

PAK-SCMS

BULLETIN

PAKISTAN: SATELLITE BASED CROP MONITORING SYSTEM

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SUPARCO, the National Space Agency of Pakistan, started the program on "Monitoring of Crops through Satellite Technology" during the year 2005. This is a perpetual study encompassing all growing seasons around the year. The purpose of this initiative is to reinforce support for policy makers, planners and private sector for food security, stocking, marketing, trade and industrial management. The final crop estimates are released by end of March for Rabi crops and mid of October for Kharif crops.

Food and Agriculture Organization of United Nations, (FAO-UN) provided technical backstopping for analytics and transfer of technology. Wheat, cotton, rice, sugarcane, maize and potato crops are being covered under this program. In addition, large scale geospatial applications of satellite remote sensing technology have been made for monitoring/mitigation of natural disasters (floods, flash floods, and drought) and providing reconnaissance detailed information ordained for the uplift of agriculture and allied pursuits.

INSIDE THIS ISSUE

	CROP SITUATION: JANUARY, 2022	01
	AGRO-MET CONDITIONS: JANUARY, 2022	06
	IRRIGATION WATER SUPPLY SITUATION: JANUARY, 2022	09
	FERTILIZER SITUATION	10
	AGRI. RECOMMENDATIONS	11

CROP SITUATION: FEBRUARY 2022

Summary

By the end of February 2022, Satellite based Normalized Difference Vegetation Index (NDVI) was at peak depicting active crop growth and high photosynthetic activity of rabi crops. Generally, above normal day and night temperatures were observed in most parts of the country. Wide spread 3-4 rain spells with below normal rains were received in Punjab, Khyber Pakhtunkhwa, Gilgit-Baltistan, Azad Jammu & Kashmir. 2-3 rain spells with light rains were observed at scattered places in Balochistan. Sindh remained almost dry during the month.

Wheat crop is at different growth stages from maturity to vegetative growth phase according to its cropping season gradient from South to North. Federal government set target of 28.9 million tons from an area of 9.2 million hectares. Unfavorable weather conditions and expected heat wave / rains in near future, fertilizer/irrigation shortage and rust prevalence are likely factors to impact this target achievement in the current season.

According to PCGA FINAL report of 1st

March, 2022, cotton arrivals in the ginning factories of Pakistan showed an increase of 32 percent as compared to same period of last year. Cotton arrivals remained higher by 12.2 and 64.46 percent in Punjab and Sindh, respectively, as compared to 1st March 2021.

By the end of February, after a peak momentum of sugarcane crop harvesting, sugarcane crushing started to unruffled with sugar mills' closure notices in the start of March. Generally sugarcane growers were satisfied with sugarcane procurement mechanism and market prices.

As per report of Indus River System Authority (IRSA) for February 2022, the irrigation water supply was 3.66 MAF against the last year's supply of 4.64 MAF, down by 20.93 percent. As compared to the same period of last year, the irrigation water supplies were decreased in Punjab, Sindh and Balochistan.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in January 2022 was

CROPS SITUATION

621 thousand tons whereas total availability of DAP was 341 thousand tons. During January 2022, off take of Nitrogen was decreased by 10.5 percent as compared to the same period of last year. Phosphate and Potash off take, however, was increased by 6.4 and 16.4 percent respectively, as compared to the same period of last year.



Normalized Difference Vegetation Index (NDVI) 28th February 2022

Rabi 2021-22

Wheat Crop 2021-22

Wheat being staple food is directly linked with national food security. This year ministry of national food security and research assessed wheat requirement of 30 million tons. It is therefore, wheat production target of 28.9 million tons from an area of 9.2 million hectare was fixed to meet this target. But prevailing and forecasted situation is not supportive to achieve this target. The only positive factor relevant to this target achievement was increase in support price from Rs. 1800 to 1950 per 40 kg. This incentive was not much appreciated by farming community due to higher increase in cost of production. Resultantly wheat area decreased from last year. Other negative factors for wheat crop 2021-22 were;

