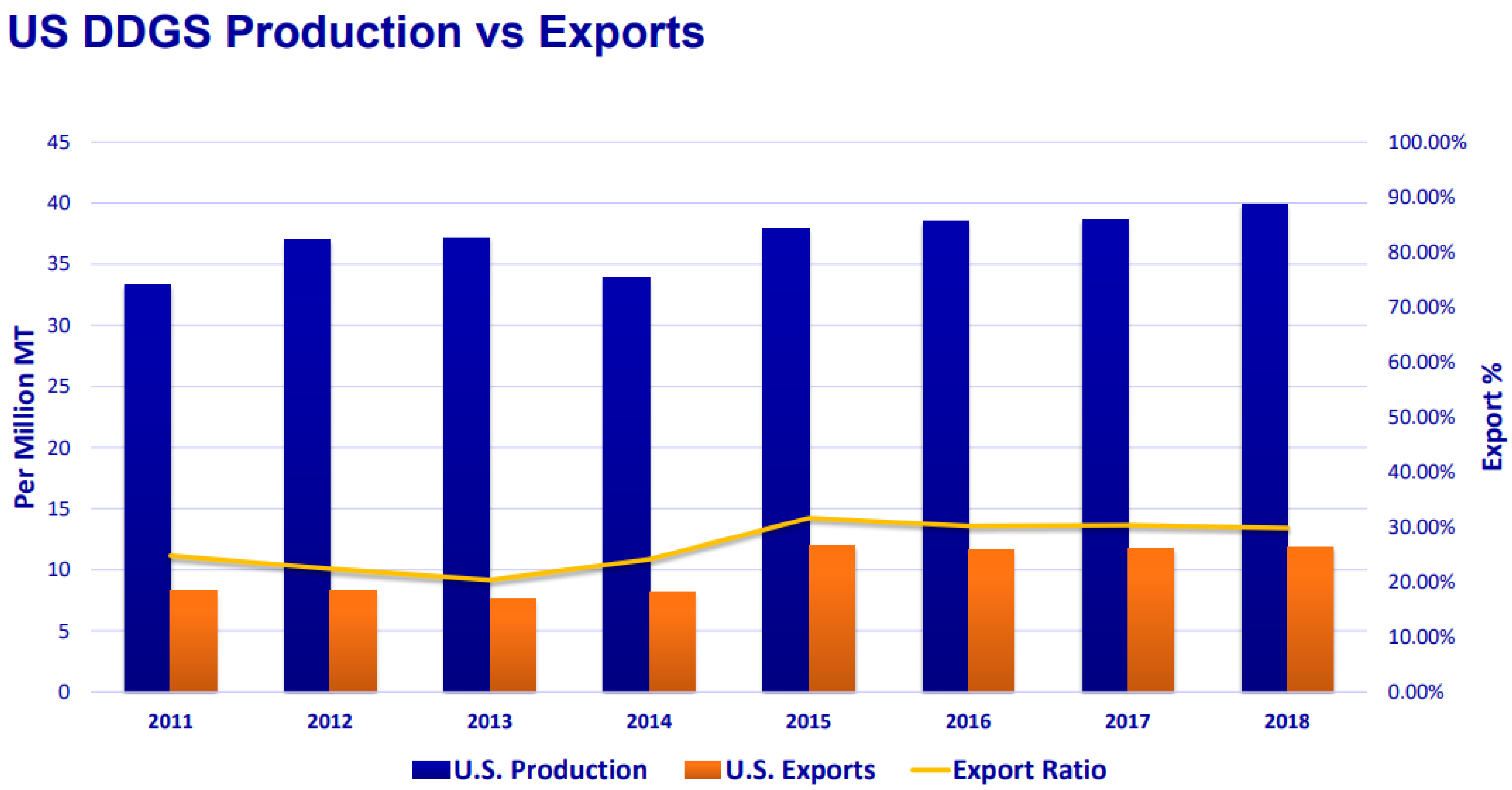

Source: CHS

DDGS 10 Year Projections

Item	Unit	18-19	19-20	20-21	21-22	22-23	23-24	24-25	25-26	26-27	27-28
		Crop Year									
Carry-in	mil bu	2140	2095	2062	1969	1853	1752	2316	2466	2266	2703
Area planted	thou ac	89.1	92.8	93.0	93.0	94.0	94.0	91.0	90.0	93.0	92.0
Area harvested	thou ac	81.7	85.2	85.4	85.4	86.3	86.3	83.6	82.6	85.4	84.5
Yield	bu/ac	176.4	171.3	170.8	171.3	158.7	184.5	189.9	187.3	195.2	197.0
Production	mil bu	14420	14595	14590	14627	13701	15924	15868	15476	16670	16644
Supply	mil bu	16595	16730	16662	16606	15564	17686	18195	17952	18947	19357
Carry-out	mil bu	2095	2062	1969	1853	1752	2316	2466	2266	2703	2857
Disappearance (Use)	mil bu	14501	14668	14693	14753	13812	15370	15728	15686	16243	16500
Feed/Residual Use	mil bu	5229	5534	5600	5600	5500	5900	6100	6000	6200	6300
Residual use	mil bu	336	626	855	822	689	1055	1222	1065	1277	1320
Feed use in state	mil bu	4893	4908	4745	4778	4811	4845	4878	4935	4923	4980
Dairy	mil bu	841	844	815	820	824	829	834	843	840	848
Beef cattle	mil bu	1484	1488	1437	1446	1454	1462	1470	1486	1480	1496
Hogs	mil bu	1168	1172	1135	1144	1153	1163	1172	1188	1186	1201
Poultry	mil bu	1298	1302	1261	1271	1281	1291	1301	1318	1316	1333
Other	mil bu	101	101	98	98	99	99	100	101	101	102
Processing in state	mil bu	6971	7034	7093	7153	7212	7270	7328	7386	7443	7500
Fuel ethanol, wet mill	mil bu	522	522	522	522	522	522	522	522	522	522
Fuel ethanol, dry mill	mil bu	4984	5046	5106	5165	5224	5283	5341	5398	5456	5513
Total fuel ethanol	mil bu	5506	5569	5628	5688	5747	5805	5863	5921	5978	6035
	bil gal	15.9	16.0	16.2	16.5	16.7	16.9	17.2	17.4	17.6	17.8
Total Use	mil bu	14501	14668	14693	14753	13812	15370	15728	15686	16243	16500
Net Exports to foreign	mil bu	-2300	-2100	-2000	-2000	-1100	-2200	-2300	-2300	-2600	-2700
Note. DDG Disposition (na until 06-07), with ruminants 30% ration @ 1.0 feed value of corn; hogs 20% @ 0.8; poultry 5% @ 0.5.											
DDG production	thou mt	38720	39610	40131	40594	40594	41513	41968	42420	42868	43314
Corn displcd by DDG	mil bu	1064	1078	1074	1069	1069	1058	1052	1024	1063	1035
DDG fed to all animals	thou mt	28220	28510	28431	28294	28294	28013	27868	27120	28168	27414
DDG net exports	thou mt	10500	11100	11700	12300	12300	13500	14100	15300	14700	15900
Corn displcd by DDG &CGF	mil bu	1212	1212	1235	1226	1217	1208	1198	1166	1202	1170

