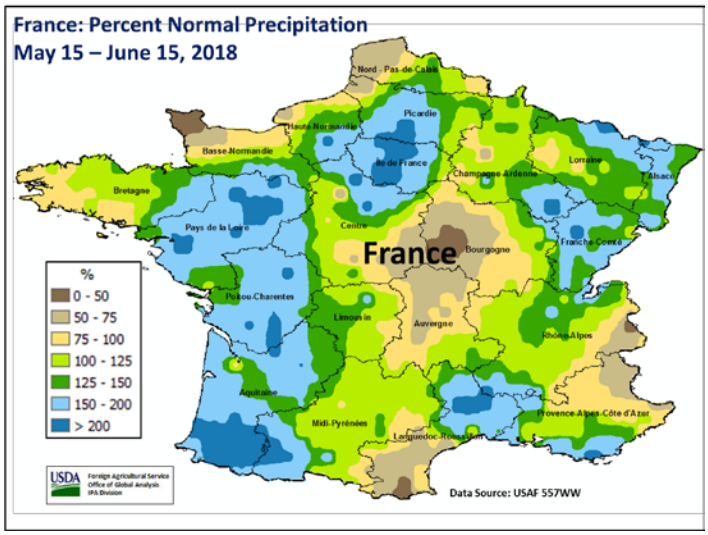
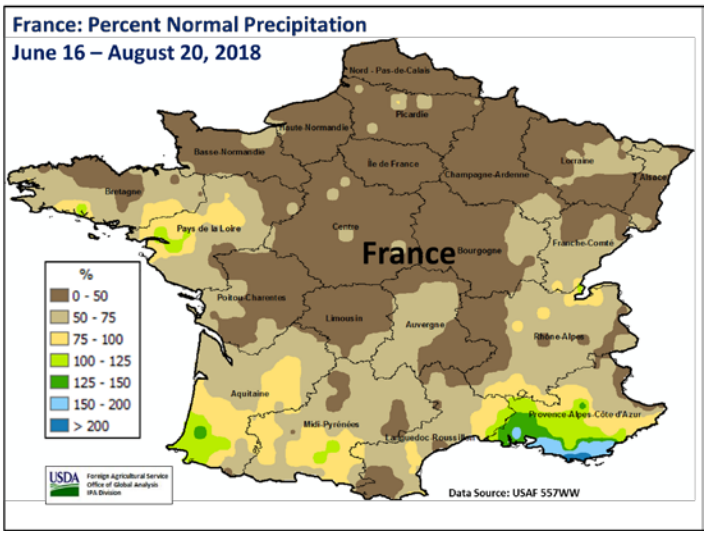
France: Heavy Spring Rains and Summer Drought Negatively Affect 2018/19 Crops

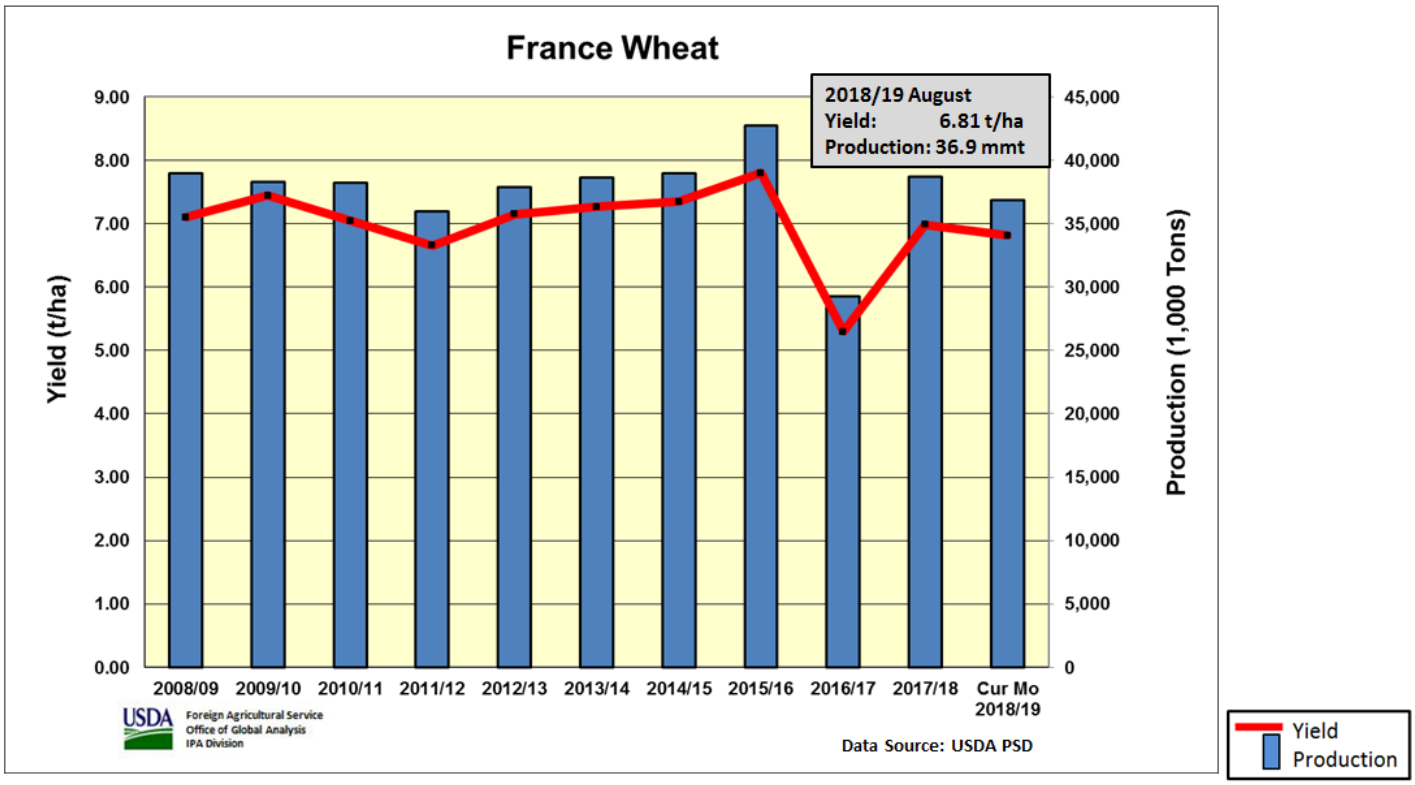




Excessive spring rains (Figure 1) and summer drought (Figure 2), have greatly affected French agriculture during 2018. France is the European Union's (EU) agricultural powerhouse, the leading producer of both wheat (Figure 3) and rapeseed (Figure 4), and usually the largest corn producer (Figure 5) as well. This year, however, Romania exceeded France's corn production. For the 2018/19 season, agriculture in northern Europe has struggled with poor weather, and crop production estimates were lowered throughout the region because of the unfavorable conditions. The most damaging weather has been drought, stretching from Belgium to Estonia (Figure 6). Germany, the EU's second-largest producer of wheat and rapeseed, was severely impacted (Figure 7). Satellite-derived Normalized Difference Vegetation Indices (NDVI) show the decline in vegetation health in Germany dipping below average, starting in early June and lasting all summer (Figure 8). Other large reductions this season include, but are not limited to, Poland, Lithuania, Sweden, Finland, Denmark, the United Kingdom, and Belgium (Figure 9). In France the drought was not as prolonged as in Germany, but France's misfortunes began with excessive rain during spring. Analysts from USDA's Foreign Agricultural Service (FAS), including FAS staff from Paris conducted crop-assessment travel in northern France at the end of June, 2018.

Wheat

USDA now estimates France's wheat production at 36.9 million metric tons (mmt), down 5 percent from last year and down 2 percent from the 5-year average. Yield is now estimated at 6.81 tons per hectare (t/ha), compared to 6.99 t/ha last year, and down 2 percent from the 5-year average. Area is estimated at 5.4 million hectares, down 2 percent from last year's record area and down slightly from the 5-year average. (Figure 10)



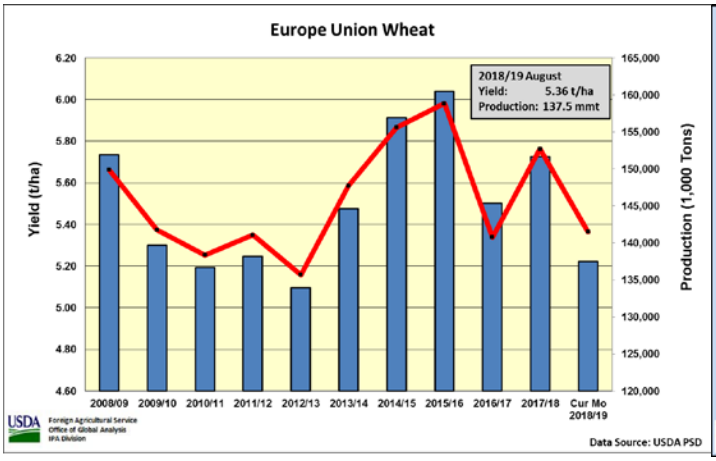
During mid-June, wheat in France was observed to be in generally good condition (See Figure 11). Spring rainfall was much higher than average and total rainfall in some areas of northern France were as high as in 2016 when wheat production suffered a 30-year low; however, the 2018 weather pattern was not as detrimental. This year's weather pattern had a sufficient number of sunny days between storms, unlike 2016 when persistent rain and cloud-cover diminished photosynthesis, which is key for grain development. This season, rainfall during May and early June was abundant, and farmers were expecting crops on well-drained, sandy soils to perform better than those on moisture-holding clay soils, which is atypical. The predominant spring weather pattern brought rainfall and cool temperatures to the wheat belt of northern France, but the pattern broke in mid-June. Above-average temperatures and dryness dominated weather conditions into August, accelerating plant growth and advancing the harvest date. Wheat development, which had been delayed by the cool, wet spring weather, rapidly responded to the switch to warmer temperatures. Harvesting of wheat began in late June and lasted into July, a couple weeks ahead of normal. Wheat sowings in northern France typically occur in October and November, while flowering occurs in mid-May, and harvest in July and August.

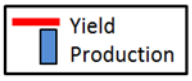
Prior to the weather reversal in mid-June, conditions were favorable for fungi such as fusarium. In addition, leaf rust was observed on wheat in many fields. The disease pressures and moisture deficit in late June and July reduced grainfill potential, lowering yield. August reductions in USDA's estimate for French wheat production reflect the effects of drought during grainfill, while earlier reductions in July were related to excessive moisture problems such as increased pest and disease pressures. The most common insect problem observed by FAS staff was the orange blight midge. Eggs of this bug are laid in wheat flowers during the blossoming phase. The larva grows as it eats the grain kernel. This process lowers yield (Figures 12 and 13). According to recent reports, harvest was finished during the first week of August with overall good quality, including relatively high protein content and high test weights. FranceAgriMer reports that 91 percent of soft wheat has protein levels between 11.5 and 12.5 percent. Results are mixed, however, with some

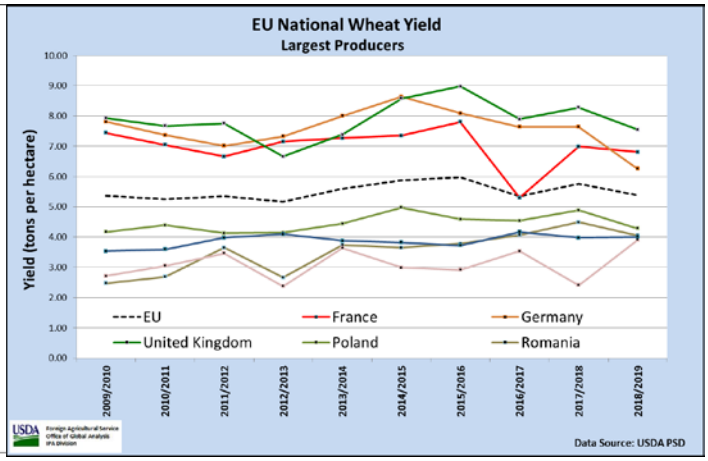
grain registering low protein levels because of heavy rains in early June, although subsequent dryness prior to harvest improved protein content. On August 9 FranceAgrimer reported that the wheat crop showed good milling quality.

France is also the EU's largest durum wheat producer, with production usually around or just below 2.0 million metric tons. Quality is critical in durum wheat, and perhaps the most detrimental factor for durum quality is heavy rains in May or June. Too much water during flowering can quickly deteriorate quality and cause fusarium. During both May and early June, heavy rain fell over much of the French durum area.

Despite the reductions, wheat production in France remains the largest within EU (Figure 14) and wheat yields in France are among the highest in the EU (Figure 15). Overall EU wheat production is the lowest since 2012/13 (Figure 16) but average EU wheat yields (Figure 17) remain relatively consistent due to increases in Romania.