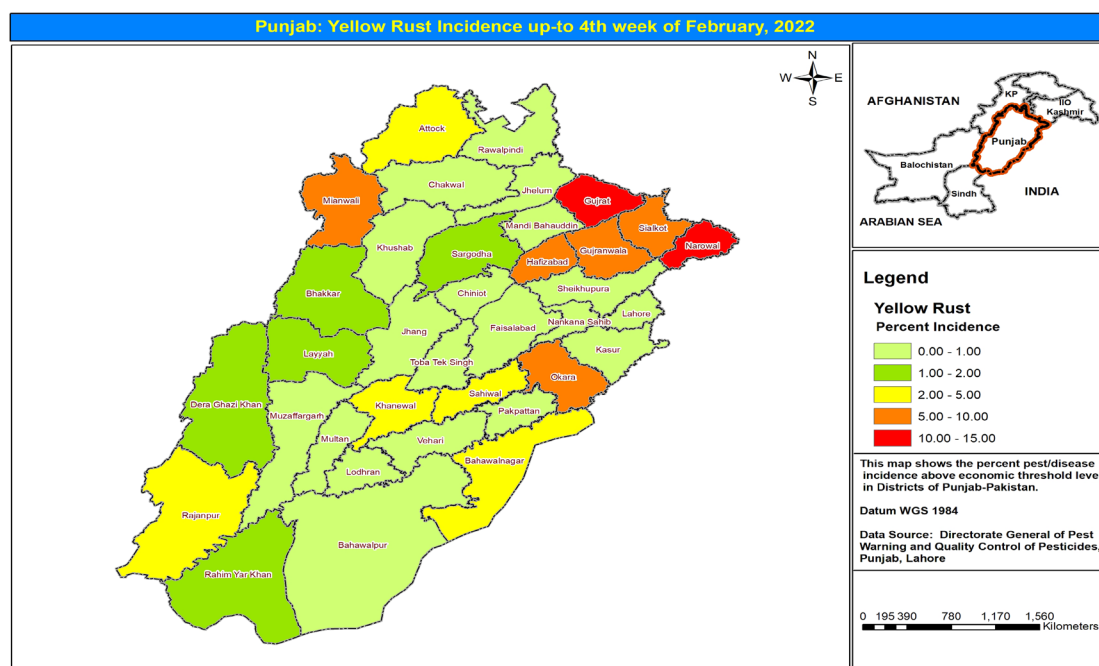
1. Unfavourable weather conditions particularly above normal temperatures
2. Urea shortage and high prices.
3. Irrigation supplies shortage. Although rains compensated this short supply but above normal temperature during February affected effectiveness of rains.
4. Rust disease prevalence and spread due to conducive weather conditions.
5. Forecast of rains in the end of March or start of April may affect wheat production through disturbance in source sink relationship and high post-harvest losses.

The situation needs a proactive vigilant approach for crop husbandry measures to mitigate above factors to have maximum possible wheat production during 2021-22.

Federal government refused to increase wheat support price from Rs 1950 fixed in the start of season to Rs.2200/- to control upward trend of inflation. Sindh has already fixed wheat support price of Rs. 2200/- per 40kg and further Punjab government has also increased wheat support to Rs. 2200/- per 40kg. Difference in wheat support price between federal and provincial governments may affect wheat procurement process.

FCA Targets 2021-22			
Province	Area (000 ha)	Production (000 Tons)	Yield (kg/ha)
Punjab	6,560	21,945	3,345.3
Sindh	1,200	4,200	3,500.0
Khyber Pakhtunkhwa	900	1,525	1,694.4
Balochistan	550	1,215	2,209.1
Total	9,210	28,885	3136.3

Source: FCA



Kharif Crops 2021-22

Cotton Crop 2021-22

Cotton is vital crop because of raw material for the country's top export industry. Pakistan exports were USD 17.7 million during 2022 (July-Jan) with an increase of 24.5 % from last year exports of USD 14.26 million during the same time period. It consists of USD 10.9 million textile group exports with an increase of 24.7 % from last year exports of USD 8.8 million. This increase trend in exports particularly of textiles demands more cotton production to meet local and export requirements. This can be achieved through enhanced net returns by low cost quality inputs provision and better phutti prices.

This year phutti prices remained very attractive showing an increase of around 40 to 50 % from last year. Although high cost of crop production affected farmers profitability but net returns to cotton growers are better than last year. This may attract farmers' attention to grow more cotton with better husbandry measures during coming cotton season.

According to PCGA final report of 1st March, 2022, cotton arrivals in the ginning factories of Pakistan showed an increase of 32 percent as compared to same period of last year. Cotton arrivals remained higher by 12.2 and 64.46 percent in Punjab and Sindh, respectively, as compared to 1st March 2021. The detail about cotton bales arrival is given below:

Province	2022	2021	Difference	
	(000 bales)		Percent	
Punjab	3928.690	3501.580	427.110	12.20
Sindh	3513.143	2136.169	1376.974	64.46
Total	7441.833	5637.749	1804.084	32.00

Source: PCGA

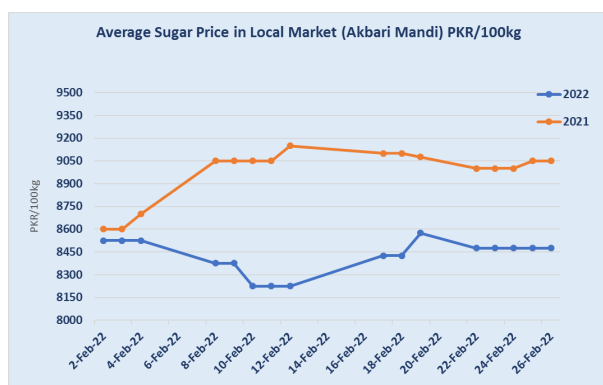
Sugarcane Crop 2021-22

After a peak momentum of sugarcane crop harvesting, sugarcane crushing started to cool down with sugar mills closure notices in the start of March. Generally sugarcane growers were satisfied with sugarcane procurement mechanism and market prices.

