



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.

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CROP SITUATION: MAY 2021

Summary

By the end of May 2021, the satellite based Normalized Difference vegetation Index (NDVI) values at lowest ebb of curve show a transition of Rabi season to Kharif with harvesting of Rabi crops and sowing operations of Kharif crops. Generally, normal temperatures were observed in most parts of the country. 3-4 rain spells with normal to above normal precipitation were received in some parts of Punjab, Khyber Pakhtunkhwa, Gilgit-Baltistan and Azad Jammu & Kashmir. 1-2 rain spells with light to moderate rainfall were observed in Sindh and Balochistan.

Federal Committee on Agriculture in its meeting held on 08th April, 2021 fixed Kharif crops targets. Cotton crop production target of 10.504 million bales was fixed from an area of 2330.91 thousand hectares with an average yield of 766 kg per ha. Similarly rice crop production target of 8.200 million tons was fixed from an area of 3069.92 thousand hectares with an average yield of 2671 kg per ha. Sugarcane production target of 74.846 million tons was fixed from an area of 1181.91 thousand hectares with an

average yield of 63.32 tons per hectare.

Wheat harvesting operations were at peak. Using Satellite based Crop Monitoring System, SUPARCO estimated wheat production of 27.016 million tons from an area of 9.593 million hectares for Rabi season 2020-21. Salient features of wheat crop 2020-21 were: a) Increase in area sown b) Significant increase in Minimum Support Price of wheat c) Timely sowing of wheat crop due to early termination of Kharif crops particularly cotton d) Better irrigation water supply in areas of Indus Command, Khyber Pakhtunkhwa and Balochistan e) Shortage of irrigation water supply in some areas of Chenab – Mangla Command and Sindh during November to January f) Higher prices of DAP than last year g) Hailstorm / rains in Multan division during third week of March causing damage to wheat production on limited scale.

Cotton crop sowing activities have been in progress during the month in Punjab and Sindh after wheat harvest. As per reports of Pakistan Central Cotton Committee

CROPS SITUATION

(PCCC), the total area sown at National level upto 31st May, 2021, is 1.721 million hectares, approximately 17.3 percent less than the same period of last year. Punjab has achieved 78.3 percent of its targets with sowing of 1.261 million hectares of cotton. In Sindh, area sown is 0.460 million hectares resulting in achievement of 72.0 percent of the target.

As per final report of Pakistan Cotton Ginning Association (PCGA) on 3rd May 2021, cotton arrivals in ginning factories of Pakistan were 5645.967 thousand bales. During end of April 2020 data was not collected due to COVID-19 pandemic. Comparative statistics were available up to 18th March 2020. By the end 18th March 2021, Punjab and Sindh had observed a decreased arrival of 31.19 and 38.51 percent, respectively, as compared to last year. In local market, average ex-gin cotton price during May 2021 was higher by about 33.87 percent compared to May 2020. Approximate average ex-gin price during May 2021 was Rs. 12386.8 per 40 kg against Rs. 9252.7 during May 2020 showing an increase of Rs. 3134.2 per 40 kg.

Nursery sowing operations for Rice crop were in progress after 20th May particularly for IRRI varieties.

As per report of Indus River System Authority (IRSA) for May 2021, the irrigation water supply was 7.84 MAF against the last year's supply of 9.78 MAF, decreased by 19.88 percent. As compared to the same period of last year, the irrigation water supplies were better in Khyber Pakhtunkhwa whereas Punjab, Sindh and Balochistan observed short irrigation supplies.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in April 2021 was 850 thousand tons whereas total availability of DAP was 179 thousand tons. During April 2021, off take of Nitrogen and Potash increased by 10.5 and 37.1 percent respectively, as compared to the same period of last year. Offtake of Phosphate was decreased by 53.0 percent compared to same period of last year.



Normalized Difference Vegetation Index (NDVI) 31st May, 2021

Rabi 2020-21

Wheat

Pakistan achieved better wheat production this year mainly due to timely decision for increase in support price of wheat, less rains at the time of harvest and departmental efforts to improve food security in the country through enhanced wheat production. MNFS&R estimated final wheat production of 27.3 million against the requirement of around 29.0 million tons including strategic reserves of 1.0 million tons.