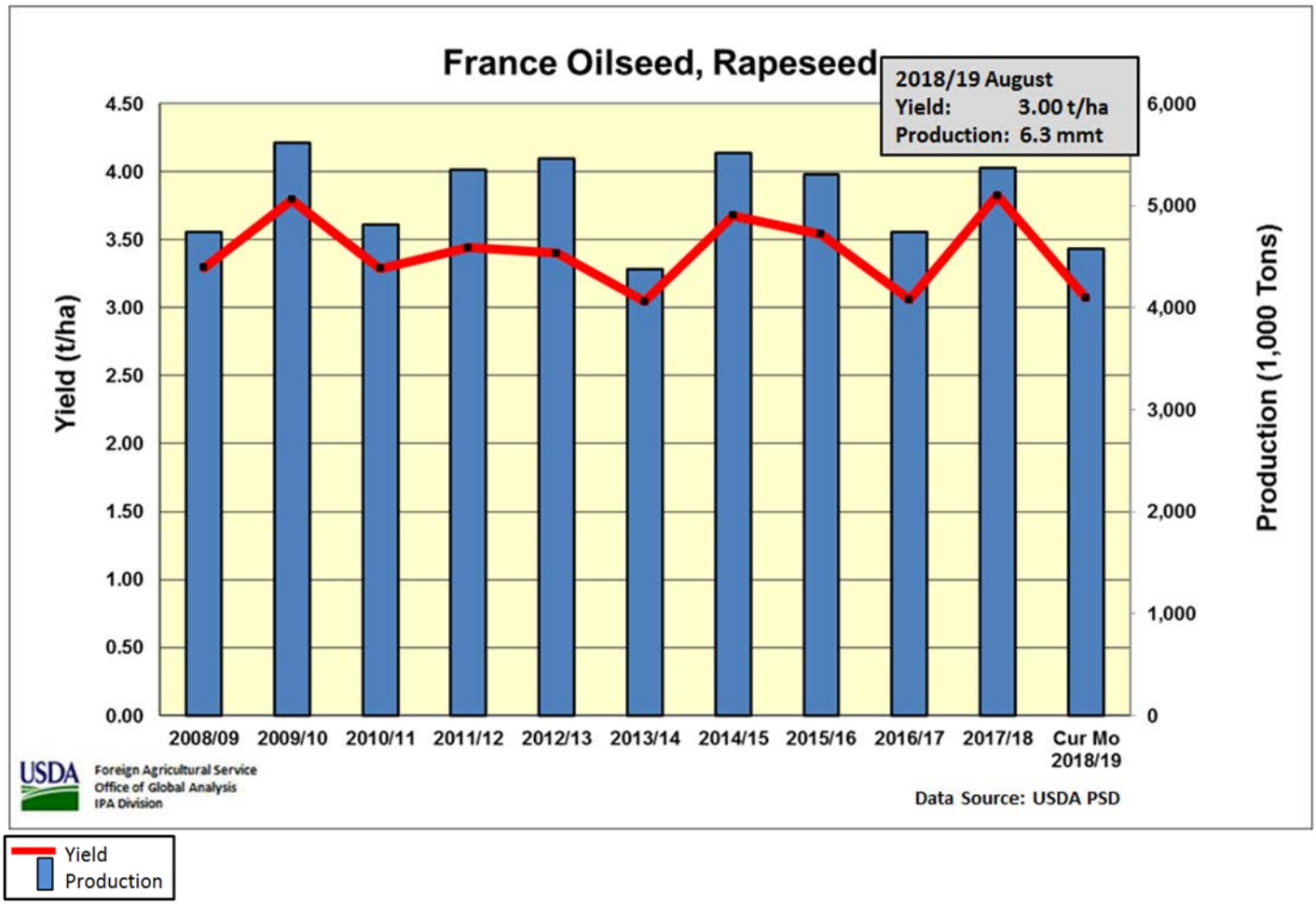






Rapeseed

France's rapeseed production is estimated at 4.6 mmt, down 15 percent from last year and down 10 percent from the 5-year average. Yield is estimated at 3.07 t/ha, down 20 percent from last year and down 10 percent from the 5-year average. Area is estimated at 1.5 mha, up 0.1 mha from last year and nearly unchanged from the 5-year average (See Figure 18).



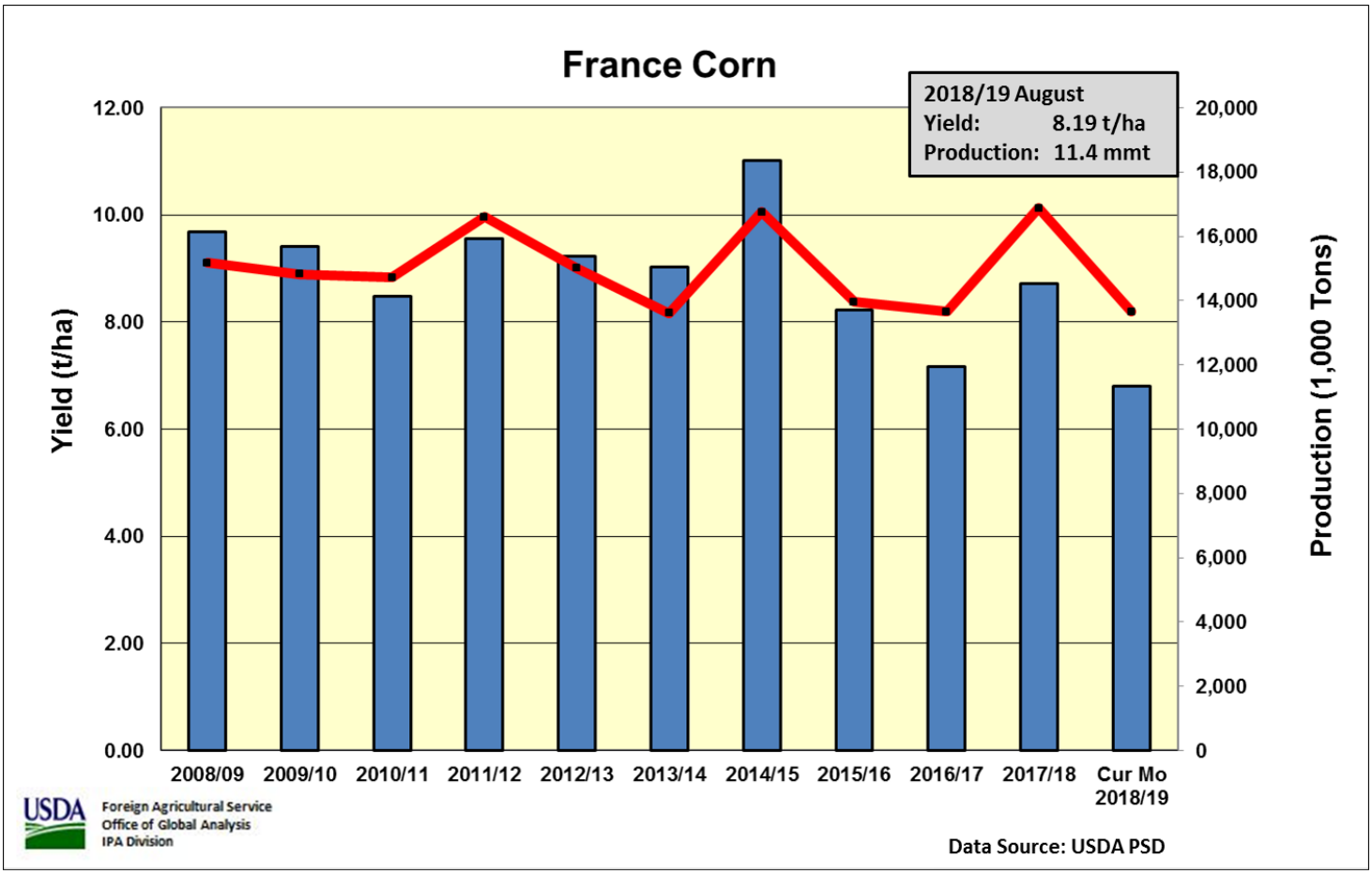
The EU's ban on neonicotinoid pesticides has caused French farmer frustration over increased insect populations. According to farmers interviewed during crop travel, the remaining permitted pesticides are limited and not as effective. The EU ban covers most member states, although a few countries have been granted exemptions. Farmers feel this is an unfair burden preventing them from being competitive. Usually controlled by neonicotinoids, the Cabbage Stem Flea Beetle (*Psylliodes chrysocephala*) is the most problematic pest for rapeseed. It burrows into the rapeseed stalk in autumn, eating and destroying the cellulose material inside. This action disrupts and prevents water and nutrients from reaching the plant's leaves and seedpods. Often the plant is so damaged that the plant either dies or dries down early. The result is a premature end to podfill, with smaller seeds and fewer pods (Figure 19). Making matters worse, due to excessive spring and winter rain, rapeseed stalks were not as thick as normal. Thinner stalks permit the beetles to bore more easily into the plant. (Figures 20, 21, and 22). According to farm discussions in June, there is a high likelihood of reduced rapeseed area in the future as farmers limit rapeseed within their crop rotation. Farmers also expect more regulations which would limit commercial pesticide availability for this rapeseed pest. Excessive spring rainfall, combined with a neonicotinoid ban, are the likely factors behind the heavy presence of pests in 2018/19 rapeseed.

Rapeseed can be a resilient crop due to its ability to flower over an extended period, however this year at the end of March a severe freeze damaged plants just prior to April flowering. Instead of the flowering period lasting 4 to 6 weeks as normal, it only lasted two. Fewer flowers resulted in fewer pods and lower yield. Seeds were also smaller-than-average. Almost every farmer visited during the tour emphasized this shortened 2018 rapeseed flowering period as the primary reason for lower yields. Rapeseed sowing typically occurs at the end of August and through September, flowering occurs in April, and harvesting takes place in July. Clear, spring days with cool temperatures are ideal for growth of flowers and yield.

EU rapeseed production and yields have generally declined over the last 5 years (Figure 23).
France, Germany, and Poland are the largest rapeseed producers within the EU (Figure 24).

Corn

France's corn production is estimated at 11.4 mmt, down 22 percent from last year and down 23 percent from the 5-year average. Area is estimated at 1.4 mha, 4 percent below last year and 16 percent below the 5-year average. Yield is estimated at 8.19 t/ha, down 19 percent from last year and down 9 percent from the 5-year average (Figure 25).



Corn in France also suffered from adverse 2018 weather problems. Heavy spring rains delayed and prevented corn plantings, reduced sown area, and prevented ideal sowing dates. Low corn prices also factored into less planted area. The lack of rain during mid-summer reduced yield and also caused a further reduction in area. The drought affected fodder supplies which had been running low, luring farmers to switch grain corn area into silage corn in order to feed animals. This action further resulted in a net loss of corn for grain area. France has a significant amount of irrigated corn, which helps mitigate low rainfall periods. However, not all corn is irrigated. In some areas restrictions and bans have been placed on irrigation (Figure 26). In August, FranceAgriMer, lowered its qualitative rating on the national corn crop. During late summer, rainfall returned to France. This late-season rain has the potential of aiding the crop because harvest is not until September and October.

Despite the 22-percent decrease in corn production in France, EUs corn production remains high (Figure 27). In 2018/19, Romania is a larger producer of corn in the EU than France (See Figure 28).

Barley

France's barley production, which is a combination of both winter and spring barley, is now estimated at 12.0 mmt, down slightly from last year but up 4 percent from the 5-year average. Yield is now expected at 6.45 t/ha, up 2 percent from last year and up 1 percent from the 5-year average. Area is estimated at 1.9 mha, down 3 percent from last year but up 3 percent from the 5-year average.

During the last week of June, FAS travelers observed combines in the fields collecting winter barley. According to farmers, barley harvesting was 2 to 3 weeks ahead of normal. The heavy May and June rains affected wheat, but had little impact on the advanced barley crop. The barley heads were full and heavy, making them susceptible to lodging; however, little damage is expected. Fortunately for barley farmers, the heavy rains came after the sensitive flowering stage, while drought arrived late in senescence, that is, after kernels were mostly filled (Figure 29).

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Current area and production estimates for grains and other agricultural commodities are available on IPAD's Agricultural Production page:
Crop Explorer https://ipad.fas.usda.gov/cropexplorer/or

Production, Supply and Distribution Database (PSD Online):
http://apps.fas.usda.gov/psdonline/psdHome.aspx
For country-specific area, yield, and production estimates within the European Union (EU), please go to PSD Online at https://apps.fas.usda.gov/PSDOnline/app/index.html#/app/home, and select "Downloadable Data Sets." Select the zipped file for "EU Countries Area & Production."
Figure 1

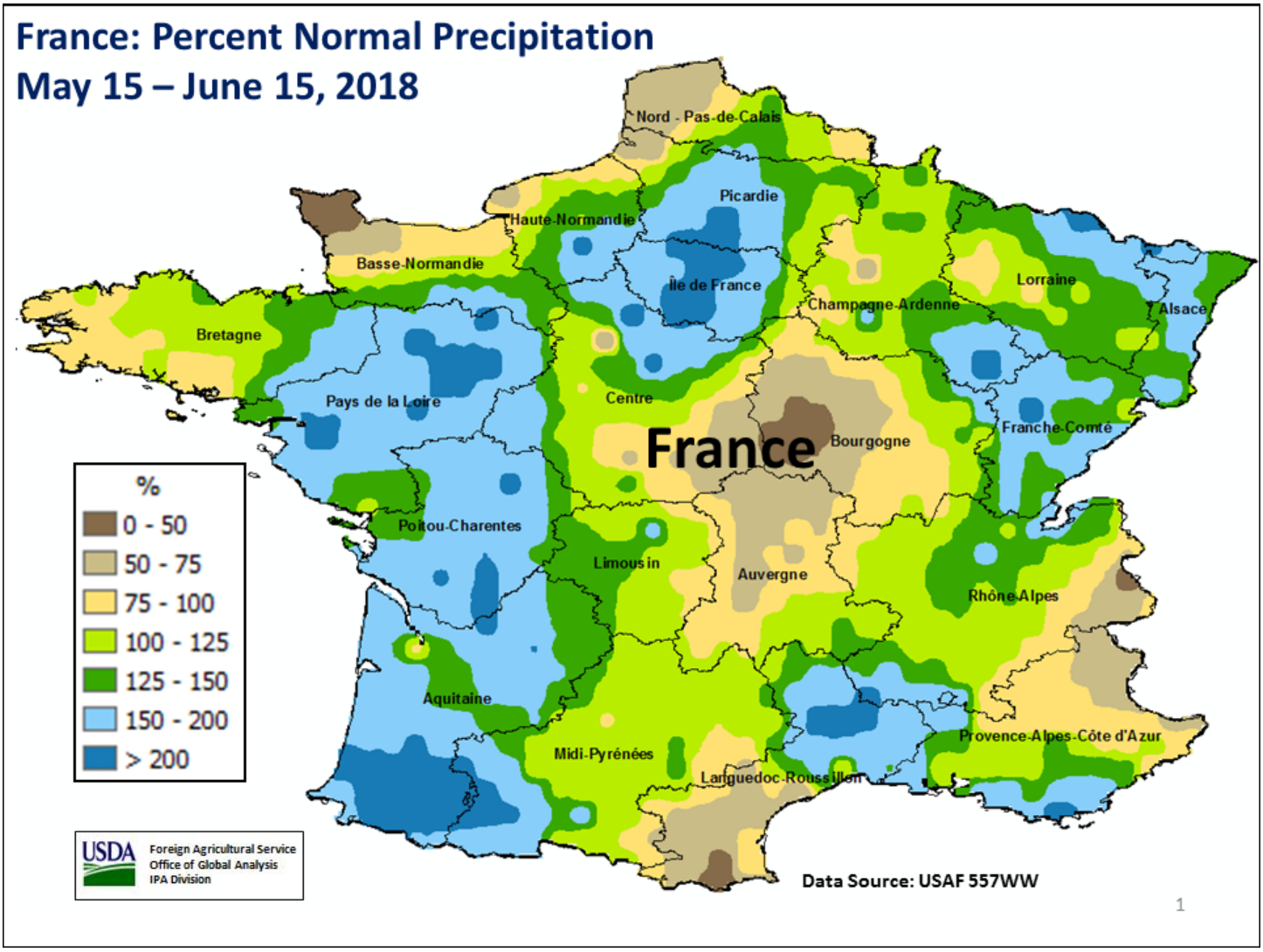
France: Percent Normal Precipitation
May 15 – June 15, 2018
Nord - Pas-de-Calais
Picardie
Haute-Normandie
Basse-Normandie
Île de France
Champagne-Ardenne
Lorraine
Alsace
Bretagne
Pays de la Loire
Centre
France
Bourgogne
Franche-Comté
Poitou-Charentes
Limousin
Auvergne
Rhône-Alpes
Aquitaine
Midi-Pyrénées
Languedoc-Roussillon
Provence-Alpes-Côte d'Azur
%
0 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 200
> 200
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USAF 557WW
1