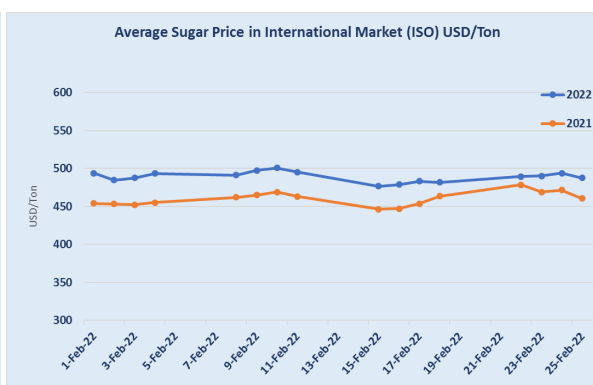
Sugar price in the international market during January 2022 was approximately 11.25 percent higher compared to January 2021. Average sugar price during January 2022 was USD 494.36 per ton against the average sugar price of USD 438.73 per ton during January 2021, showing average increase of USD 55.63 per ton.

Sugar prices in the local market also remained higher during January 2022 as compared to January 2021. Average sugar price during January 2022 was around Rs. 8873.85 per 100 kg as against the average sugar price of Rs. 8716.09 per 100 kg showing an increase of around Rs. 157.76 per 40 kg (approx. 1.17 percent higher).

Graphs showing daily white sugar price index in the International market (International Sugar Organization) and daily average sugar price in the local market (Akbari Mandi) are given below:



Source: Akbari Mandi



Source: ISO

Kharif Crops 2021-22

Rice Crop 2021-22

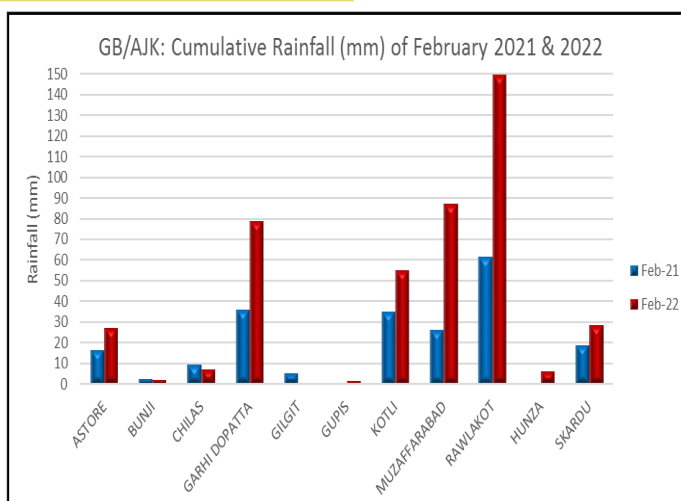
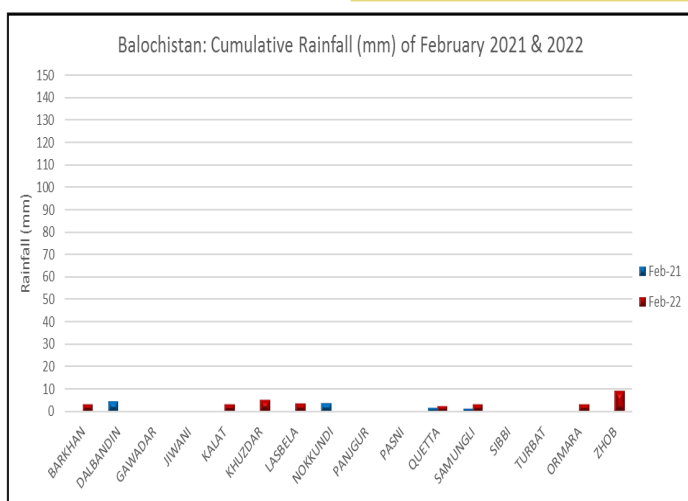
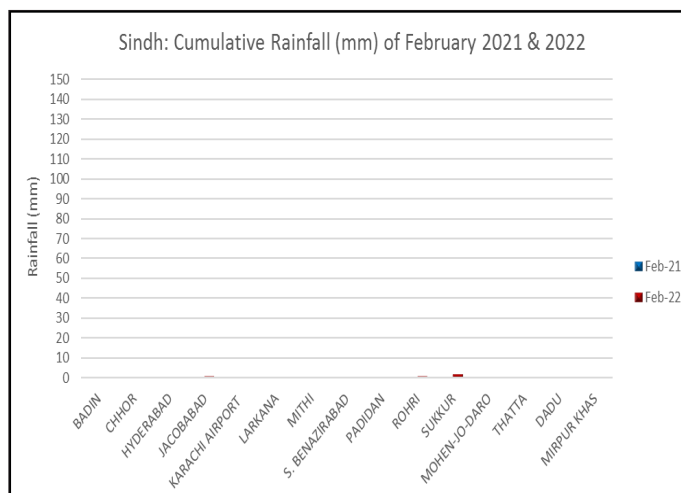
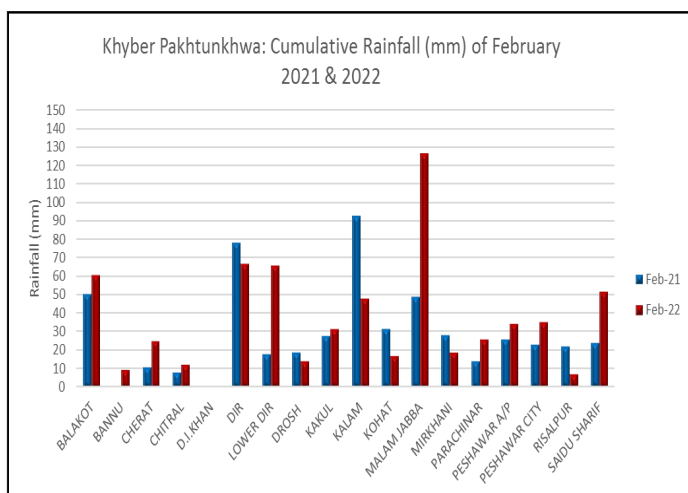
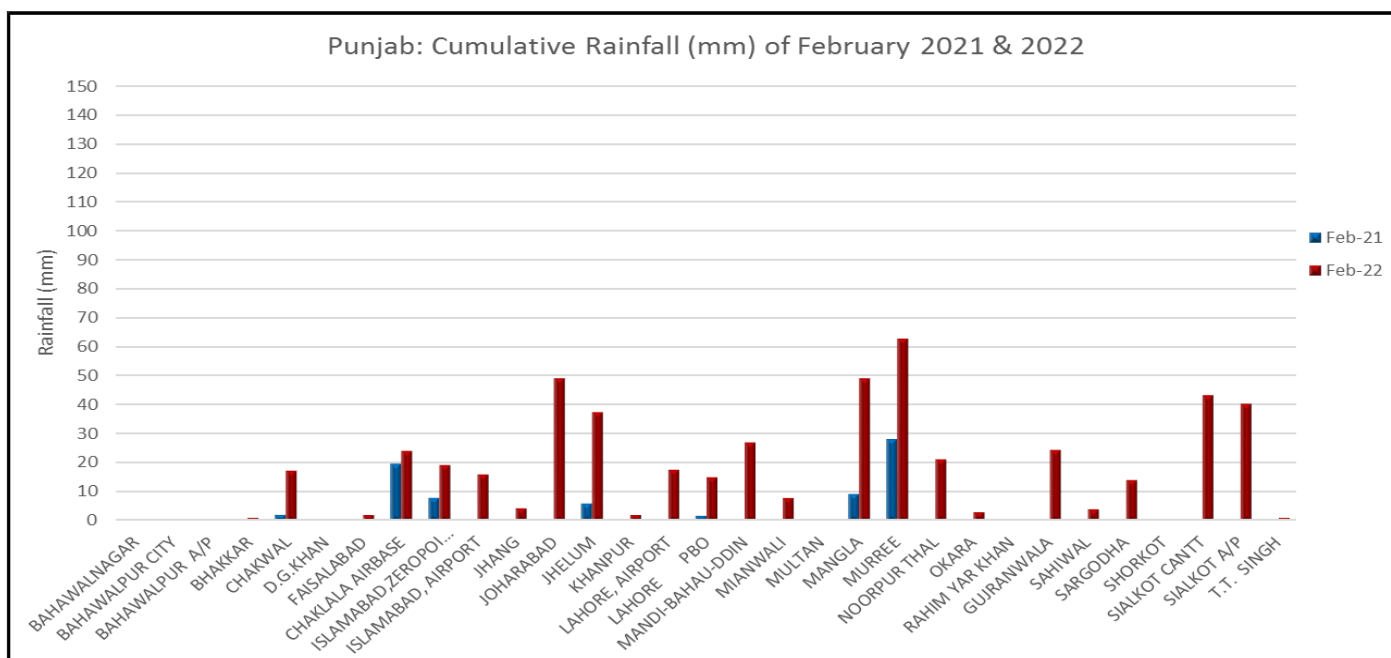
This year Pakistan witnessed highest rice production. This high production needs to be disposed of to maintain rice prices in local market through enhanced export. During 2021-22 (July-Jan) rice exports were increased 17.1 percent from 2.18 million tons to 2.55 million tons. However in financial terms rice exports increased 11.16 percent from USD 1.2 million to USD 1.3 million due to higher rice prices in the international market.

Rice Type	Jan-Jul (Quantity-Tons)			Jan-Jul (Values-USD)		
	2021-22	2020-21	Percent Increase	2021	2020	Percent Increase
Basmati	414190	293761	41.0	362189	281675	5.56
Others	2138198	1886148	13.36	924668	875959	28.58
Total	2552388	2179909	17.1	1286851	1157634	11.16

Source: PBS Export Data

Rice prices in the local market remained lower during February 2022 as compared to February 2021. Average rice price during February 2022 was around Rs. 8250 per 100 kg as against the average rice price of Rs. 9250 per 100 kg showing a decrease of around Rs. 1000 per 40 kg (approx. 10 percent lower). This decrease in prices is due to high rice production in the country.

