

# Agricultural production, trade and logistics in the context of Russia's military invasion of Ukraine (updates)

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## OUTLINE :

1. DAMAGES FROM THE WAR
2. UKRAINIAN AGRICULTURAL EXPORT DYNAMICS AND LOGISTICS
3. PROGRESS OF FIELD WORK IN UKRAINE, EXPECTATIONS AND NEEDS
4. RUSSIAN GRAIN HARVEST AND EXPORTS





## RUSSIA'S INVASION OF UKRAINE, map as of September 19, 2022

- Reported missile strikes
- Under Russian control
- Ukrainian-claimed counter-offensive
- Assessed Russian advance
- Airfield
- Populated areas
- Reported fighting
- Russian-claimed control
- Reported Ukrainian partisan warfare
- City under Russian control
- Nuclear power plant

Source: Institute for the Study of War

## Damaged and destroyed infrastructure objects of Ukraine total

\$114,5 bln



housing

131,3 thousand units



industry and business

422 units



vehicles

188,1 thousand units



education

2472 units



healthcare

934 units



culture and sports

924 units



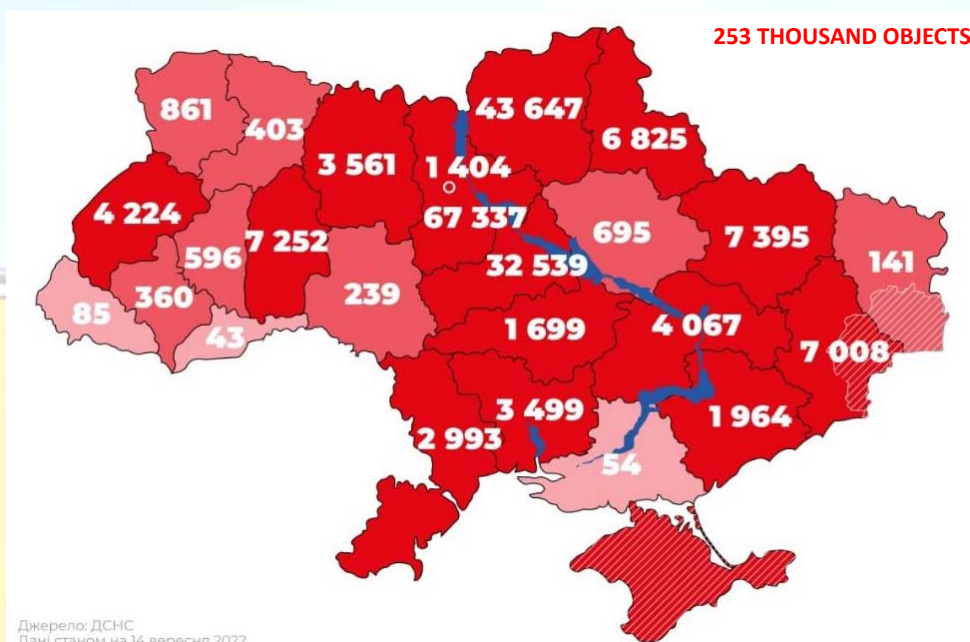
## Damages, losses and reconstruction and recovery needs by sector breakdown, in monetary terms

AS OF SEPTEMBER, 5, 2022

Property types	Damages, \$ bln	Losses, \$ bln	Reconstruction and recovery needs, \$ bln
Housing	47,8	3,5	75,3
Transportation infrastructure	35,1	18,7	51,1
Industry and business services	9,7	30,3	19,7
Agri sector and land resources	4,3	23,4	17,5
Social services	0,2	6,4	6,6
Vehicles	2,7	0,4	5,0
Education	4,4	2,1	5,4
Commerce	2,1	23,3	3,9
Energy	1,8	11,6	3,5
Health care	1,6	2,7	2,5
Utilities	1,3	2,3	1,7
Culture, religion, sport, and tourism	2,0	4,3	3,2
Administrative buildings	0,9	0,1	1,3
Digital infrastructure	0,6	1,1	1,0
Financial sector	0,02	0,2	0,02
<b>Total</b>	<b>114,5</b>	<b>130,4</b>	<b>197,8</b>
Additional needs for demining (according to the WB preliminary assessment)			70
<b>Total, with demining</b>			<b>267,8</b>

Source: Kyiv School of Economics

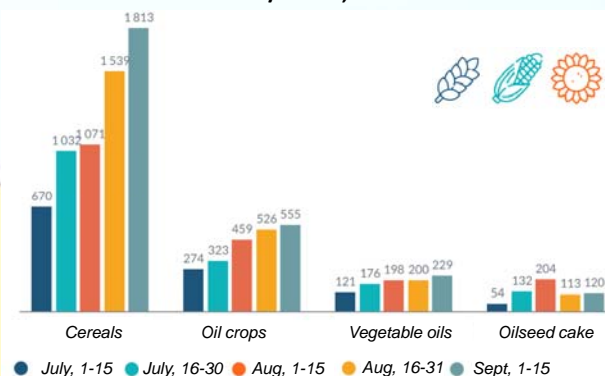
# THE NUMBER OF NEUTRALIZED EXPLOSIVE OBJECTS IN UKRAINE SINCE THE FEBRUARY 24, 2022