Figure 2

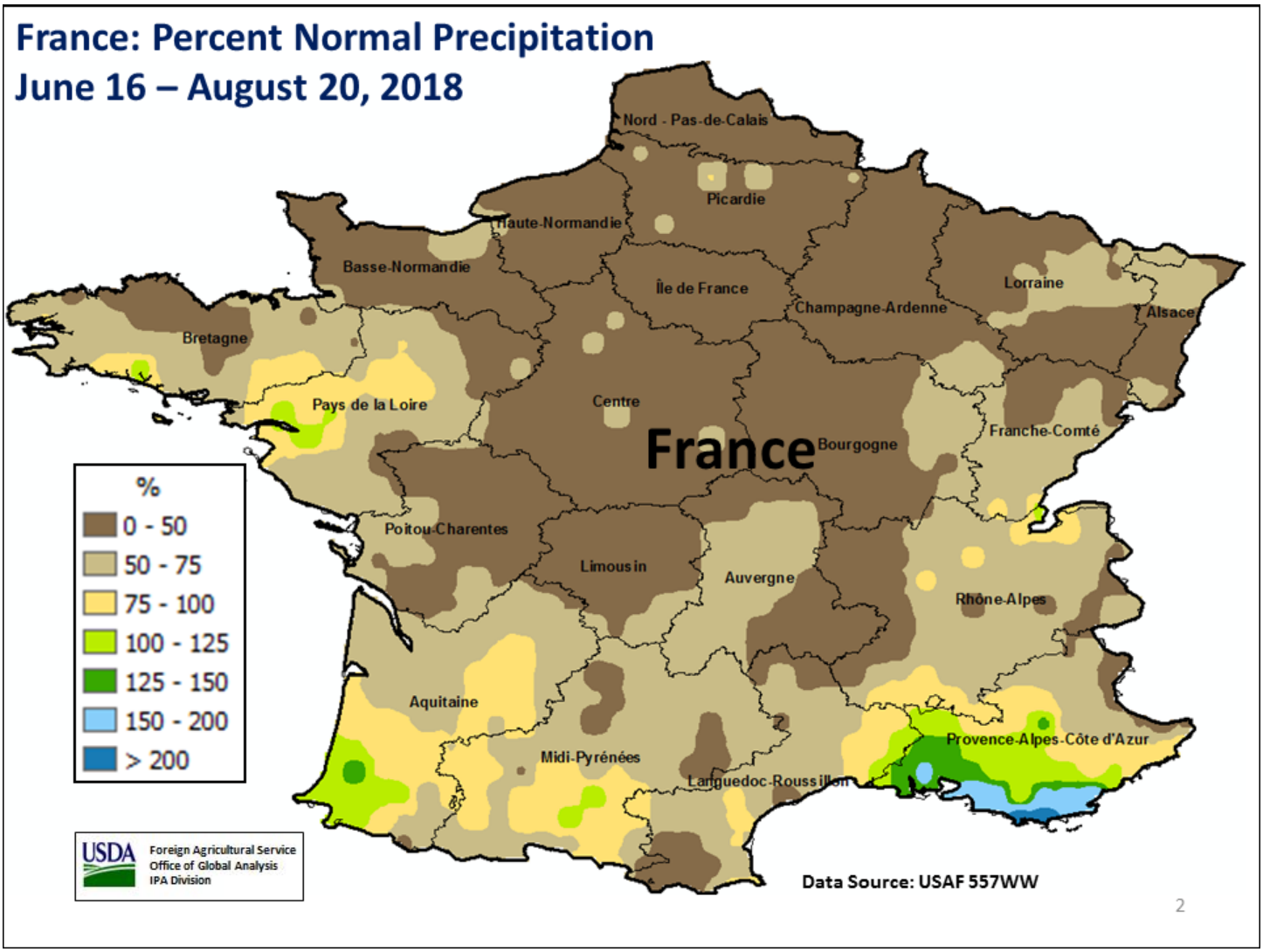
France: Percent Normal Precipitation
June 16 – August 20, 2018
Nord - Pas-de-Calais
Picardie
Haute-Normandie
Basse-Normandie
Île de France
Champagne-Ardenne
Lorraine
Alsace
Bretagne
Pays de la Loire
Centre
France
Bourgogne
Franche-Comté
Poitou-Charentes
Limousin
Auvergne
Rhône-Alpes
Aquitaine
Midi-Pyrénées
Languedoc-Roussillon
Provence-Alpes-Côte d'Azur
%
0 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 200
> 200
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USAF 557WW
2

Figure 3

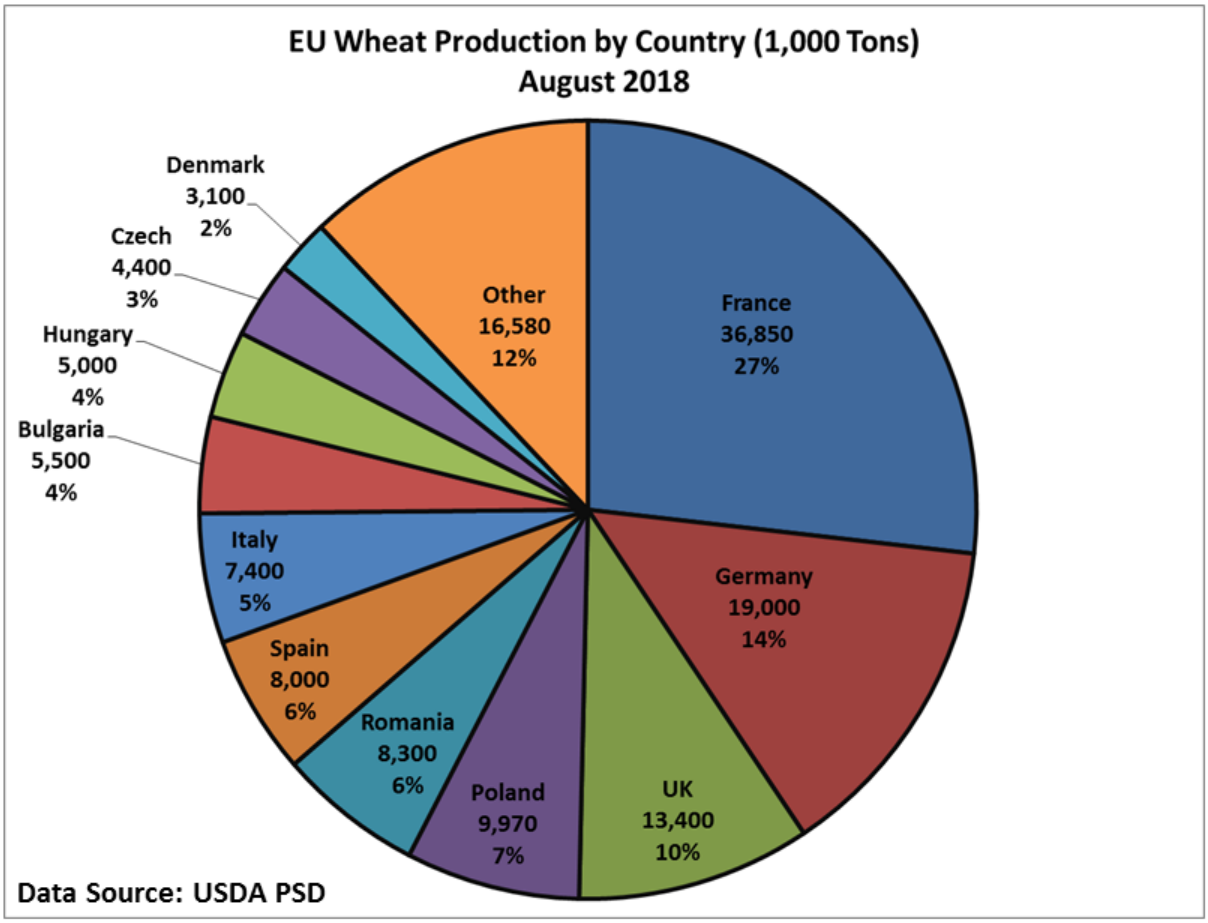
EU Wheat Production by Country (1,000 Tons)
August 2018
France
36,850
27%
Germany
19,000
14%
UK
13,400
10%
Poland
9,970
7%
Romania
8,300
6%
Spain
8,000
6%
Italy
7,400
5%
Bulgaria
5,500
4%
Hungary
5,000
4%
Czech
4,400
3%
Denmark
3,100
2%
Other
16,580
12%
Data Source: USDA PSD

Figure 4

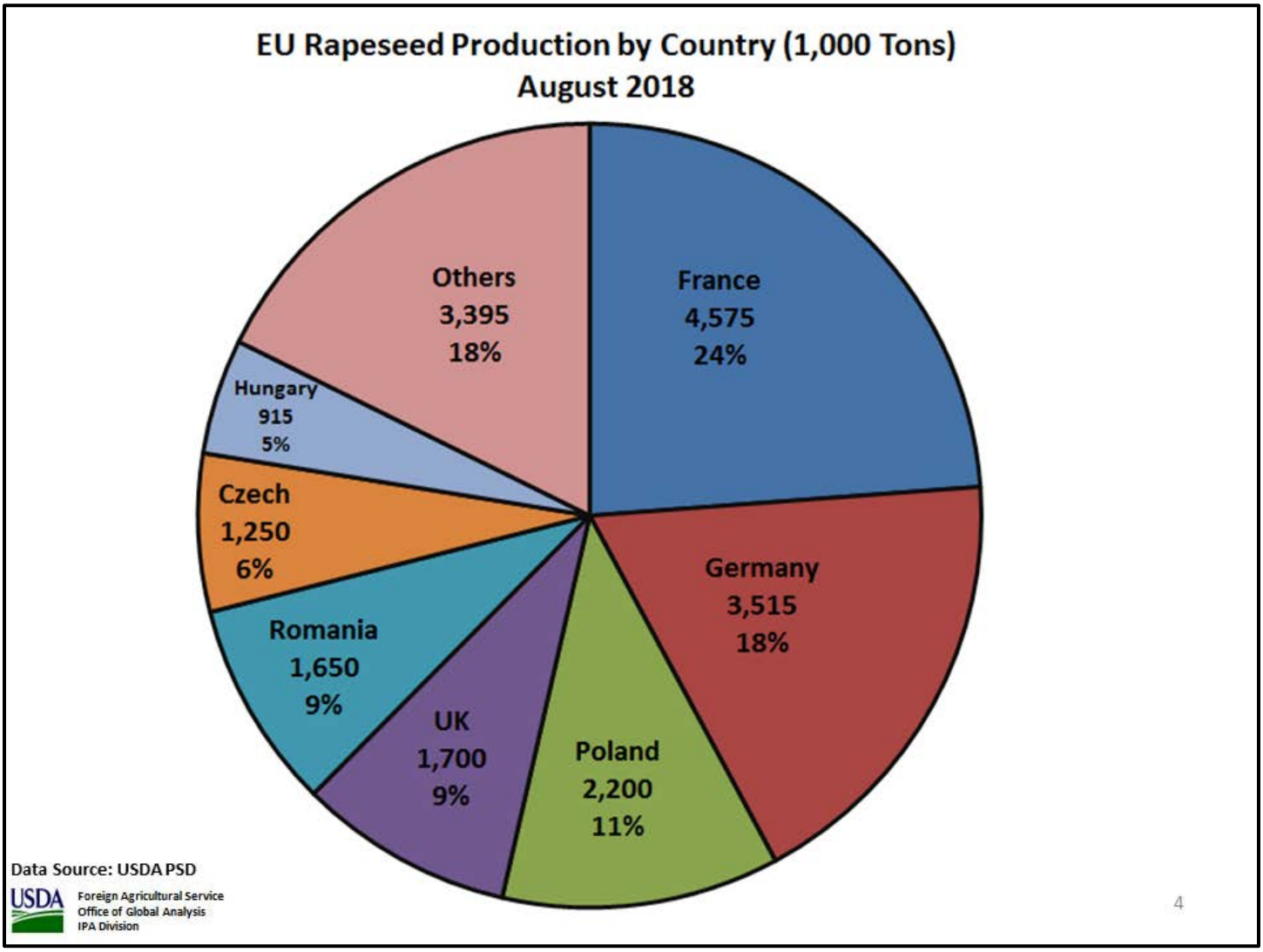
EU Rapeseed Production by Country (1,000 Tons)
August 2018
France
4,575
24%
Germany
3,515
18%
Poland
2,200
11%
UK
1,700
9%
Romania
1,650
9%
Czech
1,250
6%
Hungary
915
5%
Others
3,395
18%
Data Source: USDA PSD
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
4