Monthly Rainfall (mm): February (2021 & 2022)



Source: PMD

Maximum Temperature: February, 2022

The ranges of maximum temperature (°C) during February 2022 were as follows:



Source: PMD

Minimum Temperature: February, 2022

The ranges of minimum temperature (°C) during February 2022 were as follows:



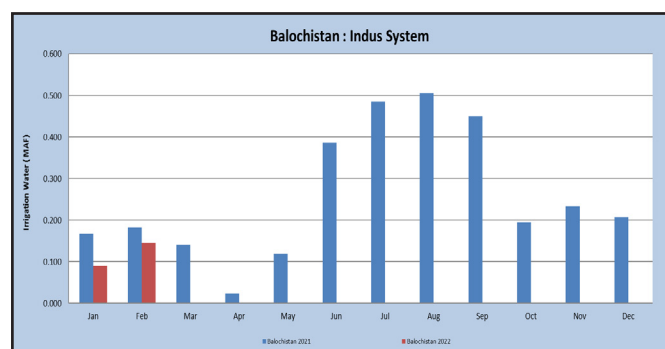
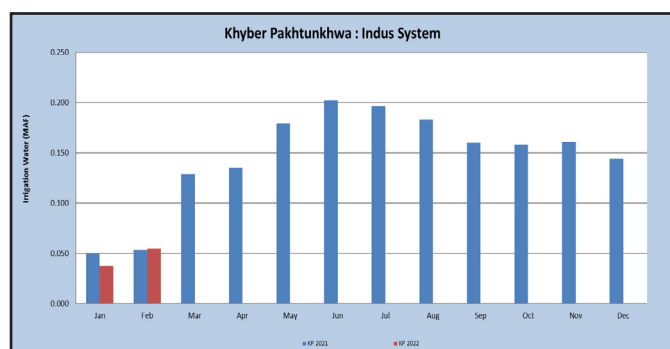
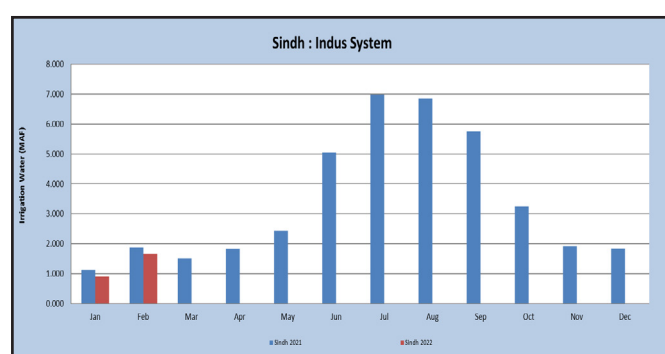
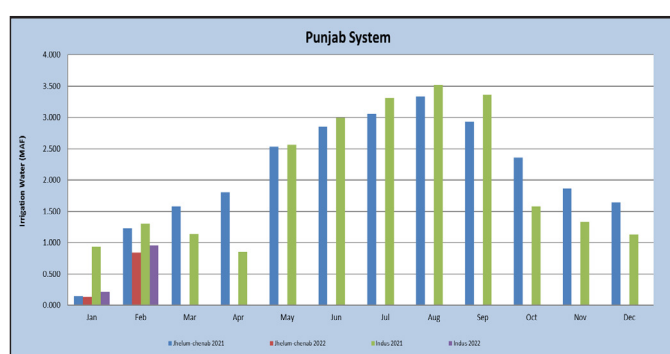
Source: PMD

Irrigation Water Supply: February, 2022

The irrigation water supply during February 2022 was 3.66 MAF against the last year's supply of 4.64 MAF, lower by 0.97 MAF (20.93 percent). During February 2022, as compared to the same time period of last year, the supply in Punjab was 1.26 MAF (lower by 50.02 percent), Sindh was 1.66 (lower by 10.93 percent), Khyber Pakhtunkhwa was 0.05 MAF (higher by 2.2 percent) while Balochistan received water supply of 0.14 MAF (lower by 20.39 percent).