## EXPORT OF CEREALS and LEGUMES with products of their processing as of September 19, thousand tonnes

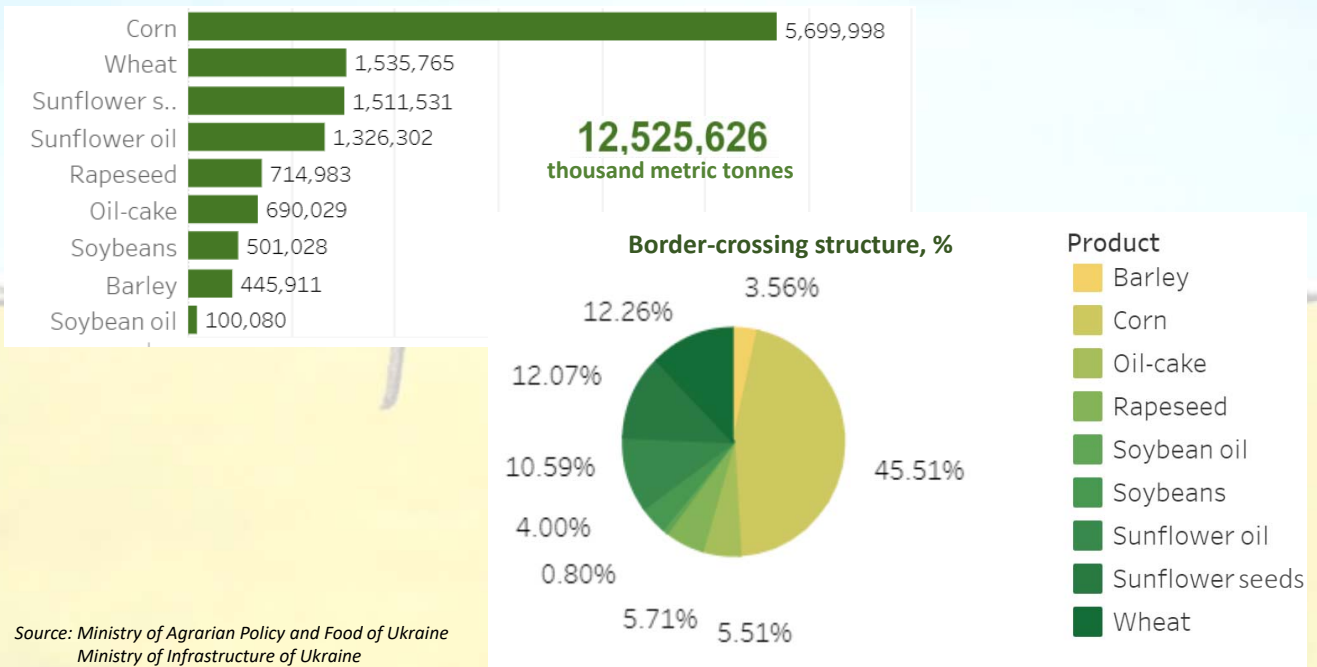
	2020/2021 MY Total	2021/2022 MY		2022/2023 MY	
		Total	including: for September 2021	Total	including: for September 2022
<b>Cereals and legumes, total</b>	<b>43939</b>	<b>48508</b>	<b>2927</b>	<b>6364</b>	<b>2067</b>
• wheat	16413	18741	2303	2063	806
• barley	4210	5752	474	557	227
• rye	15.8	161.5	10.1	2.2	1.7
• corn	22596	23535	127	3719	1025
Wheat flour	123.7	69.4	7.5	17.8	7.2
Other flour	1.1	1.5	0.1	2.2	0.7
<b>Total flour</b>	<b>124.8</b>	<b>70.9</b>	<b>7.6</b>	<b>20.0</b>	<b>7.9</b>
<b>Total export (grain + flour)</b>	<b>44105</b>	<b>48579</b>	<b>2937</b>	<b>6391</b>	<b>2077</b>

## Dynamics of main agricultural products export from Ukraine in 2022/23 MY, thousand tonnes

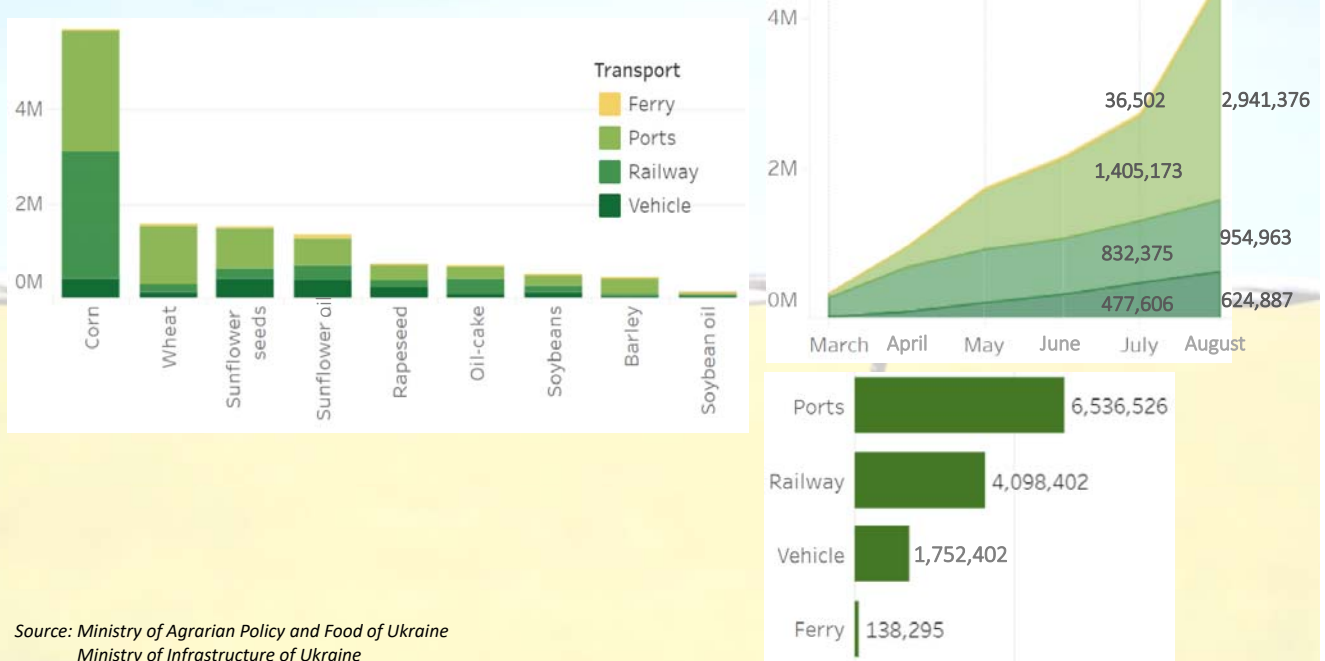


Source: based on data of State Customs Service of Ukraine

**BORDER-CROSSING FROM UKRAINE BY TYPES OF PRODUCTS,  
March – August, 2022**



**BORDER-CROSSING FROM UKRAINE IN TRANSPORTATION BREAKDOWN,  
March – August, 2022, metrics tonnes**





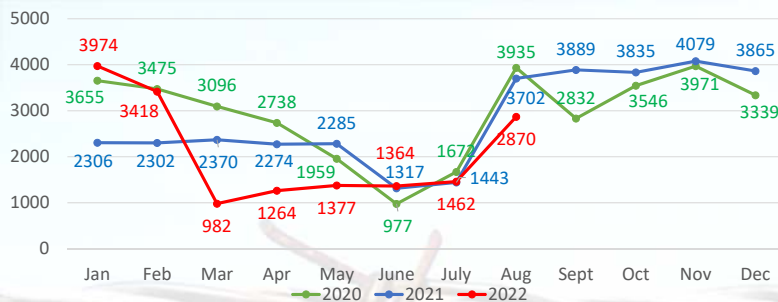
**GOODS' SHARE IN TRANSPORTATION BREAKDOWN,  
March – August, 2022, metrics tonnes**

	Railway							Vehicle					
	Mar	Apr	May	Jun	Jul	Aug		Mar	Apr	May	Jun	Jul	Aug
Corn	67.1%	71.6%	71.9%	69.7%	68.0%	54.5%	Corn	7.1%	15.8%	18.6%	21.4%	28.4%	21.5%
Sunflower oil	4.4%	9.7%	8.0%	8.6%	7.5%	5.9%	Sunflower oil	51.0%	42.6%	30.8%	23.0%	19.2%	12.9%
Sunflower s..	3.0%	8.0%	6.9%	6.5%	5.1%	2.3%	Sunflower s..	7.6%	21.4%	37.7%	41.2%	23.6%	10.3%
Oil-cake	8.8%	3.5%	6.9%	6.5%	7.3%	10.6%	Oil-cake	5.0%	4.8%	3.8%	3.7%	4.6%	4.9%
Wheat	0.0%	0.3%	1.4%	3.6%	4.7%	9.8%	Wheat	2.7%	0.2%	0.5%	1.3%	4.9%	12.7%
Soybeans	13.0%	4.9%	3.1%	3.0%	3.0%	2.5%	Soybeans	7.5%	7.8%	5.3%	6.3%	6.8%	3.7%
Rapeseed					2.9%	12.9%	Rapeseed					6.8%	29.0%
Soybean oil	2.8%	1.6%	1.3%	1.2%	0.7%	1.1%	Soybean oil	19.1%	7.4%	3.1%	2.6%	2.1%	1.9%
Barley	1.0%	0.4%	0.6%	0.8%	0.9%	0.4%	Barley	0.0%	0.1%	0.2%	0.5%	3.5%	3.0%