Federal Committee on Agriculture (FCA) in its meeting held on 22nd October, 2020 fixed wheat crop targets for 2020-21 with consensus of the provinces. Province wise wheat crop 2020-21 targets were as follows:

Wheat Targets 2020-21 fixed by FCA			
Province	Area (000 Ha)	Production (000 Tons)	Yield (kg/ha)
Punjab	6,560.0	20,000.0	3,049.0
Sindh	1,200	4,000.0	3,333.0
Khyber Pakhtunkhwa	900.0	1,700.0	1,889.0
Balochistan	550.0	1,300.0	2,360.0
Pakistan	9,160.0	27,000.0	10,631.0

Using Satellite based Crop Monitoring System, SUPARCO estimated wheat production of 27.016 million tons from an area of 9.593 million hectares for rabi season 2020-21.

Satellite based Wheat Crop Estimates (2020-21)			
Province	Area (000 Ha)	Production (000 Tons)	Yield (kg/ha)
Punjab	6,684.6	19,973.7	2,988.0
Sindh	1,748.7	4,853.1	2,775.0
Khyber Pakhtunkhwa	731.4	1,247.7	1,706
Balochistan	428.9	942.3	2,197.0
Pakistan	9,593.6	27,016.8	2,816.0

Key Factors for Wheat 2020-21

Positive Factors:

- Timely sowing of wheat crop due to early termination of Kharif crops particularly cotton.
- Better irrigation water supply in areas of Indus Command, Khyber Pakhtunkhwa and Balochistan.
- Increase in area sown under wheat crop.
- Significant increase in Minimum Support Price (MSP) of wheat.

Negative Factors:

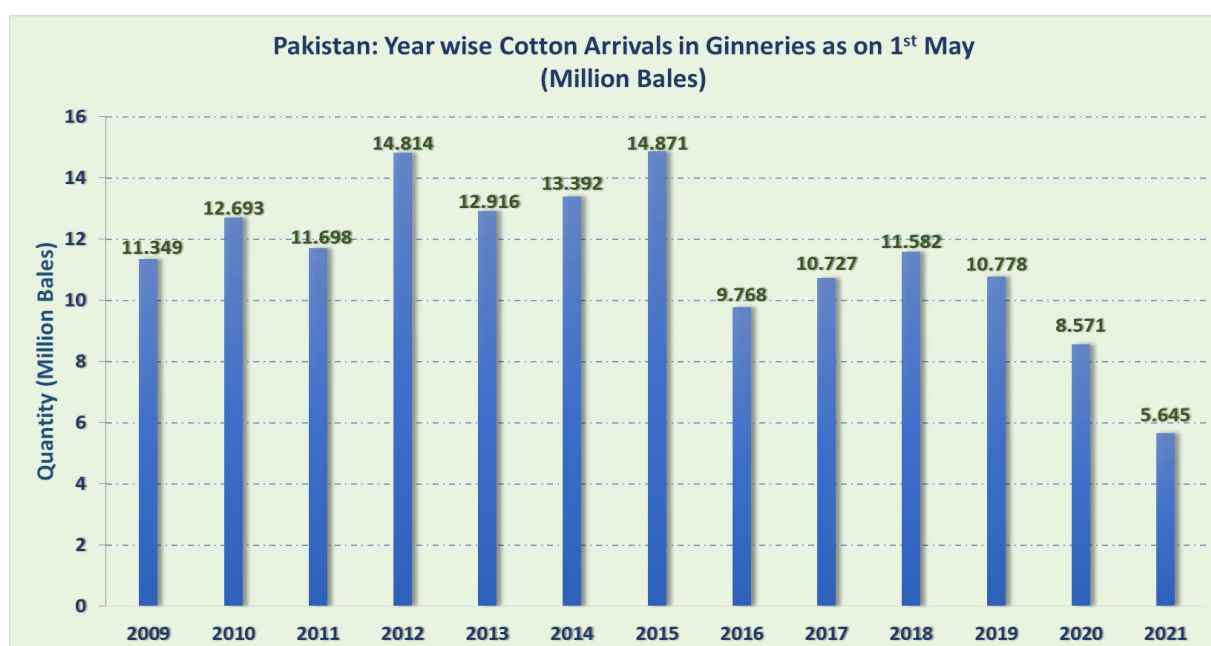
- Less rains during early crop season especially in rainfed areas.
- Shortage of irrigation water supply in some areas of Chenab – Mangla Command and Sindh during November to January.
- Decrease in DAP off-take during October-November.
- Higher prices of DAP than last year.
- Hailstorm / rains in Multan division during third week of March causing damage to wheat production on limited scale.