Rabi 2021-22	Month	Year	Punjab			Sindh	Khyber Pakhtunkhwa	Balochistan	Total
			Jhelum-Chenab	Indus	Total				
			Million Acre Feet						
	Oct	2021	2.36	1.58	3.93	3.25	0.16	0.20	7.54
		2020	2.23	2.24	4.47	3.37	0.15	0.24	8.23
		Change	0.12	-0.66	-0.54	-0.12	0.01	-0.05	-0.69
		% change	5.57	-29.60	-12.03	-3.46	8.01	-19.08	-8.38
	Nov	2021	1.86	1.33	3.20	1.91	0.16	0.23	5.50
		2020	1.73	1.93	3.66	2.31	0.10	0.25	6.32
		Change	0.13	-0.60	-0.46	-0.40	0.06	-0.02	-0.82
		% change	7.68	-30.86	-12.64	-17.25	65.31	-7.81	-12.90
	Dec	2021	1.65	1.13	2.78	1.83	0.14	0.21	4.96
		2020	1.56	1.51	3.07	1.89	0.10	0.24	5.29
		Change	0.09	-0.38	-0.29	-0.06	0.04	-0.03	-0.33
		% change	5.63	-24.96	-9.43	-2.99	44.51	-13.60	-6.31
	Jan	2022	0.13	0.22	0.35	0.91	0.04	0.09	1.38
		2021	0.15	0.94	1.09	1.13	0.05	0.17	2.43
		Change	-0.01	-0.72	-0.74	-0.22	-0.01	-0.08	-1.04
		% change	-9.32	76.95	-67.81	-19.52	-24.00	-45.61	-43.00
	Feb	2022	0.84	0.96	1.26	1.66	0.05	0.14	3.66
2021		1.23	1.30	2.53	1.87	0.05	0.18	4.64	
Change		-0.39	-0.34	-1.27	-0.20	0.00	-0.04	-0.97	
% change		-31.66	-26.21	-50.02	-10.93	2.22	-20.39	-20.93	

Source: Indus River System Authority (IRSA)



Source: Indus River System Authority (IRSA)

Fertilizer Offtake

As per report of NFDC, the month of January 2022 started with opening inventory of 56 thousand tons of Urea. During January 2022, domestic Urea production was 565 thousand tons with total availability of 621 thousand tons. Urea offtake during January remained 598 thousand tons leaving behind closing balance of 27 thousand tons.

The opening inventory of DAP for January 2022 was 211 thousand tons. During January 2022 domestic production of DAP was 75 thousand tons. The total availability of DAP was 341 thousand tons. DAP offtake during January 2022 was 113 thousand tons leaving behind closing balance of 228 thousand tons.

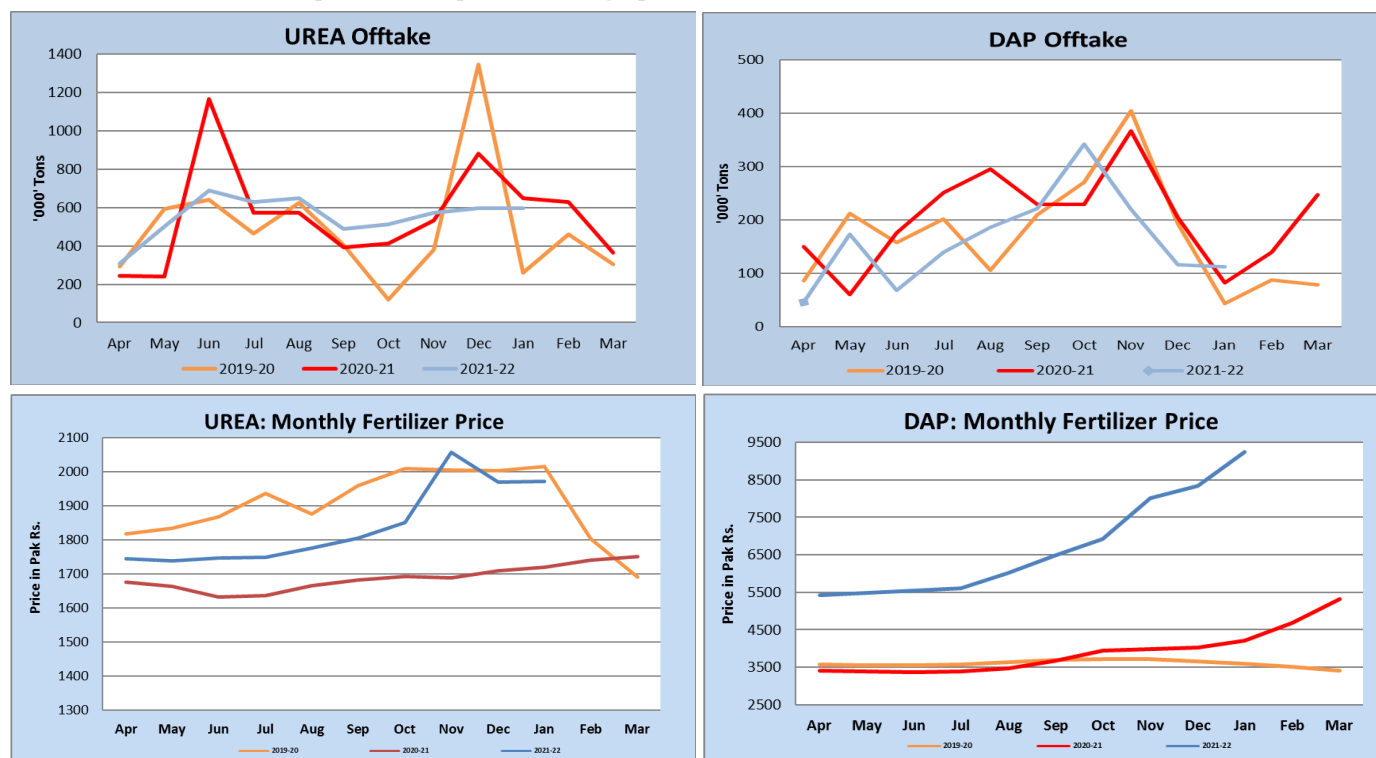
During January 2022, offtake of Nitrogen decreased by 10.5 while that of Phosphate and Potash increased by 6.4 and 16.4 percent, respectively as compared to same period of last year.