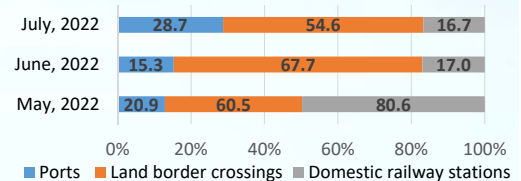
	Ports							Ferry					
	Mar	Apr	May	Jun	Jul	Aug		Mar	Apr	May	Jun	Jul	Aug
Corn	9.5%	58.4%	51.1%	39.5%	28.1%	40.6%	Corn	0.0%	2.8%	6.6%	4.3%	3.2%	2.8%
Sunflower oil	11.3%	10.3%	9.0%	11.1%	10.1%	8.1%	Sunflower oil	57.7%	50.3%	40.3%	35.0%	29.1%	35.0%
Sunflower s..	0.2%	12.2%	25.4%	32.1%	14.0%	2.2%	Sunflower s..	42.3%	42.1%	44.7%	50.6%	28.2%	6.9%
Oil-cake	10.1%	5.0%	5.4%	3.0%	3.4%	4.6%	Oil-cake	0.0%	2.6%	4.9%	2.9%	28.4%	44.2%
Wheat	58.5%	2.8%	4.1%	10.0%	24.9%	24.7%	Wheat	0.0%	0.0%	0.1%	0.8%	0.3%	1.8%
Soybeans	2.8%	7.8%	4.2%	2.6%	5.9%	2.7%	Soybeans	0.0%	1.1%	0.6%	4.7%	4.0%	1.0%
Rapeseed					2.4%	10.8%	Rapeseed					2.6%	4.8%
Soybean oil						0.0%	Soybean oil	0.0%	0.5%	2.9%	1.6%	0.4%	0.9%
Barley	7.5%	3.5%	0.8%	1.7%	11.2%	6.2%	Barley	0.0%	0.5%	0.0%	0.0%	3.9%	2.7%

Source: Ministry of Agrarian Policy and Food of Ukraine  
Ministry of Infrastructure of Ukraine

**DYNAMICS OF VOLUMES OF TRANSPORTATION OF GRAIN CARGOES IN ALL TYPES OF RAILWAY COMMUNICATION IN UKRAINE, 2020-2022, thousand tonnes**



**The structure of railway transportation of grain cargoes by direction, %**

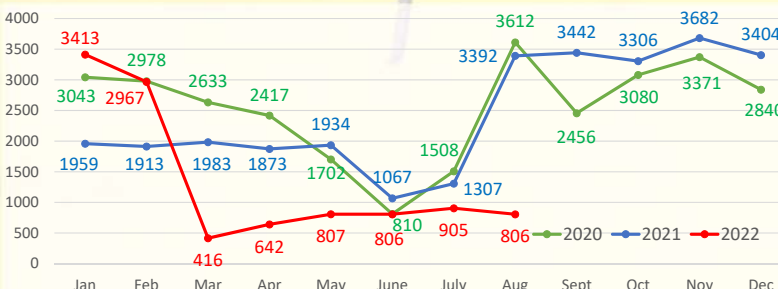


**RAIL TRANSPORTATION FOR EXPORT under the war conditions, as of September 19, 2022, thousand tonnes**

Month	Grain		Oil		Meal, cake, husk	
	2022	+/- to the previous month	2022	+/- to the previous month	2022	+/- to the previous month
March	415.9		20.1		50.0	
April	642.5	↑54.5%	69.8	↑247%	53.2	↑6.3%
May	807.3	↑25.7%	72.4	↑3.7%	69.9	↑31.4%
June	806.3	↓-0.1%	98.9	↑36.7%	73.2	↑4.7%
July	905.2	↑12.3%	88.1	↓-11.0%	93.9	↑28.4%
August	805.7	↓-11.0%	108.0	↑22.6%	141.1	↑57.7%
Sept, 19	557.4		73.1		97.4	

Source: based on the data of the Ukrainian Railway

**DYNAMICS OF GRAIN EXPORT BY UKRAINIAN RAILWAY, 2020-2022, thousand tonnes**



### BLACK SEA GRAIN INITIATIVE:

- The purpose: to facilitate the safe navigation for the export of foodstuffs and fertilizers, including ammonia from the Ukrainian ports (Odesa, Chornomorsk, Pivdennyi);
- Agreement term – 120 days, after that could be prolonged;
- The operation is coordinated by the Joint Coordination Centre (JCC) in Istanbul which includes representatives of Ukraine, Turkey, Russia and the United Nations;
- All inspections of ships will be carried out by joint groups in the waters of Turkey;
- No military vessel, aircraft or UAVs will close to within 10 nautical miles of a merchant vessel transiting the Maritime Humanitarian Corridor;
- If demining is necessary, a minesweeper of another country, upon agreement of the parties, will clear the approaches to Ukrainian ports.



### Behind-the-scenes agreements:

- Turkey received privileges in grain purchases (price, procurement priority);
- transition of Turkish 5 main banks to the Russian payment system "Mir";
- transition to payment in rubles for part of the Russian gas exported to Turkey;
- lifting restrictions on grain exports from Russia;
- lifting restrictions on fertilizer exports from Russia, including raw materials needed for fertilizer production;
- lifting restrictions on Russian import/export of medicines, medical equipment and accessories and related software;
- adjusting restrictions on import to Russia of aviation industry goods and services.