Figure 5

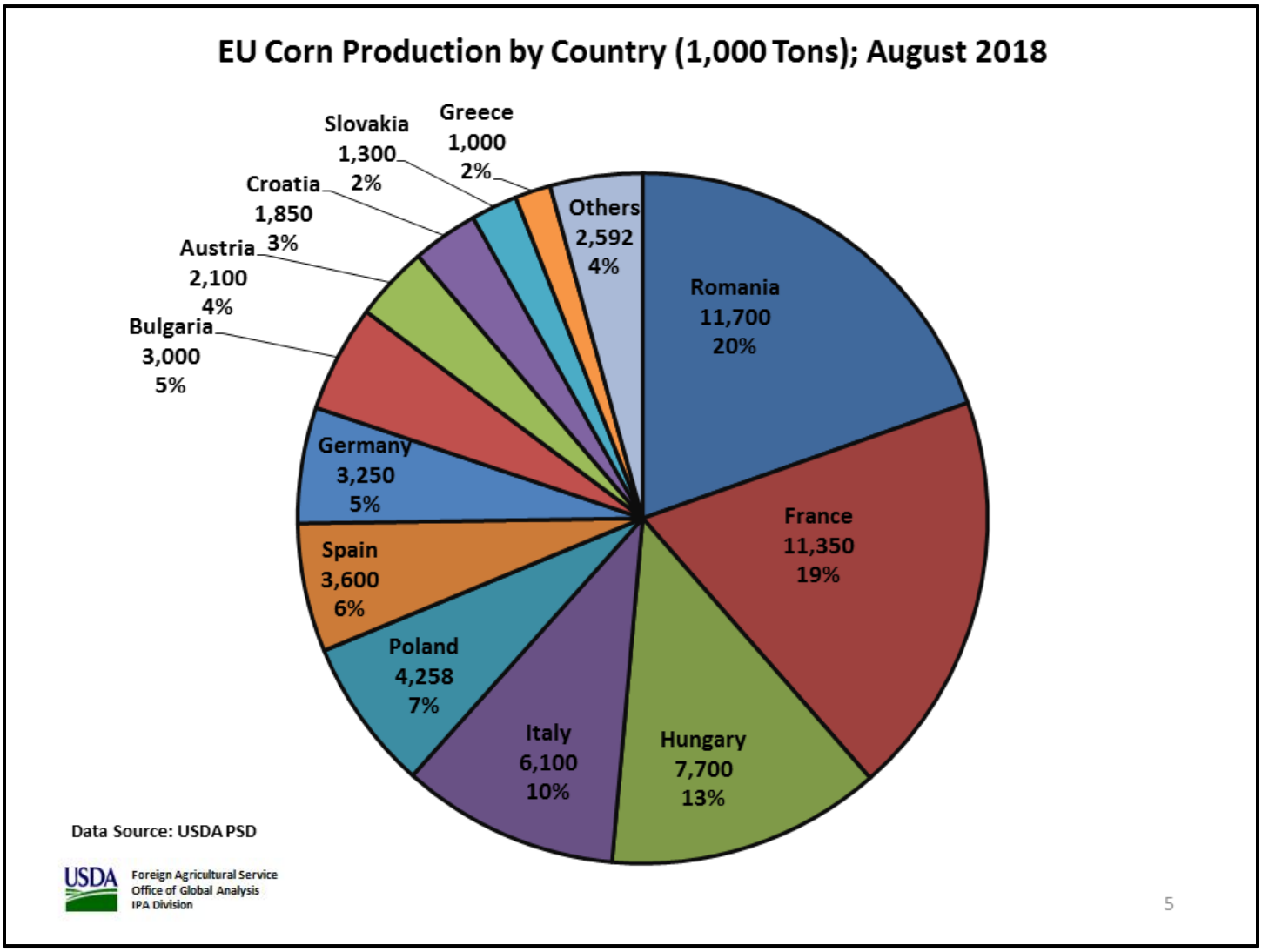
EU Corn Production by Country (1,000 Tons); August 2018
Slovakia 1,300 2%
Greece 1,000 2%
Croatia 1,850 3%
Austria 2,100 4%
Bulgaria 3,000 5%
Others 2,592 4%
Romania 11,700 20%
France 11,350 19%
Hungary 7,700 13%
Italy 6,100 10%
Poland 4,258 7%
Spain 3,600 6%
Germany 3,250 5%
Data Source: USDA PSD
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
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Figure 6

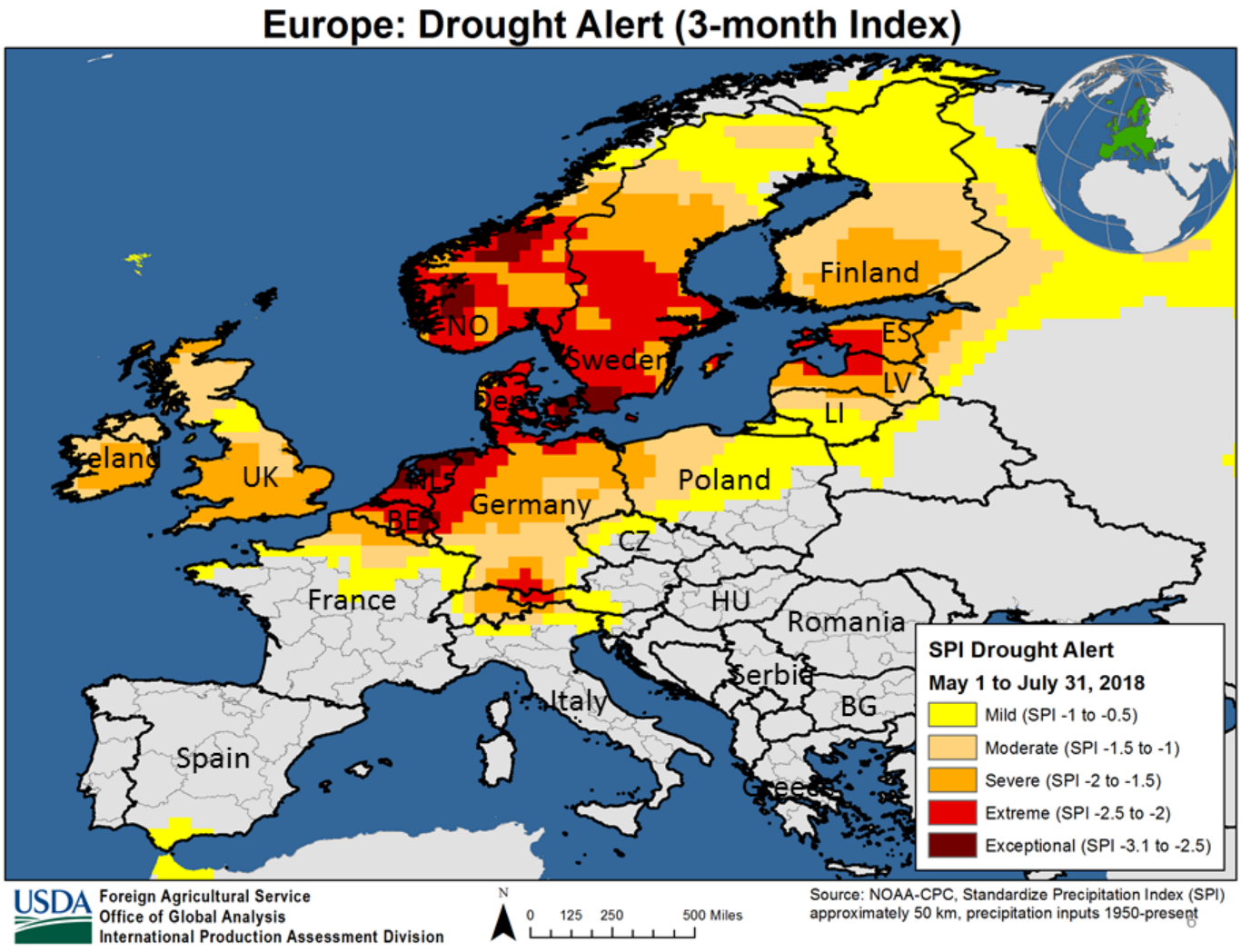
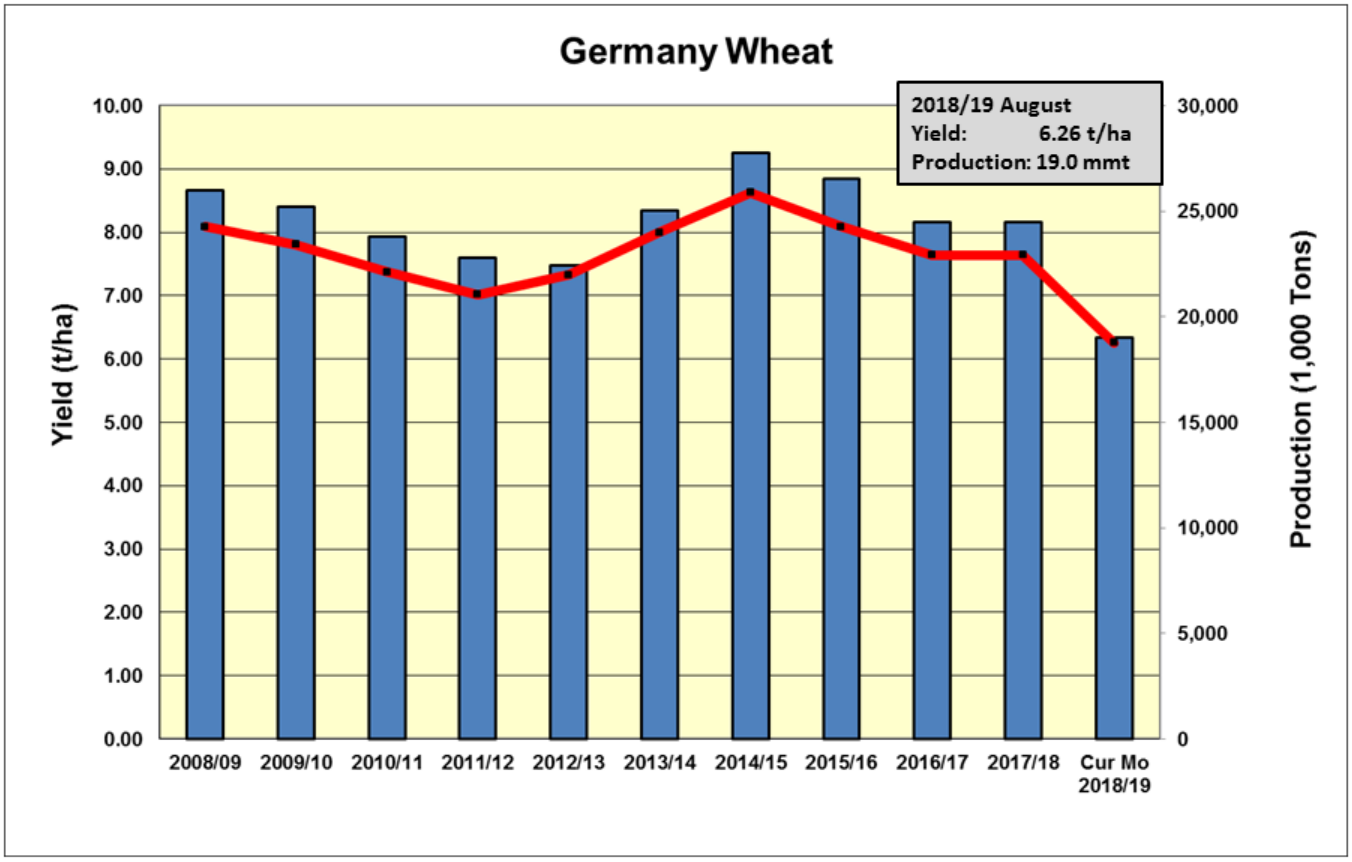

Europe: Drought Alert (3-month Index)
Finland
NO
Sweden
ES
LV
LI
UK
Poland
Germany
CZ
France
HU
Romania
Serbia
BG
Italy
Spain
SPI Drought Alert
May 1 to July 31, 2018
Mild (SPI -1 to -0.5)
Moderate (SPI -1.5 to -1)
Severe (SPI -2 to -1.5)
Extreme (SPI -2.5 to -2)
Exceptional (SPI -3.1 to -2.5)
USDA Foreign Agricultural Service
Office of Global Analysis
International Production Assessment Division
N
0 125 250 500 Miles
Source: NOAA-CPC, Standardize Precipitation Index (SPI)
approximately 50 km, precipitation inputs 1950-present

Figure 7



Data Source: USDA PSD

USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division

Figure 8

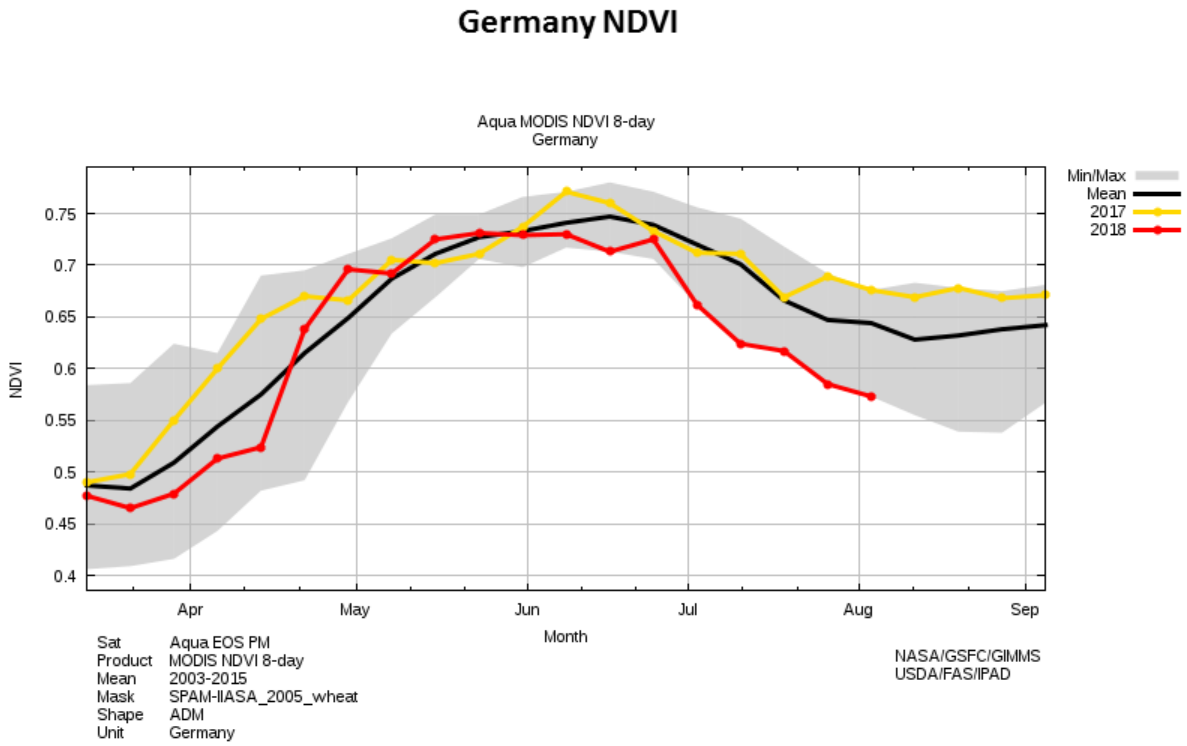

Germany NDVI
Aqua MODIS NDVI 8-day
Germany
Min/Max
Mean
2017
2018
NDVI
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
Apr
May
Jun
Jul
Aug
Sep
Month
Sat Aqua EOS PM
Product MODIS NDVI 8-day
Mean 2003-2015
Mask SPAM-IIASA_2005_wheat
Shape ADM
Unit Germany
NASA/GSFC/GIMMS
USDA/FAS/IPAD