Kharif Crops 2021-22

Cotton 2021-22

Textile industry is the top most export industry of the country with cotton being the raw material. Government is making all out efforts to support export industries to sustain economy of the country. These efforts will only be fruitful if raw material is indigenous particularly the cotton for textile industry. Due to substandard inputs particularly the seed and pesticides, cotton production is badly affected in last few years which discouraged cotton growers not to sow cotton crop. Resultantly cotton area and production is gradually decreasing from last few years.

As per PCGA reports, 13 years comparison of cotton arrivals shows that Pakistan had maximum cotton arrivals during 2014-15 at the level of 14.871 million bales. During current year total cotton arrivals at national level up to 1st May 2021 were 5.645 million bales. It shows a decreased of 9.226 million bales from highest achieved cotton production over the period of last 13 years.



Government is making effort to increase cotton area for current year through mobilization of cotton growers and monitoring of inputs quality. But so far cotton sowing situation is not satisfactory in spite of attractive current phutti prices.

Proposed Targets of Cotton Crop and Sowing Situation During 2021-22

Federal Committee on Agriculture (FCA) in its meeting held on 08th April, 2021 fixed target of cotton crop production at 10.504 million bales with an area of 2330.91 thousand hectares. Province wise targets are as under;

Province	Area (000 ha)	Yield (kg/ha)	Production (Million Bales)
Punjab	1618.71	637.00	6.07
Sindh	640.00	1063.00	4.00
Khyber Pakhtunkhwa	2.20	322	0.004
Balochistan	70.00	1044	0.43
Pakistan	2330.91	766	10.50

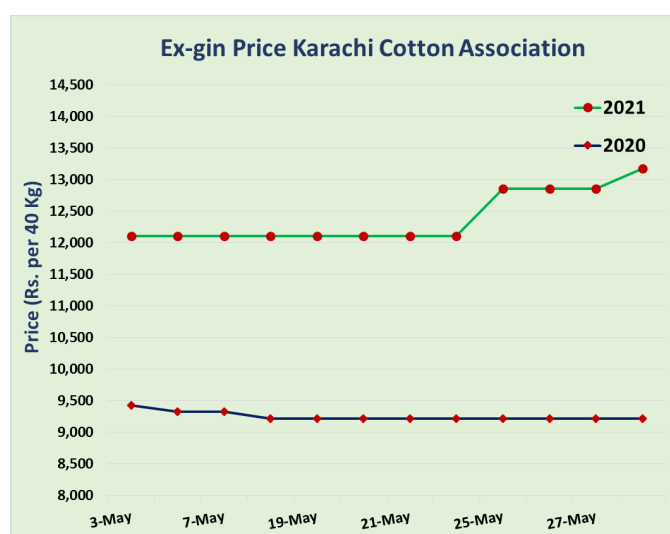
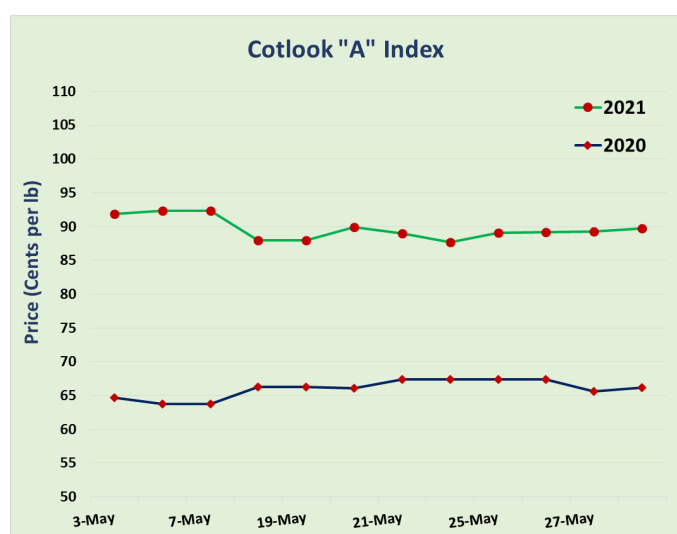
In the beginning of season water shortage may affect sowing of cotton. As per reports of Pakistan Central Cotton Committee (PCCC), upto 31st May, 2021, Punjab has achieved 78.3 percent of its targets with sowing of 1.261 million hectares of cotton. The area sown so far is approximately 14.0 percent less than the same period of last year. In Sindh, area sown is 0.460 million hectares resulting in achievement of 72.0 percent of the target. The total area sown at National level so far is approximately 17.3 percent less than the same period of last year.