### EXECUTION OF THE AGREEMENT "Initiative for the safe transportation of grain and food products from Ukrainian ports"

Commodity	Number of vessels from specific port	Destination country	Quantity of vessels	Tonnage to specific country, metric tonnes	Total tonnage, metric tonnes
Corn	Chornomorsk – 29 Odesa – 24 Pivdennyi – 21	Spain	9	359,514	1,941,895
		Turkey	20	268,932	
		Egypt	8	214,391	
		Italy	9	193,714	
		Netherlands	3	131,600	
		Iran	2	126,234	
		Republic of Korea	2	124,720	
		Romania	5	119,367	
		Germany	2	107,260	
		Israel	2	95,251	
		China	2	82,340	
		Lebanon	3	49,884	
		Ireland	1	33,000	
		Greece	5	24,688	
Wheat	Chornomorsk – 24 Odesa – 17 Pivdennyi – 9	Libya	1	11,000	1,070,758
		Spain	9	274,828	
		Turkey	20	244,911	
		Bangladesh	2	101,500	
		Italy	7	100,551	
		Egypt	3	89,900	
		Sudan	1	65,340	
		Djibouti	2	53,300	
		Kenya	1	51,400	
		Yemen	1	37,500	
		Somalia	1	28,500	
		Romania	1	9,111	
		Tunisia	1	7,800	
		Greece	1	6,117	

• On July 22, 2022, the agreements were signed in Istanbul between Ukraine, Turkey, the United Nations and Russia;

• On July 27, the Joint Coordination Centre (JCC) for "grain corridors" organization from Ukrainian ports was officially opened in Istanbul, Turkey;

• On August 1, the first ship (RAZONI) carrying 26 thousand tonnes of Ukrainian corn left the Odesa port since February 24;

• On August 3, RAZONI vessel successfully passed the inspection by Joint Coordination Center in Istanbul and has continued its journey to Lebanon.

Source: based on the data of the Black Sea Grain Initiative Joint Coordination Centre

### EXECUTION OF THE AGREEMENT "Initiative for the safe transportation of grain and food products from Ukrainian ports"

Commodity	Number of vessels from specific port	Destination country	Quantity of vessels	Tonnage to specific country, metric tonnes	Total tonnage, metric tonnes
Rapeseed / Canola	Chornomorsk – 8 Odesa – 2 Pivdennyi – 1	Netherlands	3	100,918	264,324
		Germany	1	47,200	
		Belgium	1	30,000	
		France	3	51,006	
		Portugal	1	22,000	
		Romania	2	13,200	
Sunflower oil	Chornomorsk – 10 Odesa – 6 Pivdennyi – 7	India	4	125,600	243,359
		Turkey	9	68,836	
		Italy	4	23,850	
		Romania	1	12,500	
		Netherlands	1	9,600	
		Lebanon	1	2,973	
Sunflower meal	Chornomorsk – 6 Odesa – 1 Pivdennyi – 3	China	4	187,362	238,547
		Netherlands	1	18,500	
		Bulgaria	1	9,835	
		Spain	1	8,640	
		Turkey	1	5,300	
		Israel	1	4,510	
		Italy	1	4,400	
		China	3	89,194	
Barley	Chornomorsk – 3 Odesa – 5 Pivdennyi – 4	Spain	5	88,817	198,400
		Turkey	1	8,750	
		Greece	2	8,658	
		Libya	5	2,981	



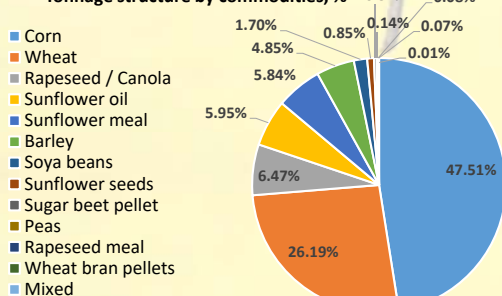
Source: based on the data of the Black Sea Grain Initiative Joint Coordination Centre

### EXECUTION OF THE AGREEMENT "Initiative for the safe transportation of grain and food products from Ukrainian ports"

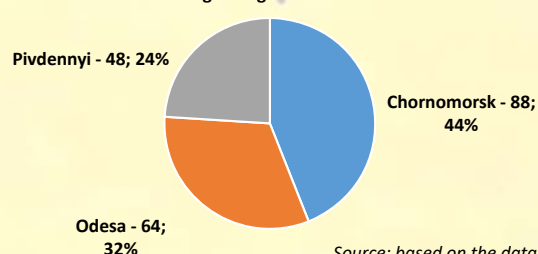
Commodity	Number of vessels from specific port	Destination country	Quantity of vessels	Tonnage to specific country, metric tonnes	Total tonnage, metric tonnes
Soybeans	Chornomorsk – 1 Odesa – 7 Pivdennyi – 2	Italy	4	41,800	69,322
		Turkey	4	15,122	
		Egypt	1	6,400	
		Israel	1	6,000	
Sunflower seeds	Chornomorsk – 3 Odesa – 1	Spain	1	18,150	34,864
		Turkey	2	11,114	
		Italy	1	5,600	
Sugar beet pellet	Pivdennyi – 1	Republic of Korea	1	14,000	14,000
Peas	Chornomorsk – 2	Turkey	2	5,770	5,770
Rapeseed meal	Odesa – 1	Italy	1	3,400	3,400
Wheat bran pellets	Chornomorsk – 1	Turkey	1	2,800	2,800
Mixed	Chornomorsk – 1	Turkey	1	257	257
<b>TOTAL</b>	<b>178 vessels</b> <b>200 cargos</b>	<b>As of September 20, 2022</b>			<b>4,087,696</b>



Tonnage structure by commodities, %



Number of grain cargoes left Ukrainian Black Sea ports under "grain agreement"

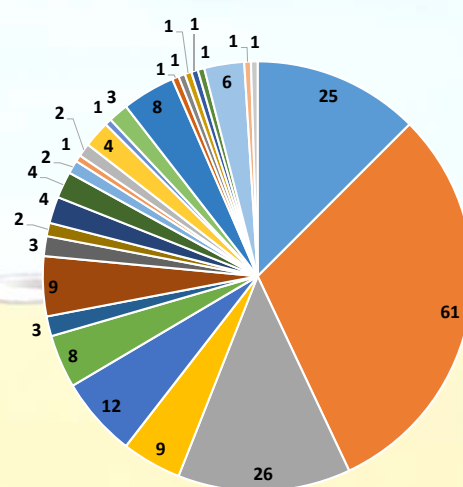


Source: based on the data of the Black Sea Grain Initiative Joint Coordination Centre

A pie chart illustrating the distribution of 1000 respondents across various age groups. The chart is divided into 21 segments, each representing a different age range and its corresponding percentage of the total sample. The segments are color-coded and labeled with their respective percentages.