Figure 9

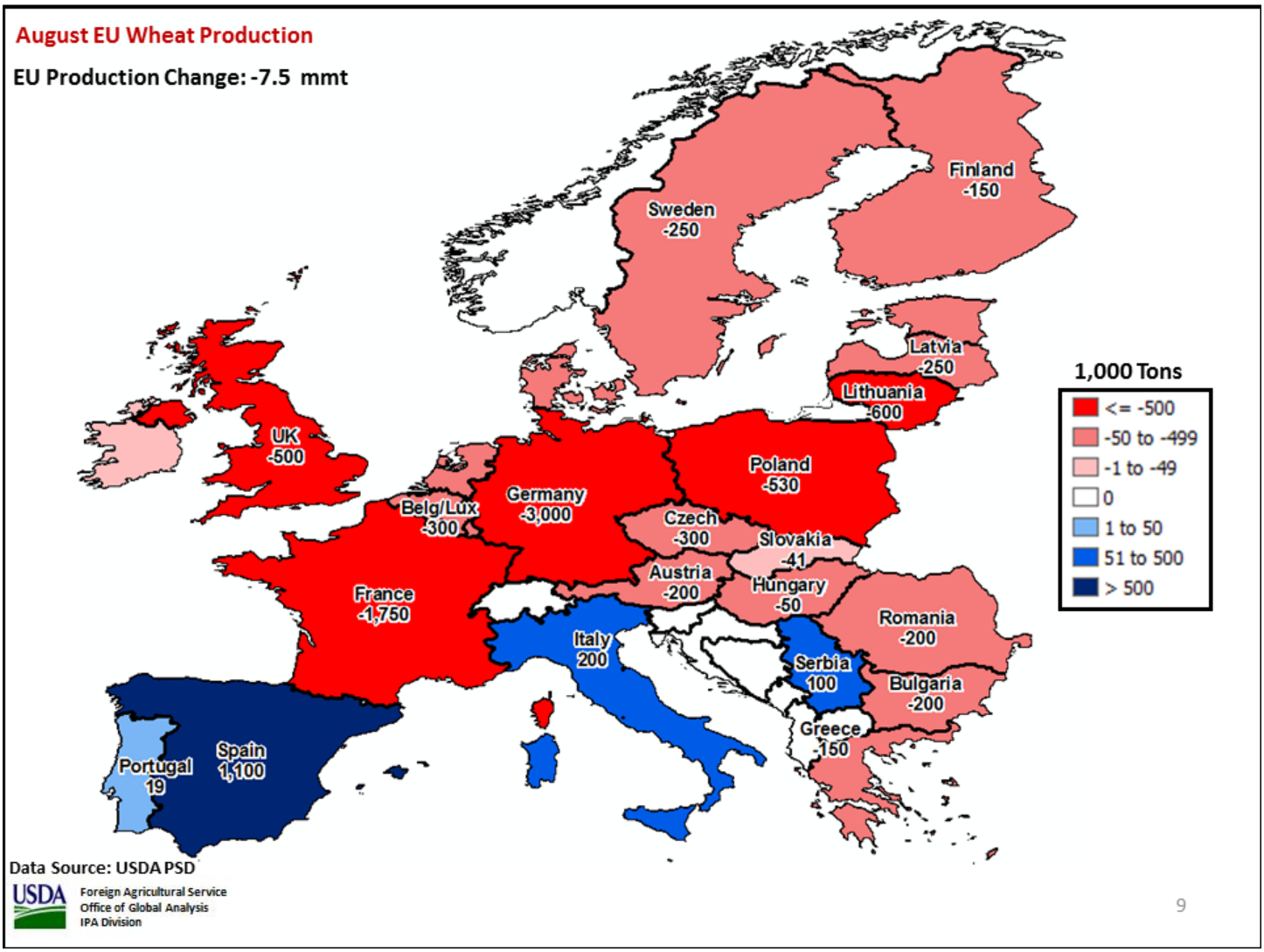

August EU Wheat Production
EU Production Change: -7.5 mmt
Sweden -250
Finland -150
Latvia -250
Lithuania -600
UK -500
Poland -530
Germany -3,000
Belg/Lux -300
Czech -300
Slovakia -41
Austria -200
Hungary -50
France -1,750
Romania -200
Italy 200
Serbia 100
Bulgaria -200
Greece -150
Spain 1,100
Portugal 19
1,000 Tons
<= -500
-50 to -499
-1 to -49
0
1 to 50
51 to 500
> 500
Data Source: USDA PSD
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
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Figure 10

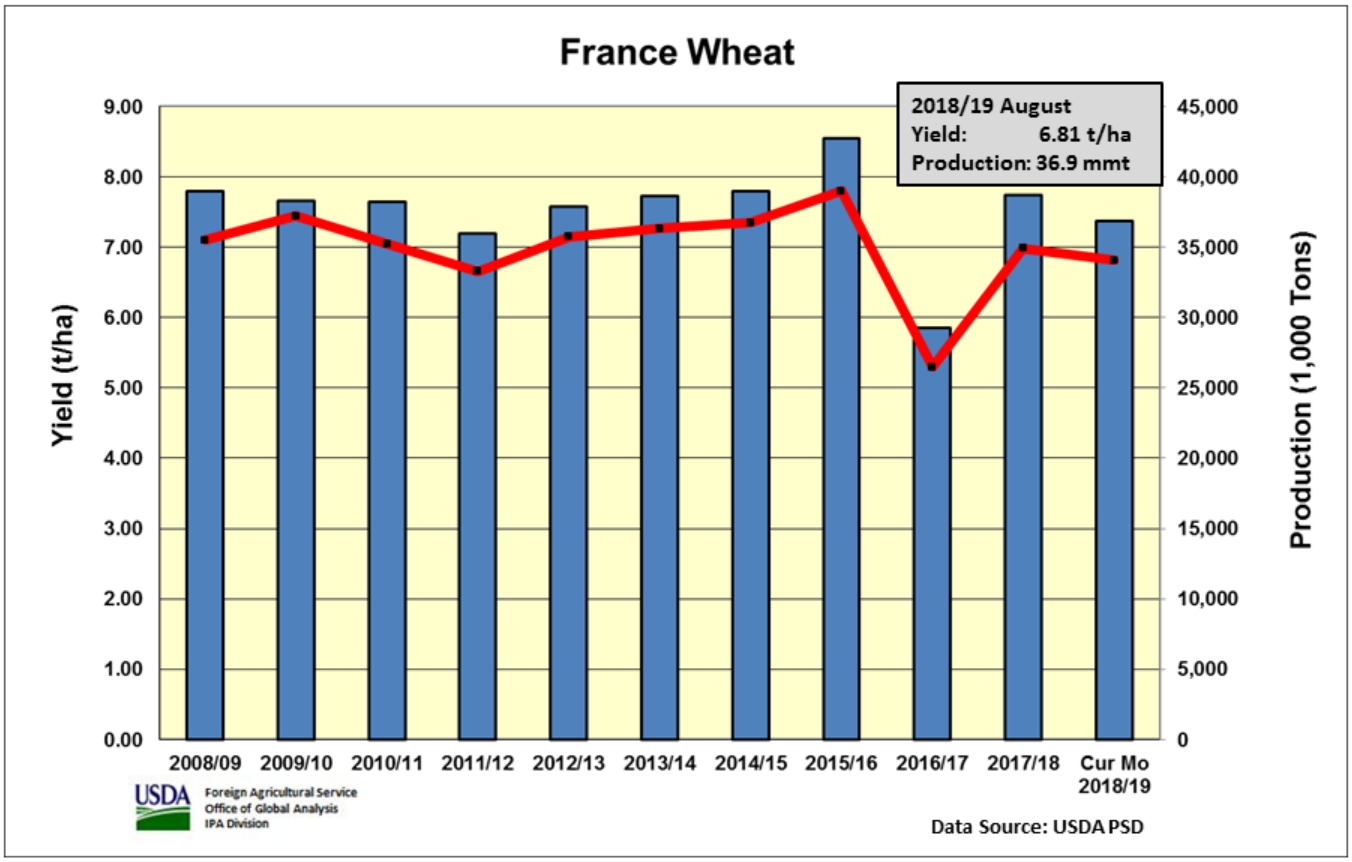
France Wheat
2018/19 August
Yield: 6.81 t/ha
Production: 36.9 mmt
Yield (t/ha)
Production (1,000 Tons)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
Cur Mo 2018/19
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USDA PSD
Yield
Production

Figure 11


Wheat
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
June 18, 2018
Picardy, France
Photo by FAS

Figure 12


Orange Blossom Midge
June 18, 2018
Picardy, France
Photo by FAS
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division

Figure 13

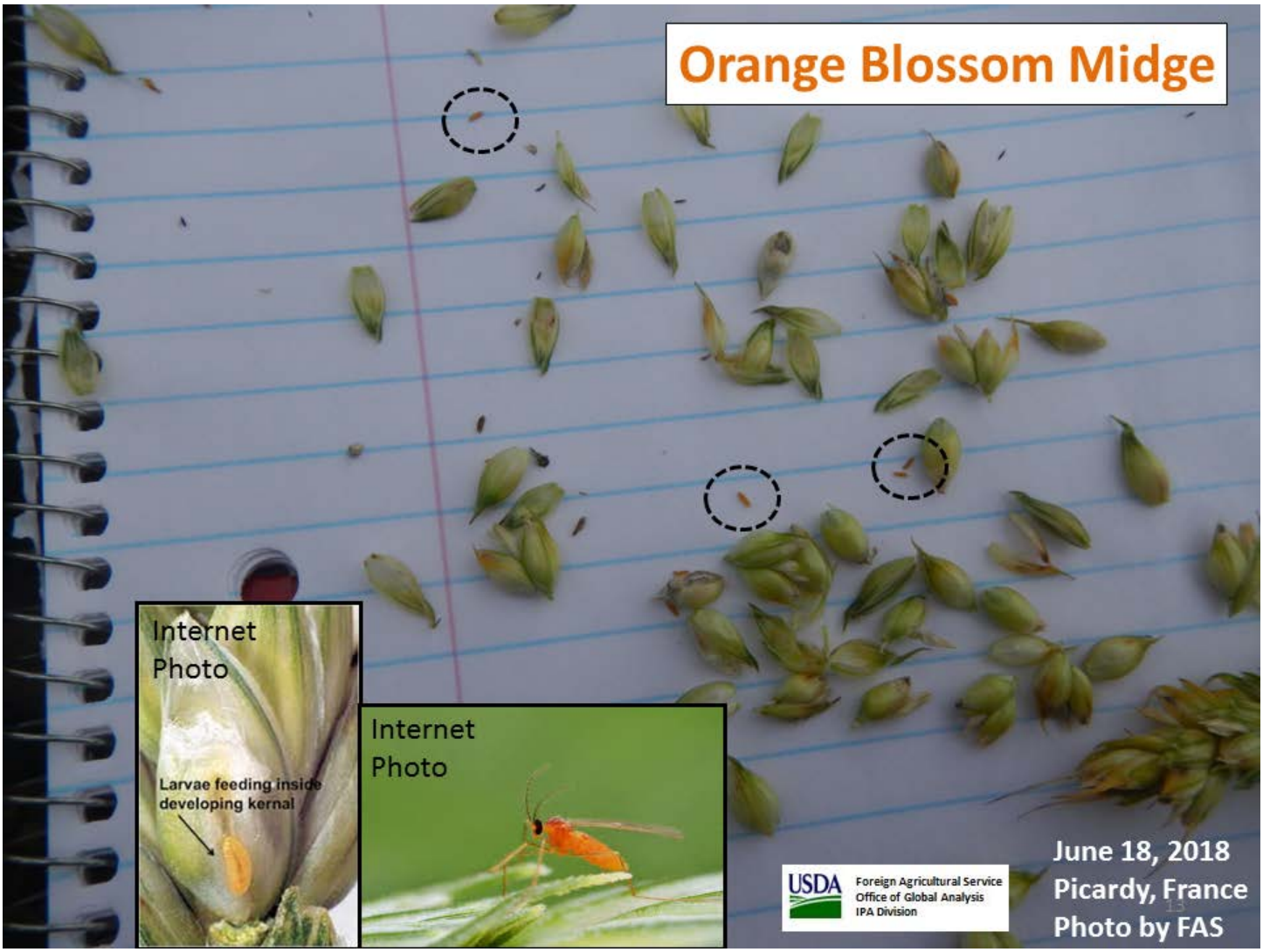
Orange Blossom Midge
Internet Photo
Larvae feeding inside developing kernal
Internet Photo
USDA Foreign Agricultural Service Office of Global Analysis IPA Division
June 18, 2018
Picardy, France
Photo by FAS

Figure 14

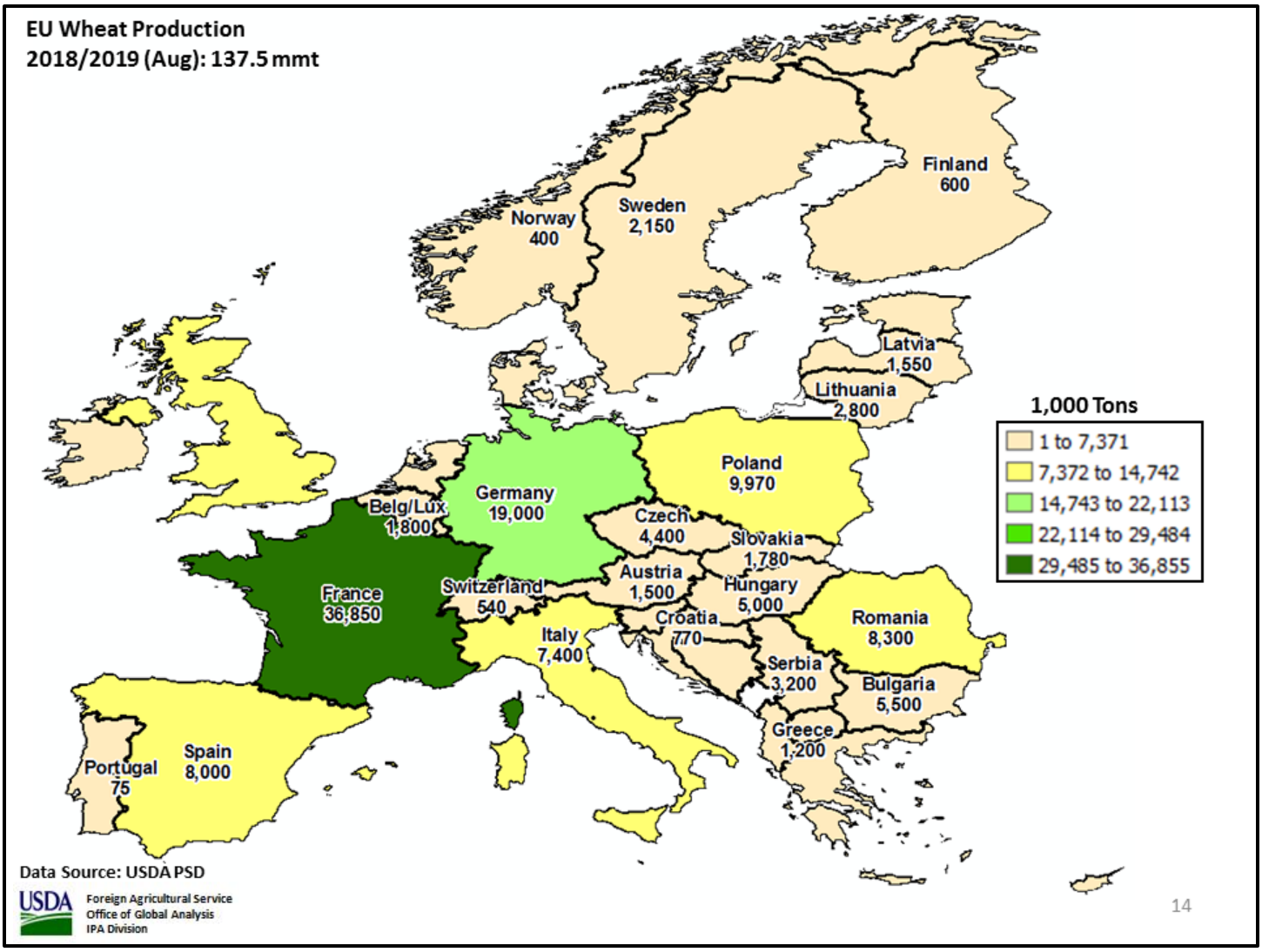
EU Wheat Production
2018/2019 (Aug): 137.5 mmt
Finland 600
Norway 400
Sweden 2,150
Latvia 1,550
Lithuania 2,800
Poland 9,970
Germany 19,000
Belg/Lux 1,800
Czech 4,400
Slovakia 1,780
Austria 1,500
Hungary 5,000
Switzerland 540
France 36,850
Italy 7,400
Croatia 770
Romania 8,300
Serbia 3,200
Bulgaria 5,500
Greece 1,200
Spain 8,000
Portugal 75
1,000 Tons
1 to 7,371
7,372 to 14,742
14,743 to 22,113
22,114 to 29,484
29,485 to 36,855
Data Source: USDA PSD
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
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Figure 15