Cotton 2020-21

As per final report of Pakistan Cotton Ginning Association (PCGA) on 3rd May 2021, cotton arrivals in ginning factories of Pakistan were 5645.967 thousand bales. During end of April 2020 data was not collected due to COVID-19 pandemic. Comparative statistics were available up to 18th March 2020. By the 18th March 2021, Punjab and Sindh had observed a decreased arrival of 31.19 and 38.51 percent, respectively, as compared to last year.

In the international market, average cotton price during May 2021 was 89.69 cents per lb as compared to average price of 66.00 cents per lb during May 2020, showing an increase of 23.69 cents per lb (up by 35.89 percent).

In local market, average ex-gin cotton price during May 2021 was higher by about 33.87 percent compared to May 2020. Approximate average ex-gin price during May 2021 was Rs. 12386.8 per 40 kg against Rs. 9252.7 during May 2020 showing an increase of Rs. 3134.2 per 40 kg.



Sugarcane

Federal Committee on Agriculture (FCA) in its meeting held on 08th April, 2021 fixed target of sugarcane crop production at 74.846 million tons with an area of 1181.91 000 hectares for Kharif 2021-22. Province wise targets are as under;

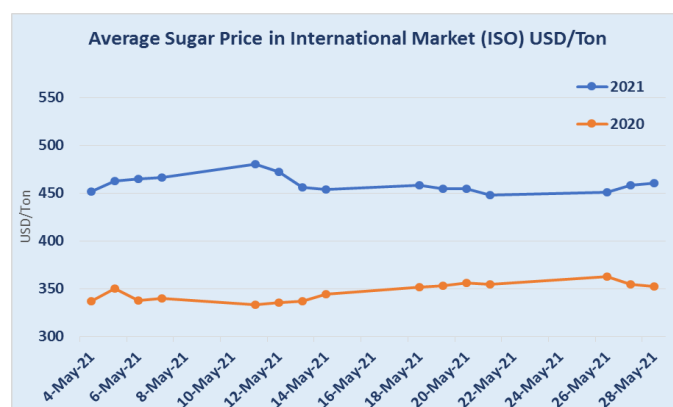
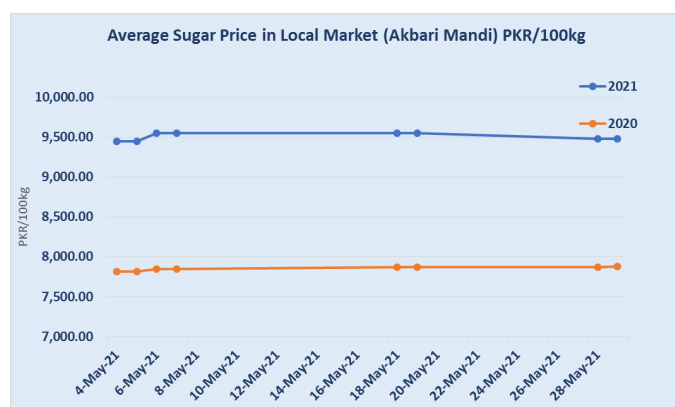
Province	Area (000 ha)	Yield (Tons/ha)	Production (Million Tons)
Punjab	760.79	65.72	50.00
Sindh	310.00	61.29	19.00
Khyber Pakhtunkhwa	110.12	52.63	5.79
Balochistan	1.00	50.00	50.00
Pakistan	1181.91	63.33	74.846