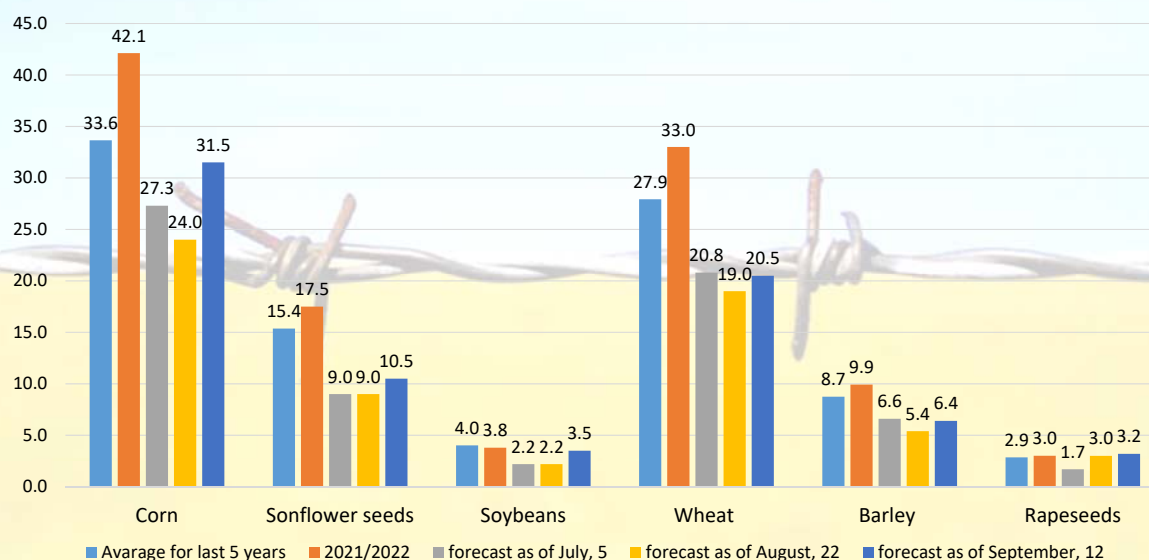
Age Group	Percentage
18-24	18.3%
25-34	15.5%
35-44	9.1%
45-54	8.8%
55-64	7.6%
65-74	6.4%
75-84	3.8%
85-94	3.8%
95-104	3.4%
105-114	3.1%
115-124	3.1%
125-134	2.6%
135-144	1.6%
145-154	1.3%
155-164	1.3%
165-174	1.2%
175-184	0.9%
185-194	1.0%
195-204	0.7%
205-214	0.7%
215-224	0.8%
225-234	0.5%
235-244	0.3%
245-254	0.2%

■ Spain ■ Turkey ■ Italy ■ China  
■ Romania ■ Republic of Korea ■ Iran ■ India  
■ Djibouti ■ Lebanon ■ Kenya ■ France  
■ Belgium ■ Somalia ■ Portugal ■ Libya



- Egypt
- Israel
- Greece
- Bulgaria
- Netherlands
- Bangladesh
- Yemen
- Tunisia
- Germany
- Sudan
- Ireland

**ESTIMATED HARVEST IN UKRAINE**  
as of September 12, 2022, million metric tonnes



Source: based on the data of the Ukrainian Agribusiness Club and USDA



# PROGRESS OF FIELD WORK IN UKRAINE

## Harvesting of grain, legumes and oil crops as of September 16, 2022

Crops	Forecast, thousand hectares	Harvested, thousand hectares	Harvested, thousand metric tonnes	Average 2022 yields, metric tonnes per hectare / bushels per acre	Average 2021 yields, metric tonnes per hectare / bushels per acre
<b>Grain and legumes total, including:</b>	<b>10,809.4</b>	<b>6,459.8</b>	<b>25,169.4</b>	<b>3.90</b>	<b>5.50</b>
•wheat	4,715.3	4,680.5	19,215.0	4.11/ 61.11	4.64 / 69.00
•barley	1,595.9	1,591.4	5,522.9	3.47 / 64.50	3.92 / 72.86
•peas	111.5	109.4	250.7	2.29 / 34.05	2.43 / 36.13
•buckwheat	117.4	40.5	58.5	1.44 / 26.77	1.30 / 24.16
•millet	44.7	25.8	58.6	2.27 / 34.33	2.52 / 38.11
•corn	4,224.6	12.2	63.7	5.23 / 83.32	8.01 / 127.61
Soybeans	1,522.8	71.5	172.3	2.41 / 35.84	2.68 / 39.85
Rapeseed	1,093.8	1,091.7	3,125.7	2.86 / 51.03	2.95 / 52.64
Sunflower	4,695.6	478.4	924.4	1.93 / 57.40	2.52 / 74.94



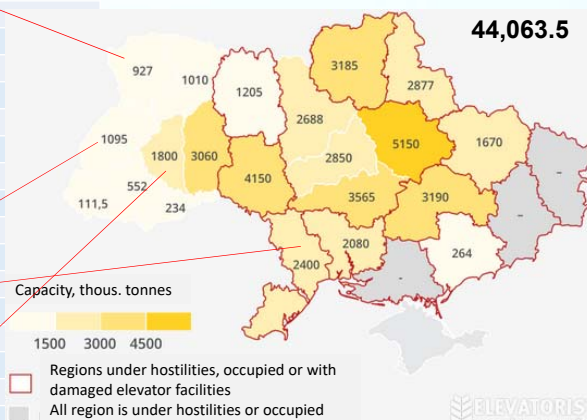
Source: based on the data of the State Statistic Service of Ukraine

## TOTAL HARVEST OF GRAIN, LEGUMINOUS AND OIL CROPS IN UKRAINE, 2020-2022, thousand metric tonnes

Regions	Total volume of harvest		Harvested as of September, 16			
	2020	2021	2020	2021	2022	+/-2022 to 2021,%
<b>Ukraine</b>	<b>63,530.4</b>	<b>83,209.6</b>	<b>43,976.5</b>	<b>49,972.6</b>	<b>29,391.8</b>	-41.2
Vinnitsya	4,353.2	6,705.0	2,426.4	2,572.8	2,091.1	-18.7
Volyn	1,197.0	1,381.4	1,292.6	1,043.7	1,150.9	10.3
Dnipropetrovsk	3,548.9	4,818.5	3,816.8	4,042.1	2,771.6	-31.4
Donetsk	1,974.2	2,249.8	2,396.6	2,355.6		
Zhytomyr	2,322.6	3,198.9	834.7	1,205.9	938.8	-22.1
Zakarpattia	360.4	317.5	116.5	98.1	115.1	17.3
Zaporizhzhya	2,969.1	3,522.9	3,689.5	3,520.5		
Ivano-Frankivsk	793.8	876.6	496.4	430.5	532.5	23.7
Kyiv	2,901.6	3,809.7	1,788.0	1,734.4	1,177.9	-32.1
Kirovohrad	2,606.7	4,624.7	2,064.5	2,790.9	2,351.7	-15.7
Luhansk	1,362.1	1,274.7	1,553.5	1,531.8		
Lviv	1,394.7	1,733.8	1,342.9	1,224.3	1,257.8	2.7
Mikolayiv	2,376.3	3,722.8	2,816.7	3,757.6	1,937.5	-48.4
Odesa	1,995.3	5,122.0	1,746.0	4,763.2	2,846.4	-40.2
Poltava	5,098.0	5,659.1	2,097.0	2,074.4	1,779.2	-14.2
Rivne	1,223.5	1,577.8	889.9	926.2	808.0	-12.8
Sumy	4,769.7	4,256.2	1,595.8	1,349.3	1,368.2	1.4
Ternopil	2,600.5	3,120.8	1,779.2	1,838.7	1,902.5	3.5
Kharkiv	4,795.8	4,814.2	3,862.8	3,655.0	1,248.8	-65.8
Kherson	2,700.1	3,499.7	2,737.8	3,542.4		
Khmelnyskiy	4,029.4	5,254.6	1,815.9	2,124.0	2,235.1	5.2
Cherkasy	2,745.3	4,875.7	1,371.6	1,918.8	1,636.1	-14.7
Chernivtsi	596.7	679.7	312.0	293.7	276.7	-5.8