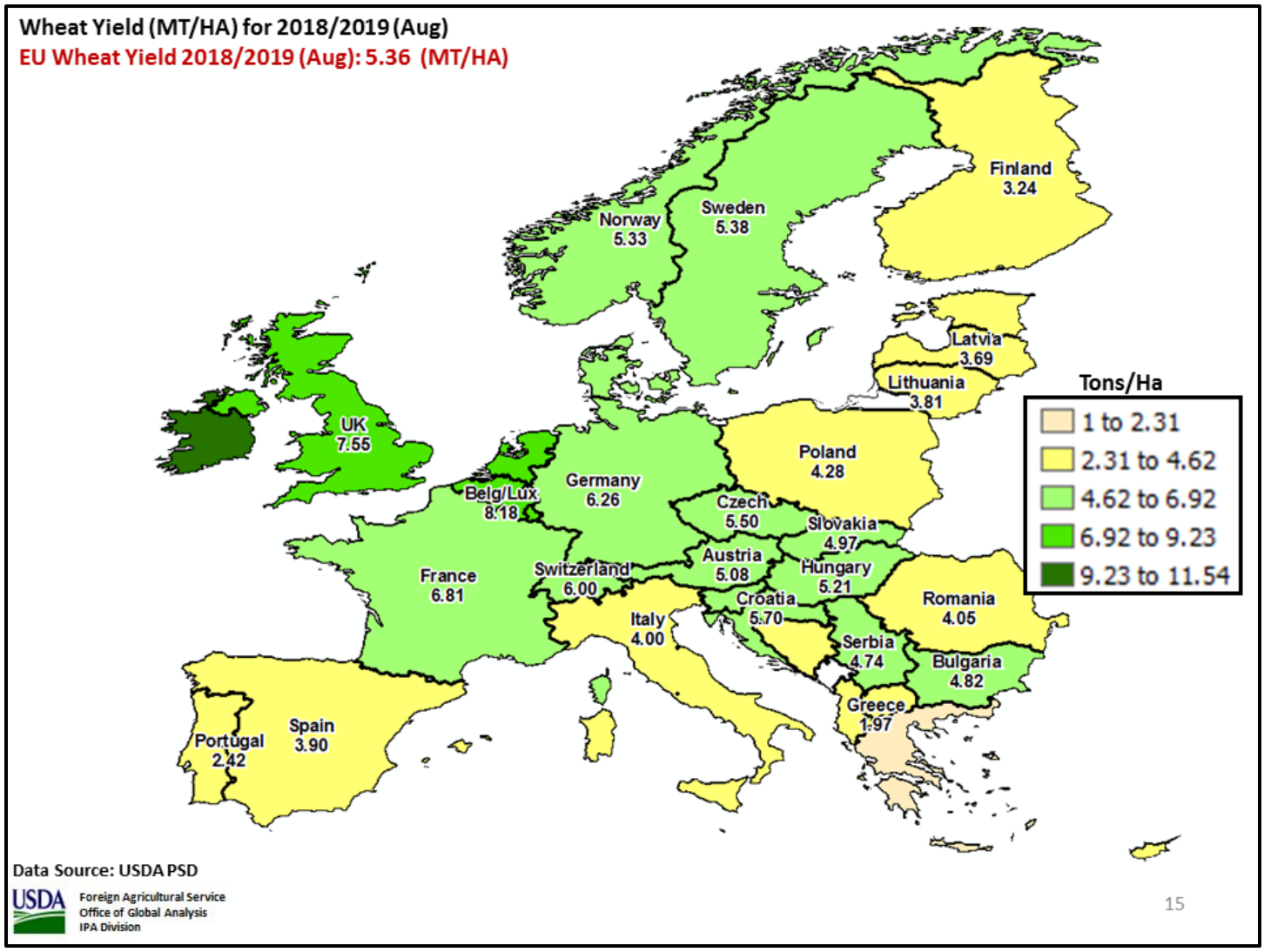
Wheat Yield (MT/HA) for 2018/2019 (Aug)
EU Wheat Yield 2018/2019 (Aug): 5.36 (MT/HA)
Finland 3.24
Norway 5.33
Sweden 5.38
Latvia 3.69
Lithuania 3.81
UK 7.55
Poland 4.28
Germany 6.26
Belg/Lux 8.18
Czech 5.50
Slovakia 4.97
Austria 5.08
Hungary 5.21
France 6.81
Switzerland 6.00
Croatia 5.70
Romania 4.05
Italy 4.00
Serbia 4.74
Bulgaria 4.82
Greece 1.97
Spain 3.90
Portugal 2.42
Tons/Ha
1 to 2.31
2.31 to 4.62
4.62 to 6.92
6.92 to 9.23
9.23 to 11.54
Data Source: USDA PSD
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
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Figure 16

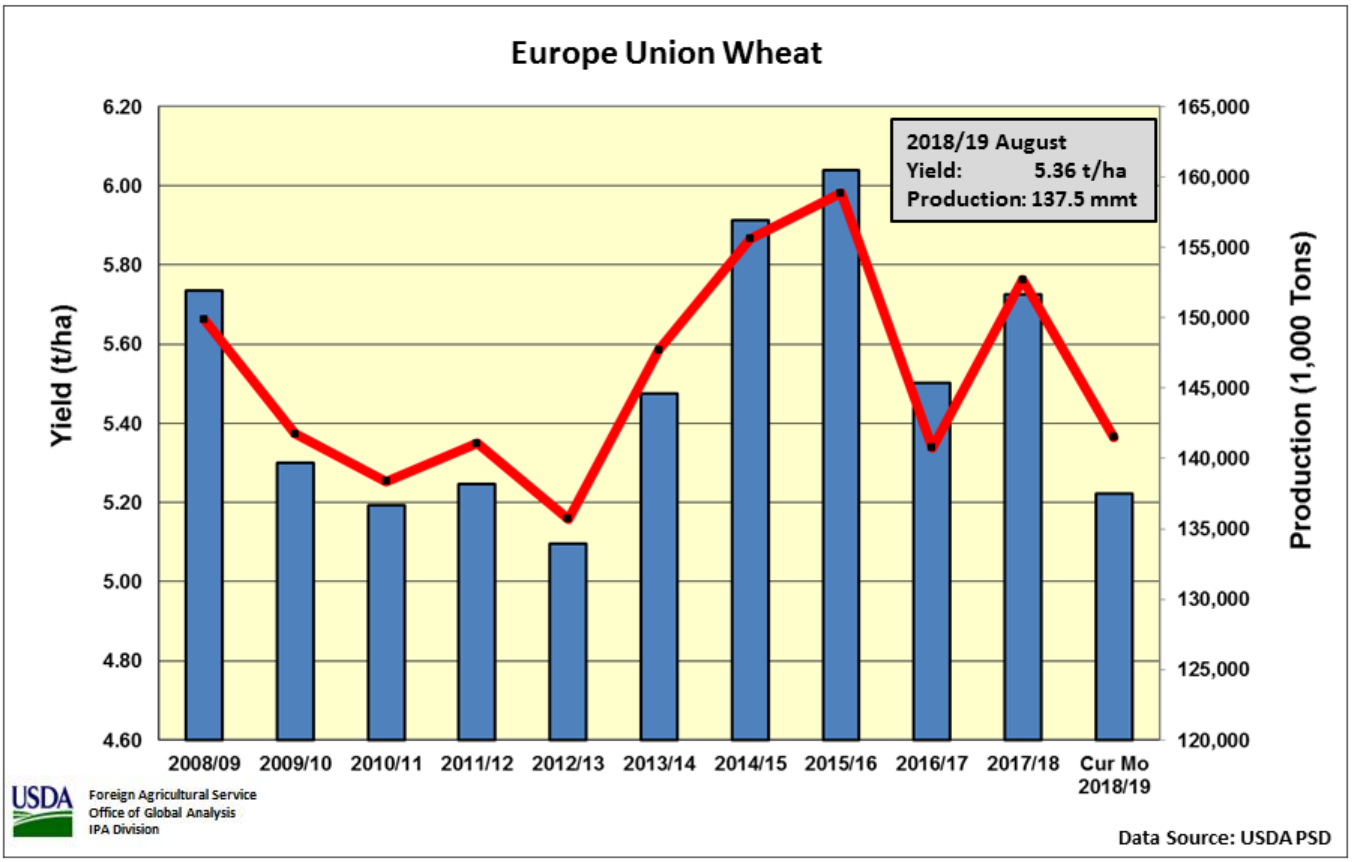
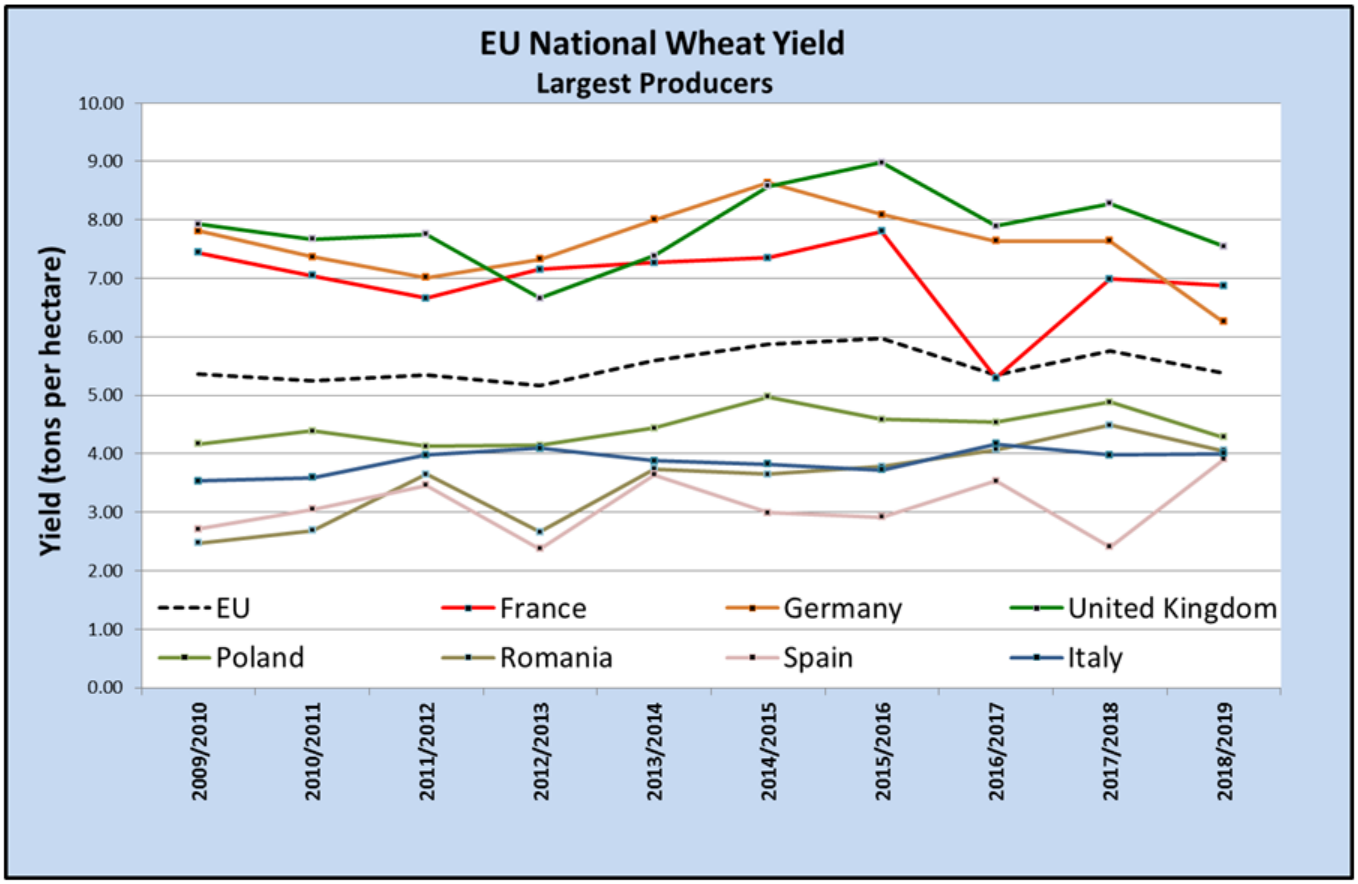

Europe Union Wheat
2018/19 August
Yield: 5.36 t/ha
Production: 137.5 mmt
Yield (t/ha)
Production (1,000 Tons)
6.20
6.00
5.80
5.60
5.40
5.20
5.00
4.80
4.60
165,000
160,000
155,000
150,000
145,000
140,000
135,000
130,000
125,000
120,000
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
Cur Mo 2018/19
Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USDA PSD
Yield
Production