Source: The ProExporter Network

How DDGS Is Valued

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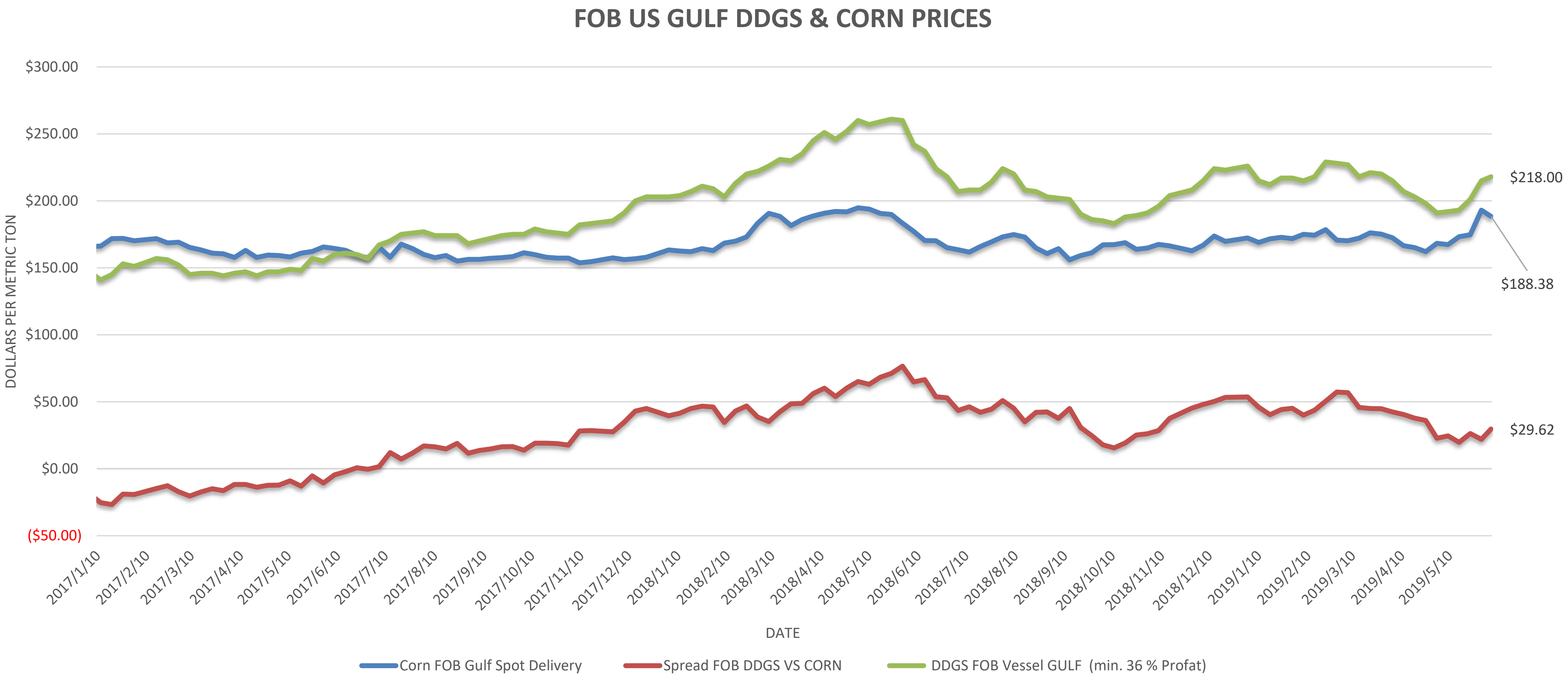
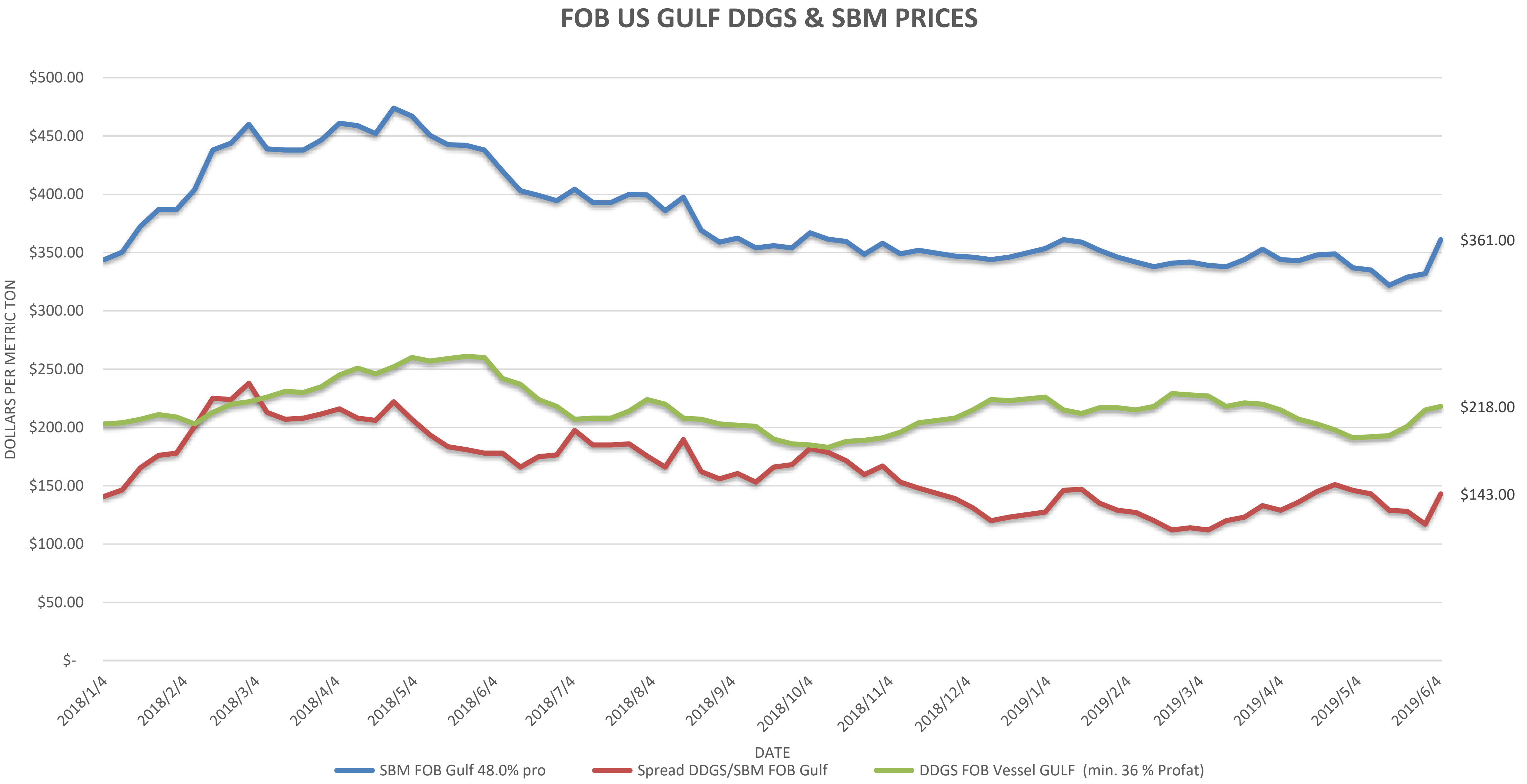