Total grain storage capacity of Ukraine as of May 2022, thousand of metric tonnes

44,063.5



## PROGRESS OF FIELD WORK IN UKRAINE

### Sowing of winter crops, thousand hectares

Crops	Planted in 2020	Planted in 2021	Forecast for 2022	Planted as of September 19, 2022	Forecast 2022 to planted in 2021
<b>Winter crops total, including:</b>	<b>8,973.5</b>	<b>9,029.4</b>	<b>5,714.6</b>	<b>1,359.4</b>	<b>63.29 %</b>
• winter wheat	6,714.4	6,538.4	<b>3,989.4</b>	364.2	61.01 %
• winter barley	1,080.4	969.0	<b>675.7</b>	31.9	69.73 %
• winter rapeseeds	1,011.9	1,413.5	<b>963.9</b>	948.0	68.19 %
• winter rye	166.8	108.5	<b>85.6</b>	15.3	78.89 %



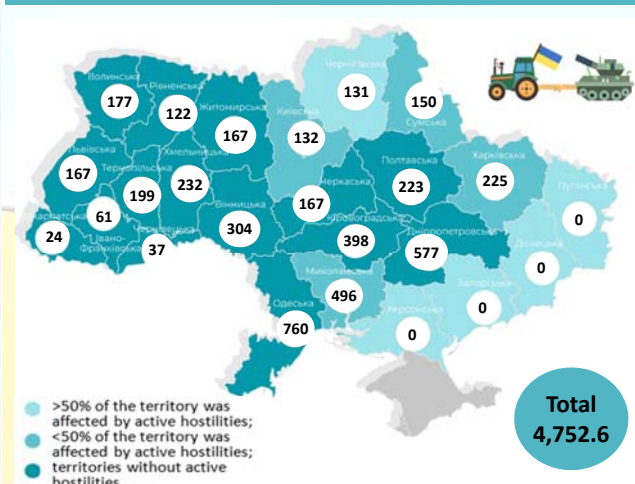
Source: based on the data of the State Statistic Service of Ukraine

## PROGRESS OF FIELD WORK IN UKRAINE

### Sowing of winter crops, thousand hectares, as of September 16, 2022

Regions	Planted		As of September 16, 2022		Forecast 2022 to planted 2021, %
	2020	2021	Forecast	Planted	
Vinnitsya	348.7	359.0	303.8	5.7	84.6
Volyn	185.5	185.0	176.7	0.1	95.5
Dnipropetrovsk	567.7	575.4	577.3	25.6	100.3
Donetsk	351.1	379.4	0.0	0.0	0.0
Zhytomyr	119.5	182.2	167.5	2.4	91.9
Zakarpattia	25.9	25.2	24.0	0.2	95.2
Zaporizhzhya	676.0	541.5	0.0	0.0	0.0
Ivano-Frankivsk	69.4	49.7	61.0	0.7	122.7
Kyiv	188.0	211.5	131.6	10.7	62.2
Kirovohrad	374.0	351.6	398.5	6.8	113.3
Luhansk	284.8	292.8	0.0	0.0	0.0
Lviv	141.6	172.6	167.4	5.8	97.0
Mikolayiv	615.5	648.3	495.9	5.9	76.5
Odesa	670.0	551.3	760.5	0.0	137.9
Poltava	238.1	263.2	223.5	11.1	84.9
Rivne	124.5	137.1	122.0	5.3	89.0
Sumy	112.1	170.3	150.0	17.1	88.1
Ternopil	184.5	216.8	199.3	12.5	91.9
Kharkiv	506.4	520.6	225.0	3.7	43.2
Kherson	574.1	570.2	0.0	0.0	0.0
Khmelnitskiy	153.0	227.1	232.5	19.4	102.4
Cherkasy	118.7	212.4	167.2	2.6	78.7
Chernivtsi	46.9	44.7	37.5	0.1	83.9
Chernihiv	175.8	202.5	131.4	21.3	64.9
<b>Ukraine</b>	<b>6,851.9</b>	<b>7,090.5</b>	<b>4,752.6</b>	<b>157.0</b>	<b>67.0</b>

### 2022/23 winter crops sowing campaign forecast, thousand hectares



Source: based on the data of the State Statistic Service of Ukraine

**BALANCE OF SUPPLY AND DEMAND OF GRAIN AND LEGUMES IN UKRAINE (\*forecast as of September 12, 2022)**

	2020/21	2021/22	2022/23*		Deviation , %		
	thousand tonnes	thousand tonnes	thousand tonnes		2021/22 - 2020/21	2022/23 - 2021/22	
			optimistic	pessimistic		optimistic	pessimistic
Initial stocks	4,866	5,861	14,962	14,962	+20.4%	in+2.6times	in+2.6times
Sown area, thousand hectares	15,392	15,995	13,997	13,997	+3.9%	-12.5%	-12.5%
Harvested area, thousand hectares	15,283	15,948	11,423	11,151	+4.4%	-28.4%	-30.1%
Yield, tonnes / hectare	4.25	5.39	4.58	4.85	+26.8%	-15.0%	-10.0%
Gross harvest	64,933	86,010	55,732	54,104	+32.5%	-35.2%	-37.1%
Import	208	125	129	117	-39.9%	+3.1%	-6.5%
<b>Total supply</b>	<b>70,008</b>	<b>91,997</b>	<b>70,823</b>	<b>69,183</b>	<b>+31.4%</b>	<b>-23.0%</b>	<b>-24.8%</b>
Domestic consumption:	18,784	26,432	19,487	19,352	+40.7%	-26.3%	-26.8%
food	3,490	3,415	2,724	2,602	-2.2%	-20.2%	-23.8%
fodder	10,520	14,375	10,905	10,905	+36.6%	-24.1%	-24.1%
seeds	2,224	1,928	2,109	1,576	-13.3%	+9.4%	-18.3%
losses	1,525	5,742	2,804	3,373	in+3.8 times	-51.2%	-41.3%
other (alcohol, malt, starch, etc.)	1,021	964	935	885	-5.5%	-3.0%	-8.2%
Export	45,363	50,603	38,829	22,623	+11.6%	-23.3%	-55.3%
<b>Total distribution (demand)</b>	<b>64,147</b>	<b>77,035</b>	<b>58,316</b>	<b>41,975</b>	<b>+20.1%</b>	<b>-24.3%</b>	<b>-45.5%</b>
Ending stocks	5,861	14,962	12,507	27,208	in+2.6times	-16.4%	+81.9%
Ratio of ending stocks to distribution	9%	19%	21%	65%			

Source: based on "APK-Inform", the State Statistic Service of Ukraine and the State Customs Service of Ukraine