Figure 17



Foreign Agricultural Service
Office of Global Analysis
IPA Division

Source: USDA PSD

Figure 18

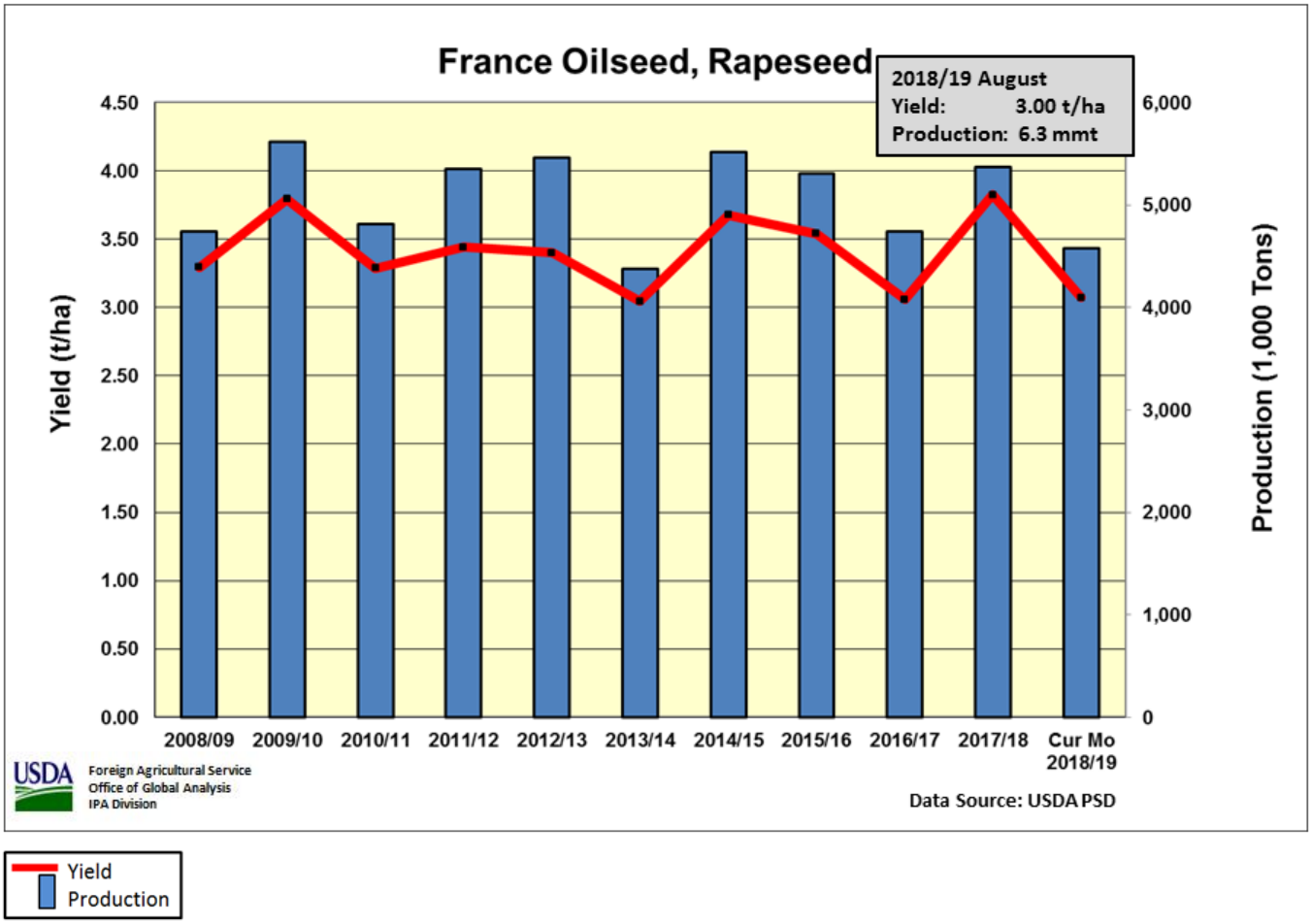

France Oilseed, Rapeseed
2018/19 August
Yield: 3.00 t/ha
Production: 6.3 mmt
Yield (t/ha)
Production (1,000 Tons)
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
6,000
5,000
4,000
3,000
2,000
1,000
0
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
Cur Mo 2018/19
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USDA PSD
Yield
Production

Figure 19


Rapeseed
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
June 19, 2018
Ile de France
Photo by FAS

Figure 20


Flea Beetle Damage
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
June 18, 2018
Picardy, France
Photo by FAS

Figure 21


Flea Beetle Damage
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
June 18, 2018
Picardy, France
Photo by FAS

Figure 22

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Figure 23

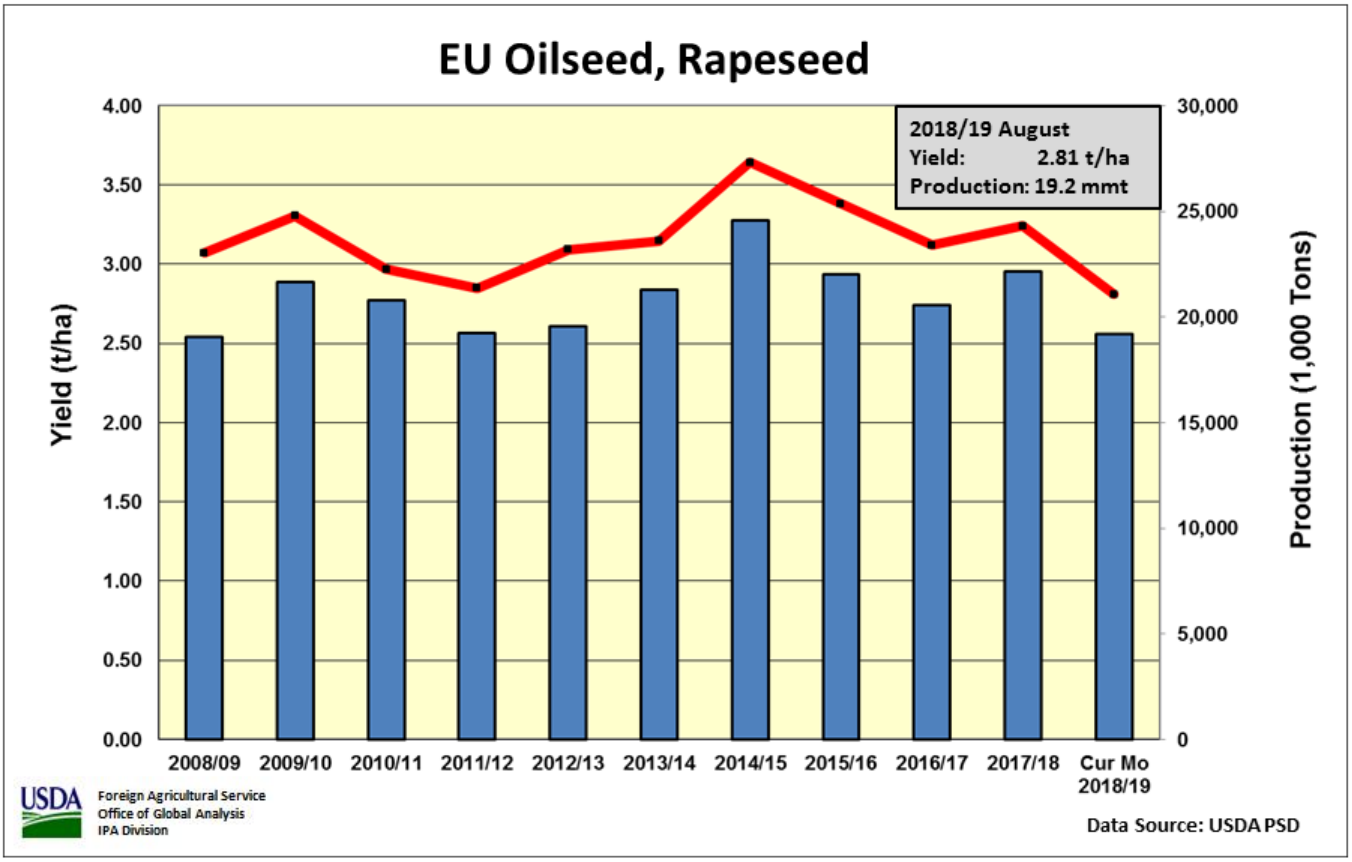
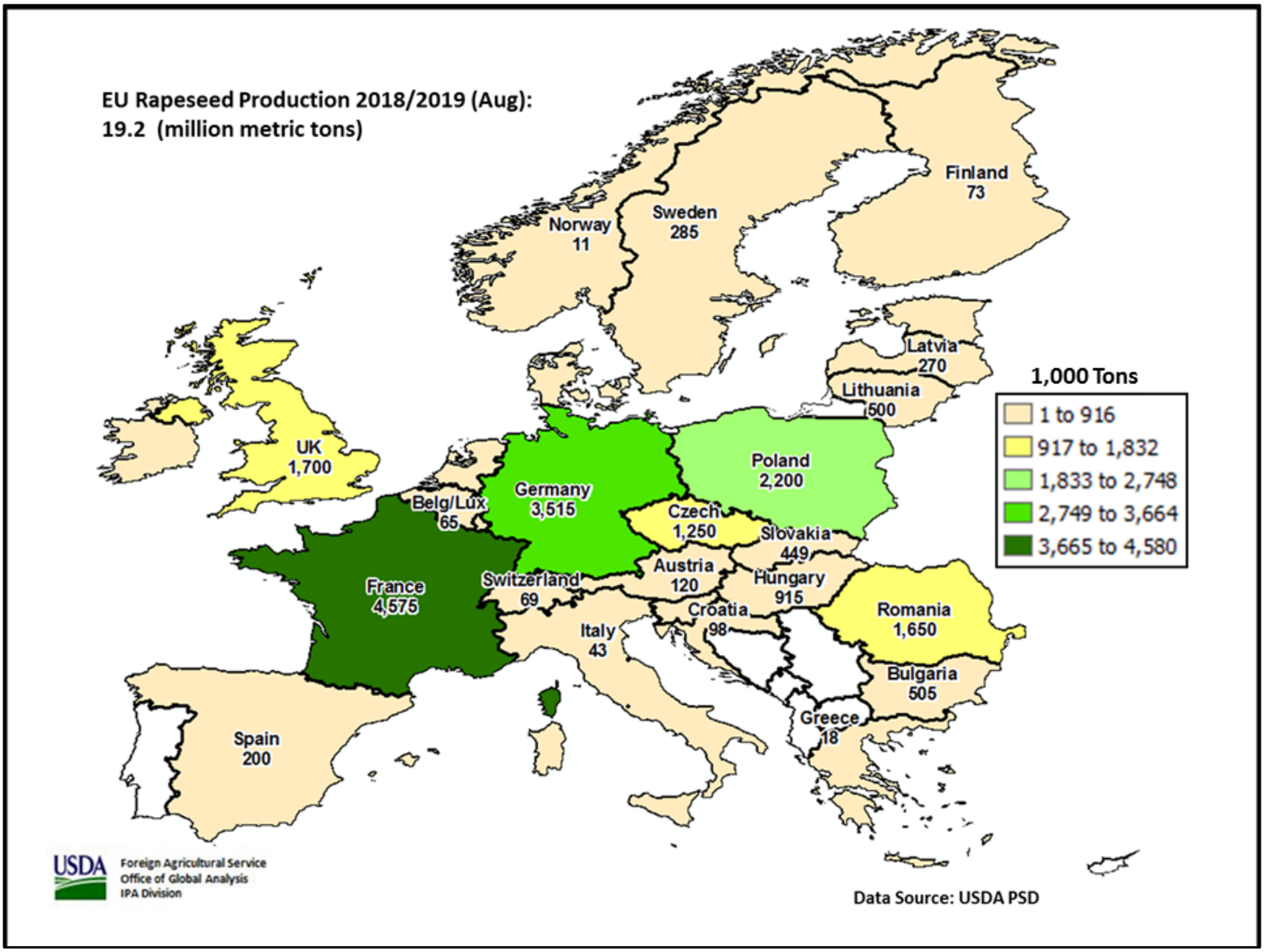

EU Oilseed, Rapeseed
2018/19 August
Yield: 2.81 t/ha
Production: 19.2 mmt
Yield (t/ha)
Production (1,000 Tons)
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
30,000
25,000
20,000
15,000
10,000
5,000
0
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
Cur Mo 2018/19
USDA
Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USDA PSD
Yield
Production

Figure 24


EU Rapeseed Production 2018/2019 (Aug):
19.2 (million metric tons)
Finland
73
Norway
11
Sweden
285
Latvia
270
Lithuania
500
1,000 Tons
1 to 916
917 to 1,832
1,833 to 2,748
2,749 to 3,664
3,665 to 4,580
UK
1,700
Poland
2,200
Germany
3,515
Belg/Lux
65
Czech
1,250
Slovakia
449
Austria
120
Hungary
915
France
4,575
Switzerland
69
Croatia
98
Romania
1,650
Italy
43
Bulgaria
505
Greece
18
Spain
200
USDA
Foreign Agricultural Service
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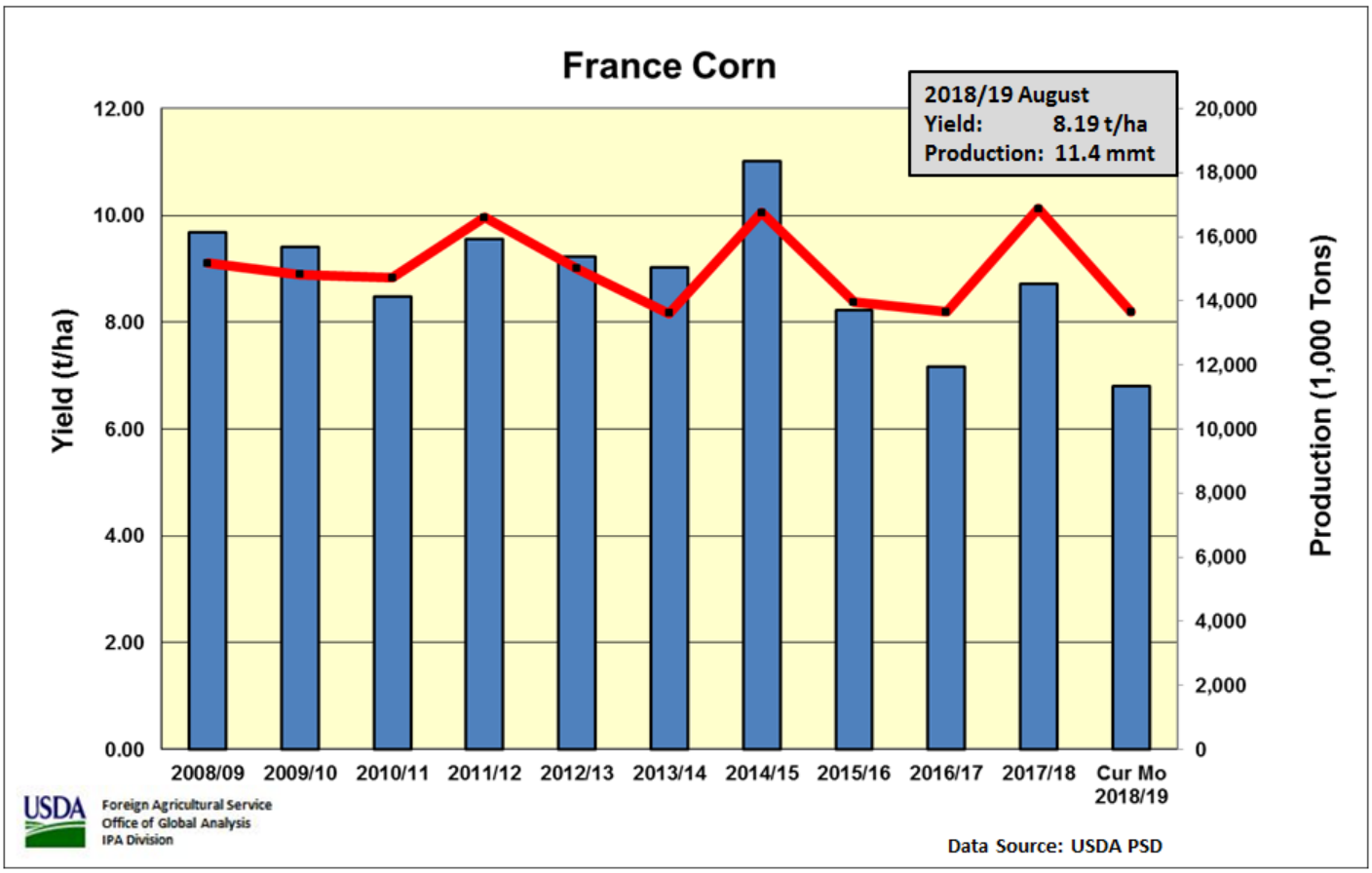
IPA Division
Data Source: USDA PSD