How DDGS Is Valued



Ethanol Margin Struggling

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Source: S&P Global Platts

River Issues Causing Rising DDGS Price

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DDGS Price Table: May 16, 2019 (USD/MT) (Quantity, availability, payment and delivery terms vary)			
Delivery Point Quality Min. 35% Pro-fat combined	**June**	**July**	**August**
Barge CIF New Orleans	183	183	182
FOB Vessel GULF	193	194	195
Rail delivered PNW	193	193	192
Rail delivered California	195	195	196
Mid-Bridge Laredo, TX	195	194	195
FOB Lethbridge, Alberta	177	176	176
40 ft. Containers to South Korea (Busan)	210	211	211
40 ft. Containers to Taiwan (Kaohsiung)	207	208	208
40 ft. Containers to Philippines (Manila)	222	223	223
40 ft. Containers to Indonesia (Jakarta)	228	228	228
40 ft. Containers to Malaysia (Port Kelang)	214	214	215
40 ft. Containers to Vietnam (HCMC)	221	221	221
40 ft. Containers to Japan (Yokohama)	225	225	225
40 ft. containers to Thailand (LCMB)	215	216	216
40 ft. Containers to China (Shanghai)	209	210	211
40 ft. Containers to Bangladesh (Chittagong)	248	248	249
40 ft. Containers to Myanmar (Yangon)	241	241	242
KC Rail Yard (delivered ramp)	172	172	173
Elwood, IL Rail Yard (delivered ramp)	167	168	168

*Source: WPI, *Prices are based on offer indications only; terms of delivery, payment and quality may vary from one supplier to another, impacting the actual value of the price.*