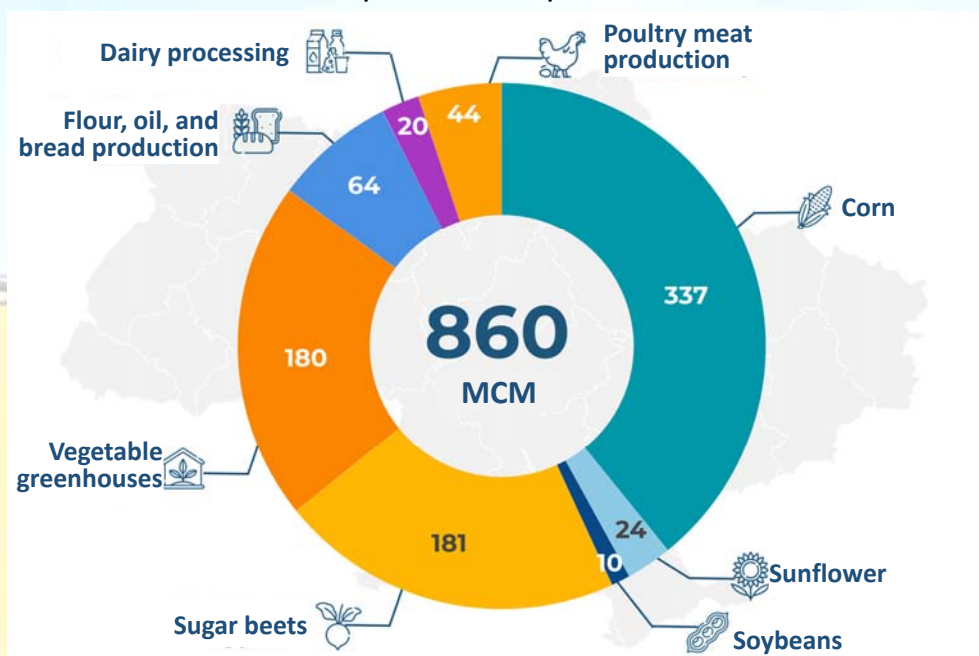
**Provision of agricultural enterprises with plant protection products in 2022 as of September 15, 2022**

Region	The need for plant protection products		Received in farms of plant protection products		Including herbicides	
	Total	Including herbicides	Total	in % to the need	Total	in % to the need
Vinnitsya	2 820.8	1 619.3	2 902.4	102.9	1 696.0	104.7
Volyn	1 154.4	530	1 124.8	97.4	507.7	95.8
Dnipropetrovsk	2 167.1	1 312.1	2 056.7	94.9	1262.5	96.2
<b>Donetsk</b>	<b>808</b>	<b>515</b>	<b>143.1</b>	<b>17.7</b>	<b>90</b>	<b>17.5</b>
Zhytomyr	1 227.0	903.2	1 390.1	113.3	926.4	102.6
Zakarpattya	298.8	120.7	343	114.8	173.9	144.1
<b>Zaporizhzhya</b>	<b>1 251.0</b>	<b>680</b>	<b>147.6</b>	<b>11.8</b>	<b>48.8</b>	<b>7.2</b>
Ivano-Frankivsk	618.7	299.8	631.7	102.1	320.7	107
Kyiv	1 553.0	1 100.0	1 669.2	107	1 102.8	102
Kirovohrad	1 531.0	1 090.0	1 531.0	100	1 090.4	100
<b>Luhansk</b>	<b>535</b>	<b>381</b>	<b>323.3</b>	<b>60.4</b>	<b>223.3</b>	<b>58.6</b>
Lviv	1 661.3	933.1	1 454.8	87.5	819.5	87.8
Mikolayiv	1 010.0	483	797.1	78.9	394.9	81.8
Odesa	1 481.0	597	1 841.4	100	609.9	102.2
Poltava	2 838.4	2 214.7	3 216.4	113.3	2 391.9	108
Rivne	1 119.3	697	962.1	86	564.8	81
Sumy	2 401.0	1 711.2	2 390.8	99.6	1 712.0	100
Ternopil	1 805.2	1 005.7	1 805.2	100	1 005.7	100
Kharkiv	1 636.0	1 250.0	637.2	38.9	477	38.2
<b>Kherson</b>	<b>1 043.0</b>	<b>342</b>	<b>384</b>	<b>36.8</b>	<b>117</b>	<b>34.2</b>
Khmelnyskiy	2 249.0	1 393.0	2 773.4	123.3	1 551.8	111.4
Cherkasy	1 769.7	1 359.7	1 756.4	99.2	1 368.8	100.7
Chernivtsi	614.5	164.1	655.5	106.7	164.2	100.1
<b>Chernihiv</b>	<b>1 491.8</b>	<b>1 042.0</b>	<b>1 379.4</b>	<b>92.5</b>	<b>1 033.3</b>	<b>99.2</b>
<b>Total</b>	<b>35 085.0</b>	<b>21 743.6</b>	<b>32 316.6</b>	<b>92.1</b>	<b>19 653.3</b>	<b>90.4</b>

Source: the Ministry of Agrarian Policy and Food of Ukraine

## THE NEED OF THE AGRICULTURAL SECTOR OF UKRAINE IN NATURAL GAS

September 2022 – April 2023

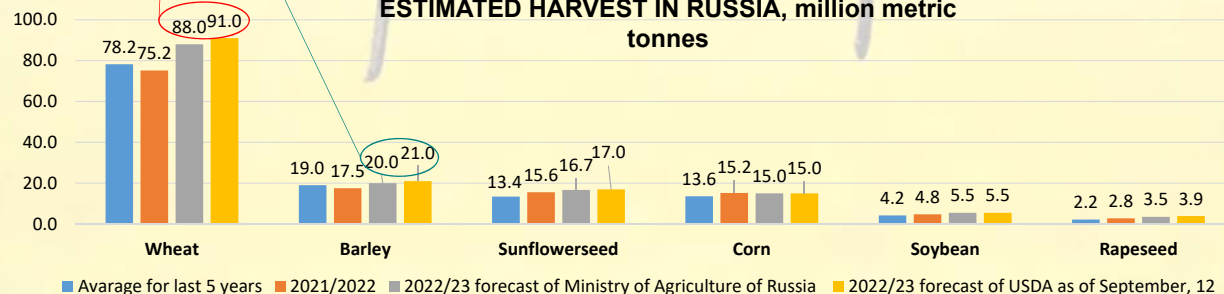


1 Cubic Metre  
= 264 US  
fluid gallons

## PROGRESS OF FIELD WORK IN RUSSIA

Crops	Harvested as of September, 19							Average yields, metric tonnes per hectare / bushels per acre		
	million tonnes			million hectares						
	2022	2021	2022+/-2021	2022	% of sown area	2021	2022+/-2021	2022	2021	2022+/-2021
<b>Grain total, including:</b>	<b>133.5</b>	<b>100.3</b>	<b>+ 33.2</b>	<b>38.8</b>	<b>81.6 %</b>	<b>37.5</b>	<b>+ 1.3</b>	<b>3.44</b>	<b>2.66</b>	<b>+ 0.78</b>
• wheat	97.3	71.9	+ 25.4	25.9	87.9 %	24.5	+ 1.4	3.76 / 55.91	2.90 / 43.12	+ 0.86 / + 12.79
• barley	23.2	17.8	+ 5.4	7.6	94.9 %	7.3	+ 0.3	3.06 / 56.86	2.42 / 44.98	+ 0.64 / + 11.98
• corn	0.80	1.3	- 0.5	0.14	4.8 %	0.28	- 0.14	5.84 / 93.04	4.38 / 55.82	+ 1.46 / + 37.22
Soybeans	0.57	0.83	- 0.26	0.27	7.8 %	0.48	- 0.21	2.12 / 31.52	1.69 / 25.13	+ 0.43 / + 6.39
Rapeseed	3.3	1.8	+ 1.5	1.3	54.9 %	0.94	+ 0.36	2.57 / 45.86	1.73 / 30.87	+ 0.84 / + 14.99
Sunflower seed	1.62	2.4	- 0.78	0.71	7.0 %	1.4	- 0.69	2.30 / 68.40	1.63 / 48.48	+ 0.67 / + 19.92