Figure 25


France Corn
2018/19 August
Yield: 8.19 t/ha
Production: 11.4 mmt
Yield (t/ha)
Production (1,000 Tons)
12.00
10.00
8.00
6.00
4.00
2.00
0.00
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
Cur Mo 2018/19
USDA Foreign Agricultural Service
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IPA Division
Data Source: USDA PSD
Yield
Production

Figure 26

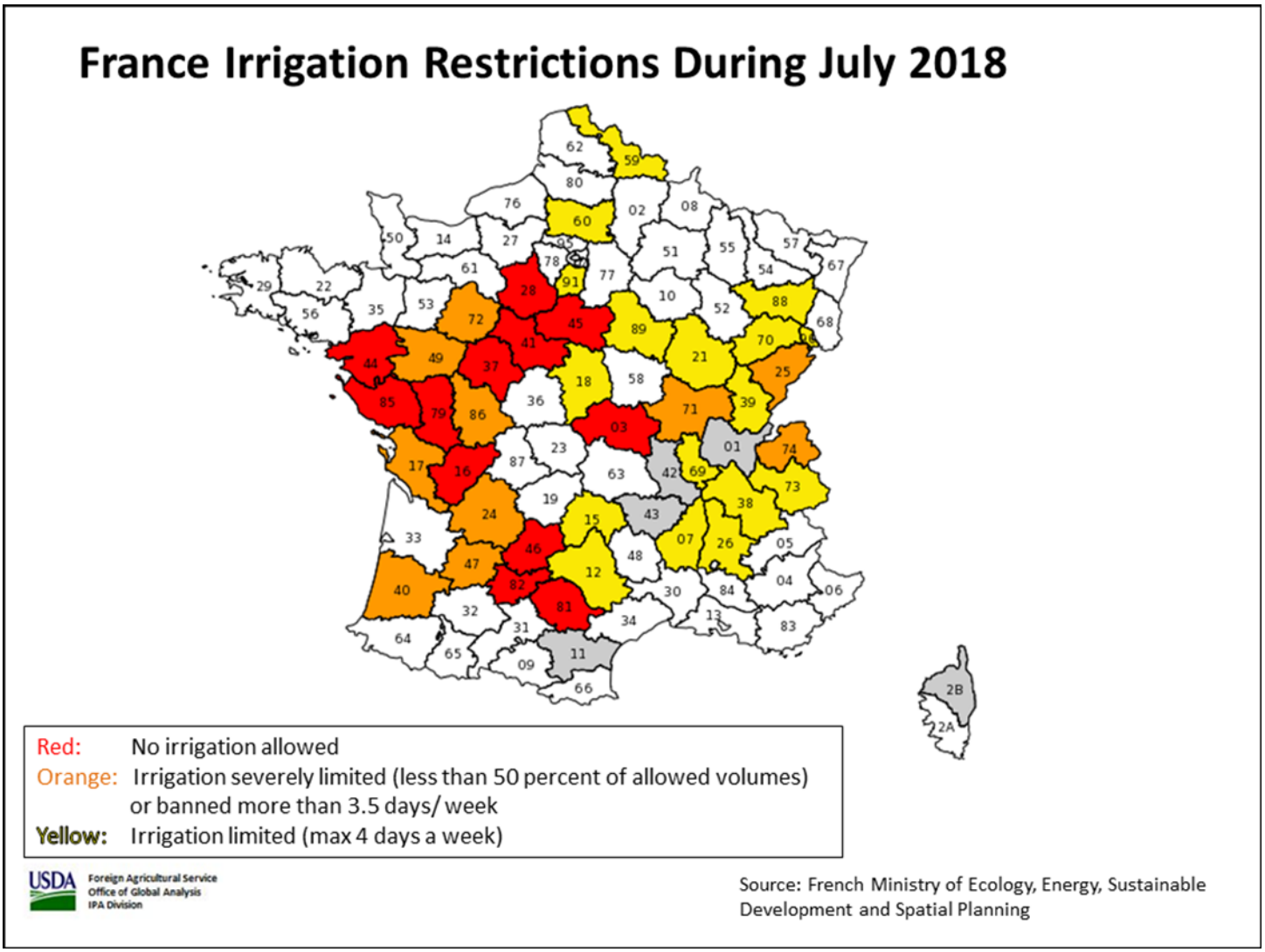

France Irrigation Restrictions During July 2018
Red: No irrigation allowed
Orange: Irrigation severely limited (less than 50 percent of allowed volumes) or banned more than 3.5 days/ week
Yellow: Irrigation limited (max 4 days a week)
USDA Foreign Agricultural Service Office of Global Analysis IPA Division
Source: French Ministry of Ecology, Energy, Sustainable Development and Spatial Planning

Figure 27

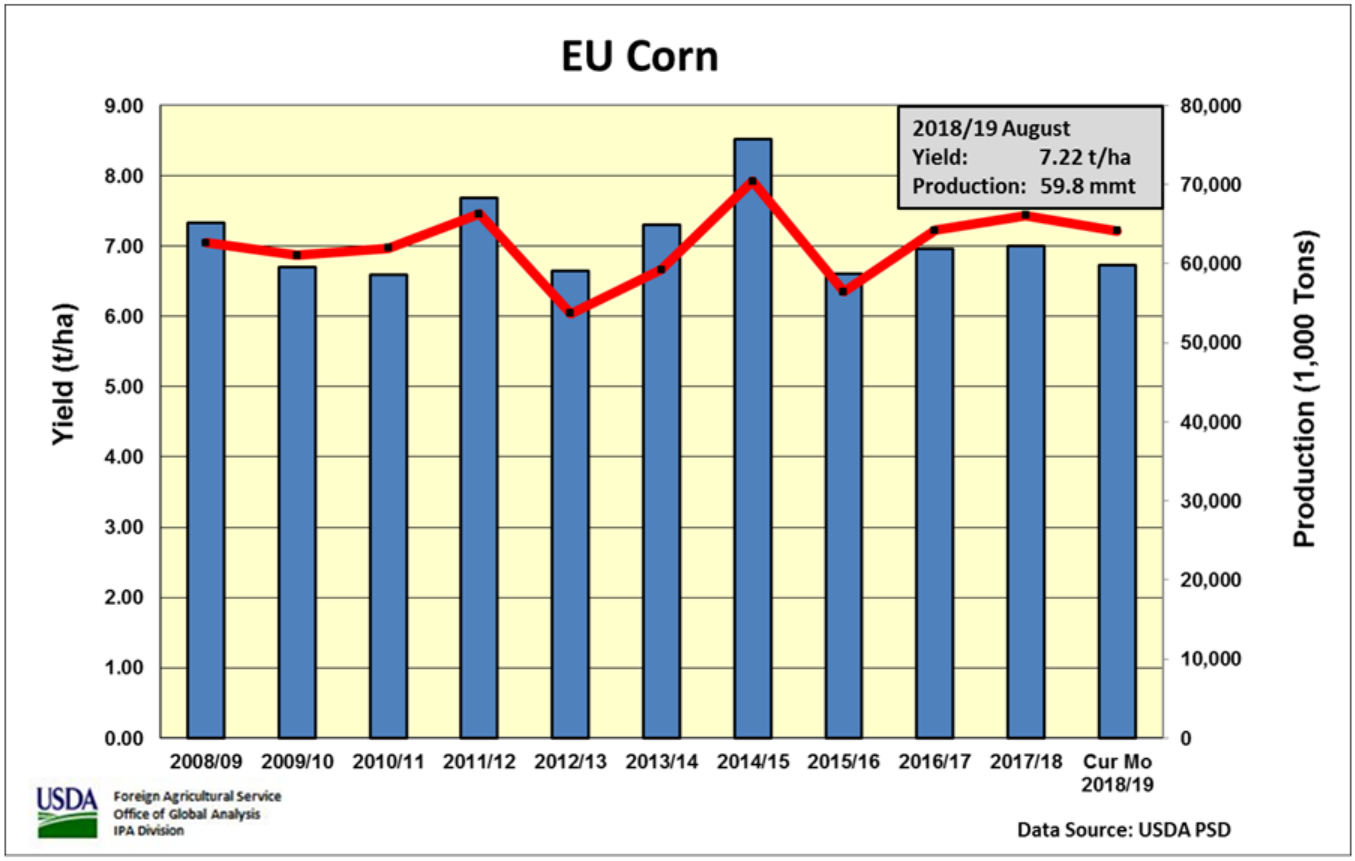
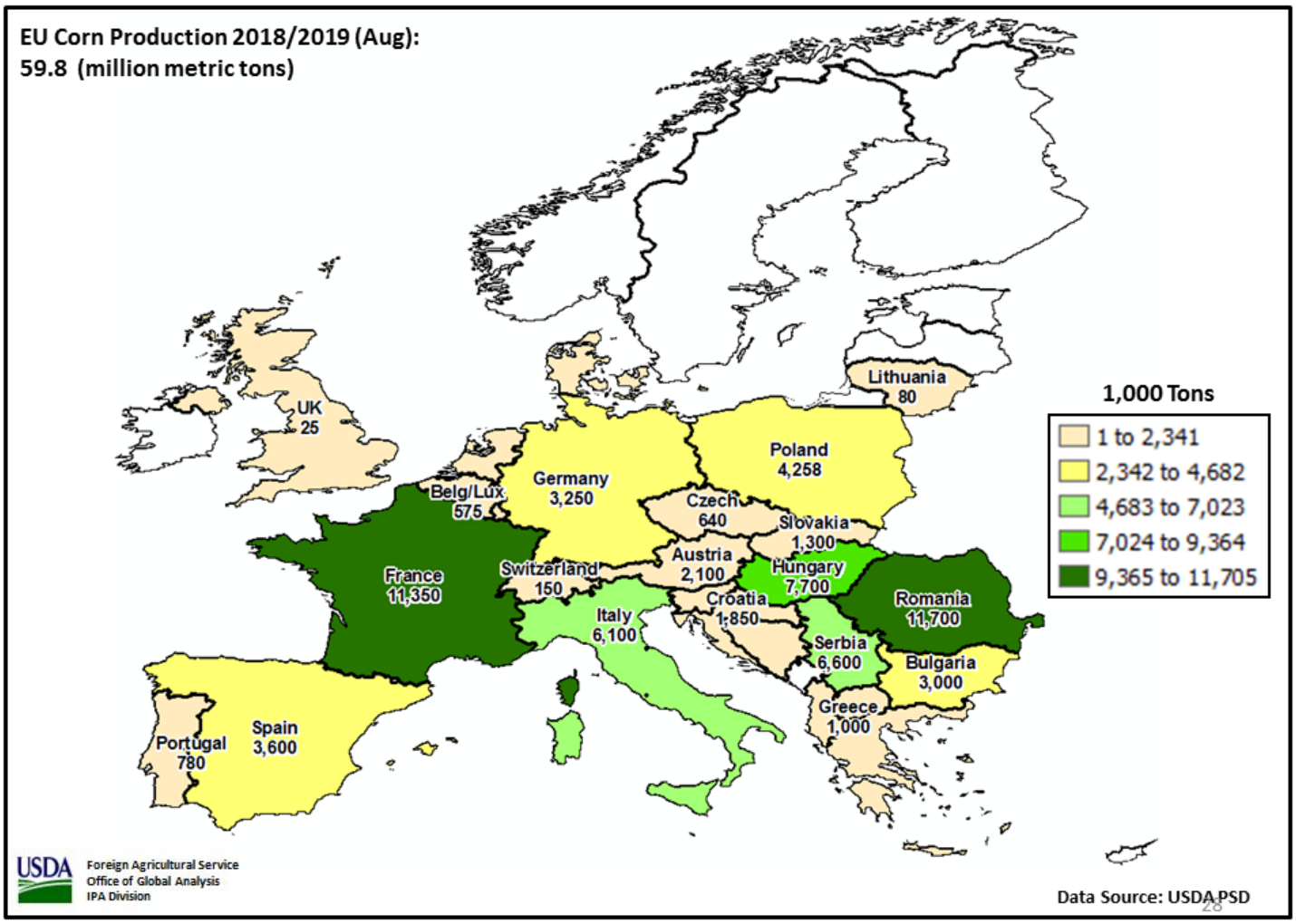

EU Corn
Yield (t/ha)
Production (1,000 Tons)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2018/19 August
Yield: 7.22 t/ha
Production: 59.8 mmt
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
Cur Mo 2018/19
USDA Foreign Agricultural Service
Office of Global Analysis
IPA Division
Data Source: USDA PSD
27
Yield
Production

Figure 28


EU Corn Production 2018/2019 (Aug):
59.8 (million metric tons)
UK
25
Lithuania
80
Poland
4,258
Germany
3,250
Belg/Lux
575
Czech
640
Slovakia
1,300
Austria
2,100
Hungary
7,700
Switzerland
150
France
11,350
Croatia
1,850
Romania
11,700
Italy
6,100
Serbia
6,600
Bulgaria
3,000
Greece
1,000
Spain
3,600
Portugal
780
1,000 Tons
1 to 2,341
2,342 to 4,682
4,683 to 7,023
7,024 to 9,364
9,365 to 11,705
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IPA Division
Data Source: USDA PSD

Figure 29

U. S. Department of Agriculture
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