DDGS Price Table: June 6, 2019 (USD/MT) (Quantity, availability, payment and delivery terms vary)			
Delivery Point Quality Min. 35% Pro-fat combined	**July**	**August**	**September**
Barge CIF New Orleans	204	204	204
FOB Vessel GULF	218	220	222
Rail delivered PNW	207	210	211
Rail delivered California	214	216	218
Mid-Bridge Laredo, TX	216	217	217
FOB Lethbridge, Alberta	193	193	194
40 ft. Containers to South Korea (Busan)	226	226	226
40 ft. Containers to Taiwan (Kaohsiung)	222	222	222
40 ft. Containers to Philippines (Manila)	236	236	236
40 ft. Containers to Indonesia (Jakarta)	232	232	232
40 ft. Containers to Malaysia (Port Kelang)	231	231	231
40 ft. Containers to Vietnam (HCMC)	233	233	233
40 ft. Containers to Japan (Yokohama)	241	241	241
40 ft. containers to Thailand (LCMB)	233	233	233
40 ft. Containers to China (Shanghai)	224	224	224
40 ft. Containers to Bangladesh (Chittagong)	256	256	256
40 ft. Containers to Myanmar (Yangon)	256	256	256
KC Rail Yard (delivered ramp)	183	183	183
Elwood, IL Rail Yard (delivered ramp)	184	185	185

*Source: WPI, *Prices are based on offer indications only; terms of delivery, payment and quality may vary from one supplier to another, impacting the actual value of the price.*

Market Conclusions

- DDGS market has been expanding in other countries since China's departure due to AD/CVD case
- DDGS Exports projected to rise over next ten years
  - Domestic consumption will go down
- Prices are currently inflated due to river logistics
  - Export channel very reliant on river system
- Ethanol plants are experiencing negative profit margin
  - Should change with E15 allowance during summer
  - This should help DDGS prices on a FOB basis, due to increased supply and steady demand

DDGS Quality 2018/19 Exports

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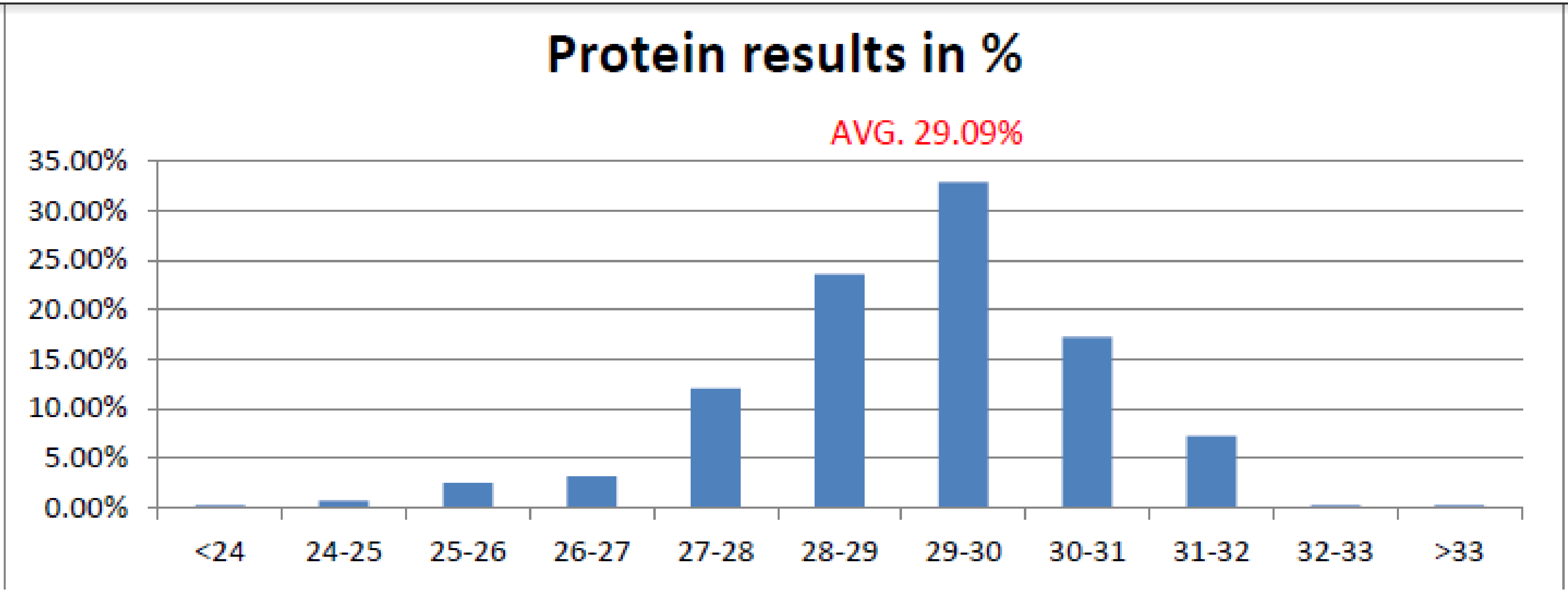