Product	Opening Inventory	Domestic Production	Imports	Total Availability	Offtake	Write On/Off	Closing Balance
000 Tons							
Urea	56	565	0	621	598	4	27
DAP	211	75	55	341	113	0	228

Month	Fertilizer Offtake Rabi 2021-22				Fertilizer Offtake Rabi 2020-21				% Change			
	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total
	(000 Tons)								Nitrogen	Phosphate	Potash	Total
Oct	356.0	196.9	10.1	563.0	255.6	123.5	7.3	386.4	39.3	59.5	37.3	45.7
Nov	338.9	126.6	7.6	473.1	345.5	191.2	4.8	541.6	-1.9	-33.8	56.6	-12.6
Dec	332.3	70.3	5.1	407.7	481.6	111.8	3.8	597.2	-31.0	-37.2	34.4	-31.7
Jan	328.1	65.9	6.1	400.2	366.8	62.0	5.3	434.0	-10.5	6.4	16.4	-7.8
Total	1355.4	459.7	28.9	1844.0	1449.4	488.5	21.3	1959.2	-6.5	-5.9	36.0	-5.9

Source: MRR.02/2022 NFDC

The fertilizer statistics and prices are depicted in the graphs below:



Source: MRR.02/2022 NFDC

زرعی سفارشات

(مارچ)

گندم:-

1- گندم کو دانے بننے اور بھرنے کے دوران پانی لگانا ضروری ہے۔ جو کہ عمومی طور پر بجائی کے 125 سے 130 دن بعد بنتا ہے اس لیے اس موقع پر گندم کو تیسرا پانی دیں۔ مارچ کے تیسرے ہفتے تک آبپاشی کا عمل مکمل کر لینا چاہیے۔ پانی کی کمی یا تاخیر دانہ چھوٹا رہ جانے کی وجہ سے پیداوار میں کمی کا باعث بنتی ہے۔

2- سست تیلہ آخر فروری سے آخر مارچ تک گندم کی فصل پر حملہ کرتا ہے۔ سست تیلہ کے تدارک کے لیے زرعی زہروں کا استعمال انسانی صحت، ماحول اور فائدہ مند کیڑوں کے لیے نقصان دہ ہے۔ اس لیے زرعی زہروں کے استعمال سے اجتناب کریں۔ بارش، ٹھنڈے پانی کا سپرے یا بجائی کے وقت گندم کے کھیت کے چاروں اطراف سروسوں کی ایک ایک قطار کاشت کرنے سے سست تیلہ پر قابو پایا جاسکتا ہے۔

3- زرعی اخراجات کو کم کرنے اور صحت مند بیج کے حصول کو یقینی بنانے کے لیے زمیندار حضرات کو چاہیے کہ وہ اپنے کھیت سے جڑی بوٹیوں، بیماری سے متاثرہ اور غیر اقسام کے پودوں کو نکال کر ایک ہی قسم کے پودوں سے منظور شدہ اقسام کا خالص بیج خود پیدا کریں۔

کماؤ:-

1- اچھے ٹکاس والی میرا یا بھاری میرا زمین کماؤ کی اچھی پیداوار کے لیے موزوں ہے۔
2- کماؤ کی کاشت کا وقت فروری سے وسط مارچ تک ہے تاخیر سے کاشت فصل کی پیداوار میں کمی کا باعث بنتی ہے۔
3- زمین کی تیاری کے بعد رجر کے ذریعے 8 سے 10 انچ گہری کھیلیاں 4 فٹ کے فاصلے پر بنائیں۔
4- صحت مند بیج ہی صحت مند فصل کا ضامن ہوتا ہے اس لیے بیماریوں سے پاک صحت مند بیج استعمال کریں۔ مونڈھی فصل کی بجائے لیری (یکسال) فصل سے بیج حاصل کریں۔

5- بیج پر سبز پتوں یا کھوری کا غلاف نہ ہو۔ بصورت دیگر دیمک کے حملے کا خطرہ بڑھ جاتا ہے۔ آنکھوں کو زخمی نہ ہونے دیں ورنہ بیج کا گاؤ متاثر ہوتا ہے۔
6- بروقت کاشت اور دیگر موزوں حالات کی موجودگی میں فی ایکڑ دو آنکھوں والے 25 تا 30 ہزار سے 100 تا 120 من وزن استعمال کریں۔ کاشت سے پہلے بیج کو پھپھوندی کش زہر کے محلول میں 3 تا 5 منٹ تک رہنے دیں تاکہ فصل بیماریوں سے محفوظ رہے۔
7- کماؤ کی اچھی پیداوار کے لیے علاقائی طور پر تجویز کردہ منظور شدہ اقسام کاشت کریں کیونکہ غیر منظور شدہ اور ممنوعہ اقسام کی کاشت نقصان دہ اور بیماریوں کے پھیلاؤ کا سبب بن سکتی ہے۔