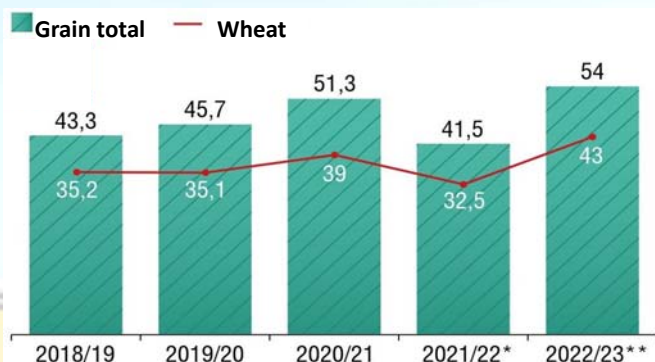
## ESTIMATED HARVEST IN RUSSIA, million metric tonnes



Source: based on the data of the Ministry of Agriculture of Russia and USDA/FAS

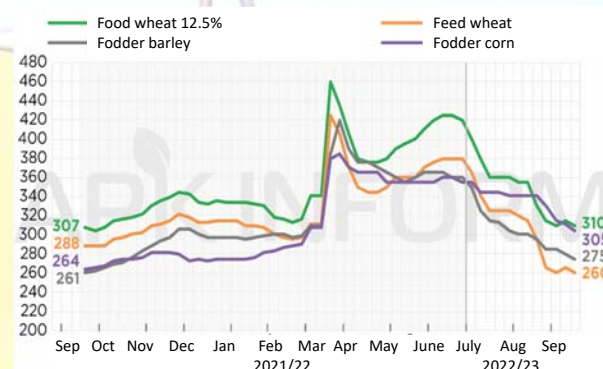


## GRAIN EXPORT FROM RUSSIA, million metric tonnes



## EXPORT PRICES FOR GRAIN IN RUSSIA (DEEP WATER PORTS) as of September 16, 2022. Offer, FOB, USD/t

	Min	+/- to previous month	Max	+/- to previous month	Average	+/- to previous month
Food wheat 12.5%	303	-7	320	-5	310	-5
Feed wheat	255	-5	270		260	-5
Fodder corn	270	-3	285		275	-5
Fodder barley	297	-10	315	-5	305	-7

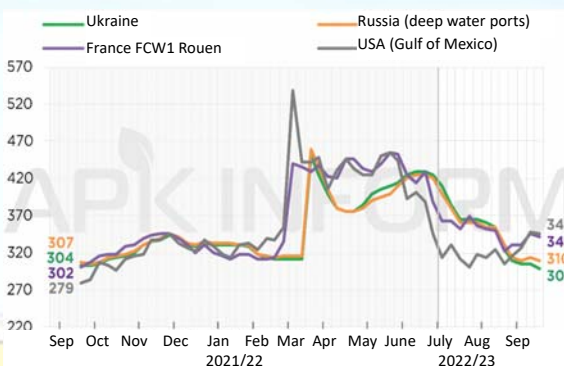


Source: based on the data of the Ministry of Agriculture of Russia and APK-inform

## WORLD GRAIN PRICES, USD/t

	Stock/month	Country of origin	Terms of delivery	Sept 16	Sept 9	Sept 2	Aug 26	week. change, USD/t	%
<b>The futures market</b>									
Wheat	CBOT, Dec.	USA	EXW	315.8	319.4	291.4	288.3	-3.6	-1.1%
Wheat	CBOT, Sept.	Black Sea	FOB	310.3	311.8	313.0	338.0	-1.5	-0.5%
Milling wheat	Euronext, Dec.	France	CPT Rouen	333.3	330.7	323.4	329.7	2.6	0.8%
Wheat	LIFFE, Nov.	EU	EXW	315.7	316.7	308.2	310.5	-1.0	-0.3%
Wheat	BCA, Sept.	Argentina	EXW	315.0	307.0	295.0	301.0	8.0	2.6%
Corn yellow	CBOT, Dec.	United States	EXW	266.6	269.7	263.4	263.2	-3.1	-1.1%
Corn	Euronext, Nov.	France	FOB	327.6	327.7	315.9	315.5	-0.1	0.0%
Corn hard	BCA, Sept.	Argentina	EXW	245.0	245.0	233.5	243.0	0.0	0.0%
<b>Cash market</b>									
Wheat SRW	Sept.	USA	CPT Mex.	345.3	348.9	327.4	316.6	-3.6	-1.0%
Wheat hard	Sept.	Argentina	FOB	400.0	400.0	400.0	400.0	0.0	0.0%
WheatFCW1	Sept.	France	FOB	341.0	345.0	331.0	331.0	-4.0	-1.2%
Corn yellow	Sept.	USA	CPT Mex.	311.1	319.5	305.5	304.6	-8.4	-2.6%
Corn	Sept.	Argentina	FOB	299.0	298.0	286.0	289.0	1.0	0.3%
Fodder barley	Sept.	France	FOB	295.1	295.2	291.6	291.5	-0.1	0.0%

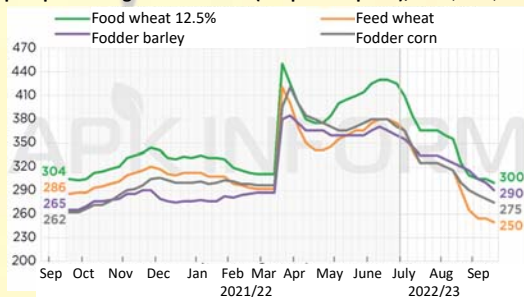
## Dynamics of food wheat prices, USD/t



## EXPORT PRICES FOR GRAIN IN UKRAINE (DEEP WATER PORTS) as of September 16, 2022. Offer, FOB, USD/t

	Min	+/- to previous month	Max	+/- to previous month	Average	+/- to previous month
Food wheat 12.5%	295	-5	310	-5	300	-5
Food wheat 11.5%	285	-5	305		290	-5
Feed wheat	245	-5	265		250	-5
Fodder corn	275	-10	295	-15	290	-10
Fodder barley	265	-5	285	-5	275	-5

## Export prices for grain in Ukraine (deep water ports), Offer, FOB, USD/t





Thank you!

Questions?

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