Data courtesy of The Russell Marine Group

DDGS Quality 2018/19 Exports

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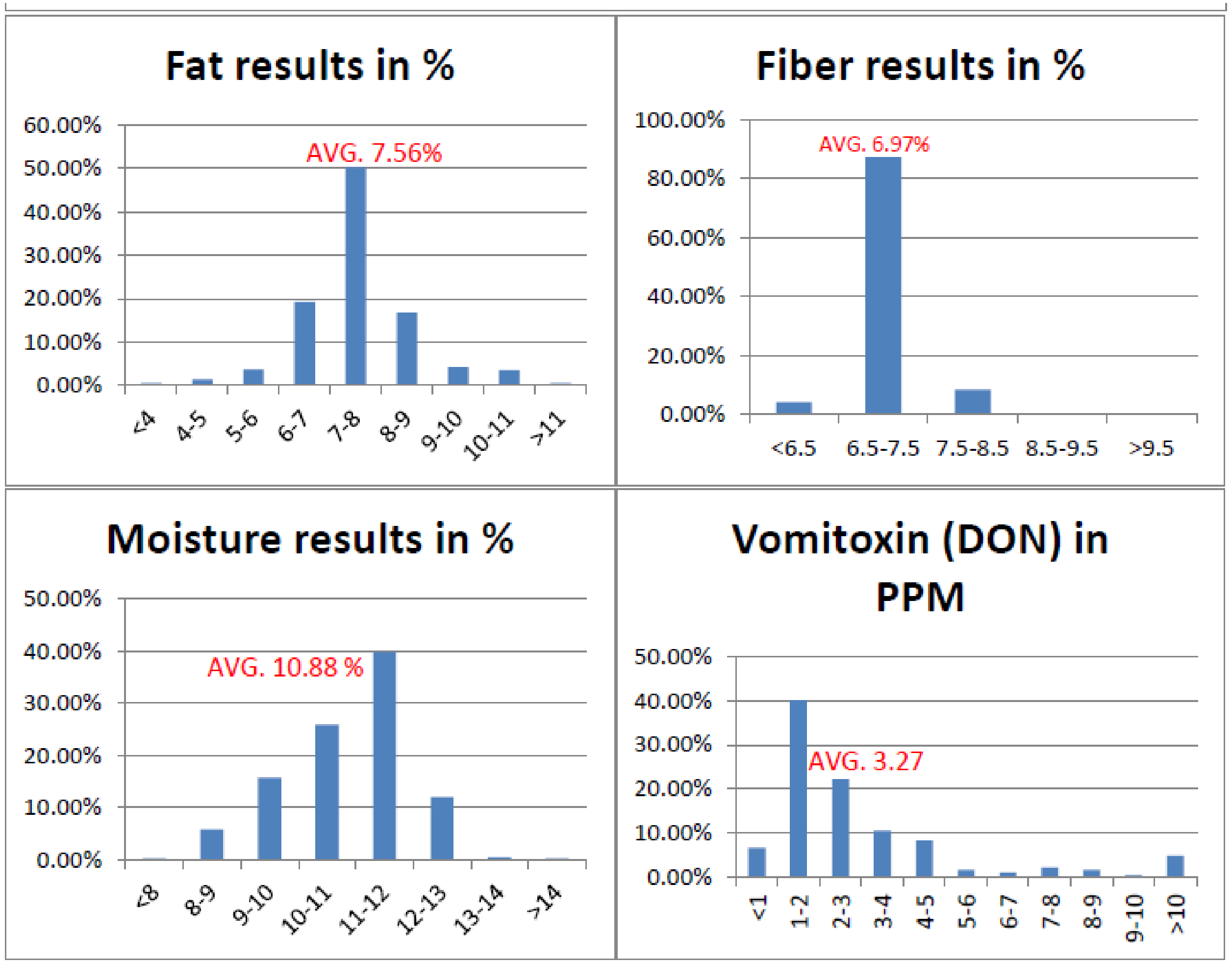

Data courtesy of The Russell Marine Group

THANK YOU!

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