8- زمین کی زرخیزی کو مد نظر رکھتے ہوئے کھادوں کا متناسب اور متوازن استعمال پیداوار کا کلیدی عنصر ہے۔ کمزور زمین میں 4 بوری یوریا، 3 بوری ڈی اے پی اور 2 پوٹاشیم سلفیٹ جبکہ زرخیز زمین میں 2.5 بوری یوریا، 1 بوری ڈی اے پی اور 1 بوری پوٹاشیم سلفیٹ کی سفارش کی جاتی ہے۔ مونڈھی فصل کے لیے 30 فیصد زیادہ کھاد ڈالنے کی ضرورت ہے۔

9- مونڈھی فصل میں کاشت کی اور موسمی اثرات کی وجہ سے مڈھ مر سکتے ہیں۔ اس لیے پودوں کی تعداد کو پورا کرنے کے لیے اسی قسم کے مڈھ لا کر نانے پر کرنا انتہائی ضروری ہے۔

10- فروری، مارچ کا موسم مونڈھی فصل کے لیے موزوں ہے اور زیادہ اچھا جاڑ بننے میں مدد دیتے ہیں۔ اس لیے مونڈھی فصل رکھنے کا ارادہ ہو تو فصل کی کٹائی فروری یا مارچ میں کریں۔ اور ایک انچ زمینی گہرائی سے کاٹیں تاکہ آنکھوں کو صحت مند ماحول میسر آ سکے۔

11- جڑی بوٹیوں نہ صرف پانی و خوراک میں حصہ دار بن کر پیداوار کم کرتی ہیں بلکہ بیماریوں اور کیڑوں کے پھیلاؤ کا سبب بنتی ہیں۔ کماؤ کی صحت مند پرورش اور جڑی بوٹیوں کی تلفی کے لیے گوڈی / تلاء انتہائی ضروری ہے۔ پہلی گوڈی اگاؤ مکمل ہونے پر اور دوسری ایک ماہ کے وقفہ سے کرنی چاہیے۔ قطاروں کے درمیان ہل چلا کر جبکہ پودوں کے درمیان کسولہ یا کھرپہ کی مدد سے جڑی بوٹیوں کی تلفی کریں۔

مکئی:-

1- 15 جنوری تا اختتام فروری کاشت کے لیے موزوں وقت ہے۔ جبکہ راولپنڈی ڈویژن (پہاڑی علاقوں کے علاوہ) میں 20 مارچ تک فصل کاشت کی جا سکتی ہے۔ اس لیے کاشت کار حضرات جلد از جلد مکئی کی کاشت مکمل کر لیں۔

2- اچھی پیداوار کے لیے سفارش کردہ ہائبرڈ اقسام کا 12 تا 15 کلو گرام (ڈرل کاشت کے لیے) یا 8 تا 10 کلو گرام (دوٹوں پر کاشت) فی ایکڑ بیج استعمال کریں۔

3- زمین کی زرخیزی کو مد نظر رکھتے ہوئے 2 تا 2.5 بوری ڈی اے پی اور 1 تا 1.5 بوری پوٹاشیم سلفیٹ فی ایکڑ بوقت کاشت استعمال کریں۔

4- ایسے بارانی علاقے جہاں کم بارش ہوتی ہو وہاں ایک بوری یوریا، ایک بوری ڈی اے پی اور آدھی بوری پوٹاشیم سلفیٹ استعمال کریں جبکہ زیادہ بارش والے بارانی علاقوں میں ڈیڑھ بوری یوریا، ڈیڑھ بوری ڈی اے پی اور ایک بوری پوٹاشیم سلفیٹ فی ایکڑ ڈالیں۔

5- پودوں کے درمیان مناسب فاصلہ پودوں کو نشوونما کے لیے صحت مند ماحول میسر کرتا ہے۔ اس لیے ڈرل سے کاشتہ فصل میں پودوں کا درمیانی فاصلہ

6 تا 7 انچ ہونا چاہیے۔ چھدرائی کے اس عمل کے دوران بیمار اور کمزور پودوں کو نکال کر فی ایکڑ پودوں کی تعداد 34 تا 40 ہزار ہونی چاہیے۔

6- کوئیل کی کبھی بہاریہ کبھی پر حملہ آور ہوتی ہے اس لیے اگاؤ کے ایک ماہ بعد مقامی محکمہ زراعت کے عملے سے مشورہ کر کے دانے دار زہروں کا انتخاب اور استعمال کریں۔

کپاس:-

1- اپریل سے پہلے کاشتہ کپاس گلابی سنڈی اور دیگر نقصان دہ کیڑوں اور بیماریوں کے پھیلاؤ کا سبب بنتی ہے۔ اس لیے اگیتی کپاس کی کاشت یکم اپریل کے بعد کی جائے۔



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