Sugar price in the international market (White Sugar Price Index) during May 2021 was approximately 32.08 percent higher as compared to May 2020. Average sugar price during May 2021 was 458.9 \$ per ton against the average sugar price of 347.4 \$ per ton during May 2020, showing average increase of 111.4 \$ per ton.

Sugar prices in the local market also remained higher during May 2021 as compared to May 2020. Average sugar price during May 2021 was around Rs. 9492.3 per 100 kg as against the average sugar price of Rs. 7852.0 per 100 kg showing an increase of around Rs. 1640.3 per 40 kg (approx. 20.9 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:

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Rice Crop 2021-22

Nursery sowing operations were in progress after 20th May particularly for IRRI varieties. In the start of current Kharif season (April-May), water availability is less than last year. This may increase the use of ground water increasing cost of production to meet crop water requirement.

Federal Committee on Agriculture (FCA) in its meeting held on 08th April, 2021 fixed rice crop target at 8.201 million tons with an area of 3069.92 000 ha for the year 2021-22. Detail of province wise rice crop is as under:

Province	Area (000 ha)	Yield (kg/ha)	Production (Million Tons)
Punjab	2023.39	2214.00	4.48
Sindh	800.00	3750.00	3.00
Khyber Pakhtunkhwa	66.53	2419.00	0.16
Balochistan	180.00	3111.00	0.56
Pakistan	3069.92	2671.00	8.20

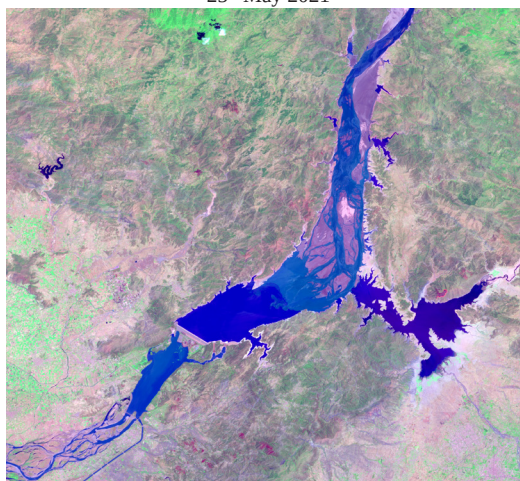
Water Supply Situation for Kharif 2021-22

Adequate water supplies are essential for agriculture production systems especially for crop production. Seasonal shortages and stressed surface water supplies affect the surface water dependent crops area sown and crop growth. In Pakistan, surface water supplies are major source for agriculture water requirement and is met by rainfall runoff and snow/glaciers melt through three major rivers namely Indus, Jhelum and Chenab. Inter-annual variations in rainfall and snowfall accumulation during winter season determine the downstream water availability. Pakistan has two major reservoirs for its water storage, Tarbela reservoir and Mangla reservoirs.

By 31st May 2021, water storage level in Tarbela and Mangla reservoirs was at level of 1405.09 and 1106.75 ft respectively. This situation is visually evident from satellite images. The comparison of satellite images is given below:

Tarbela Reservoir

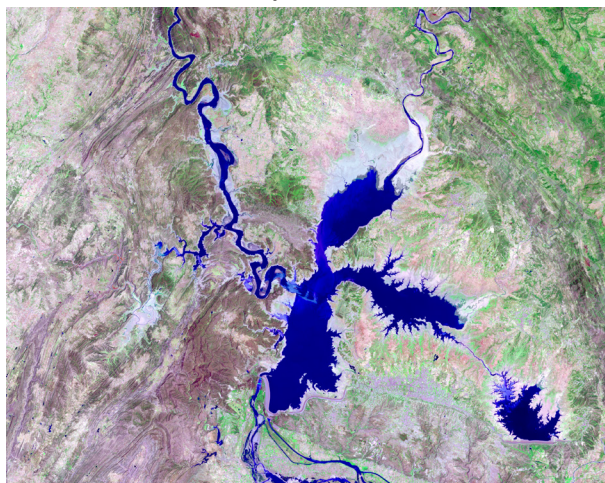
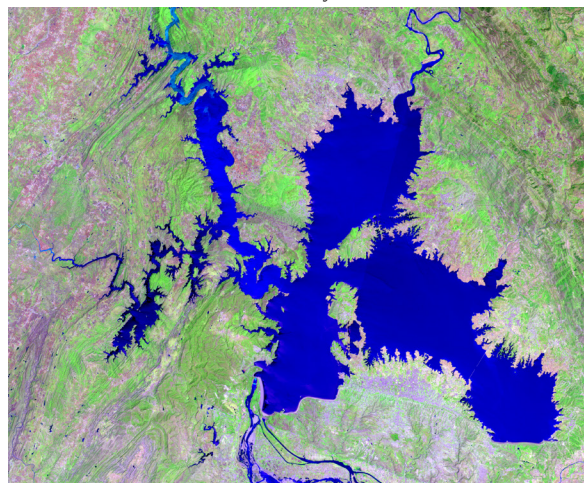
25th May 2021



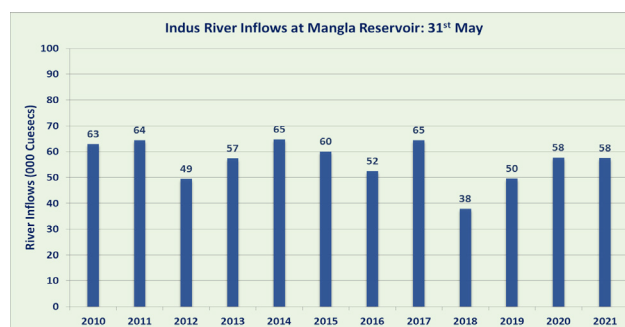
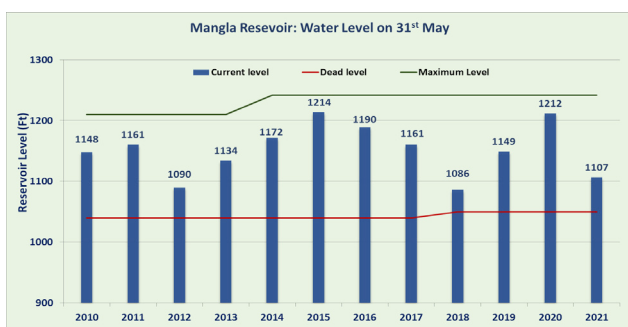
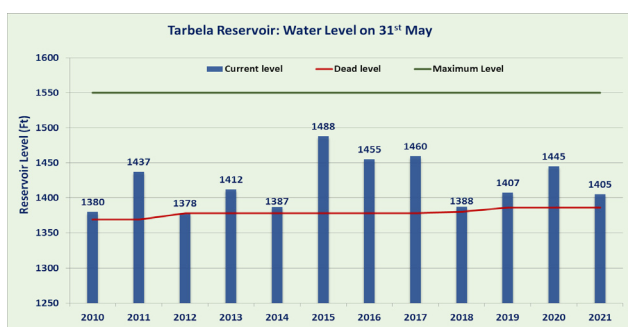
25th May 2020



Mangla Reservoir

25th May 202125th May 2020

The graphs below show the 12 years comparison of reservoir levels and water inflows at reservoir.



Source: WAPDA

Anticipated Water Withdrawal for Kharif 2021 (April-September 2021)

As per FCA meeting held on 8th April 2021, provisional data shows better water supplies are anticipated during Kharif season (April- September 2021) than last year. For Kharif 2021-22, total water withdrawals at level of 67.60 MAF are anticipated than water withdrawals of 65.11 MAF during Kharif 2020-21. Province wise withdrawals are given below

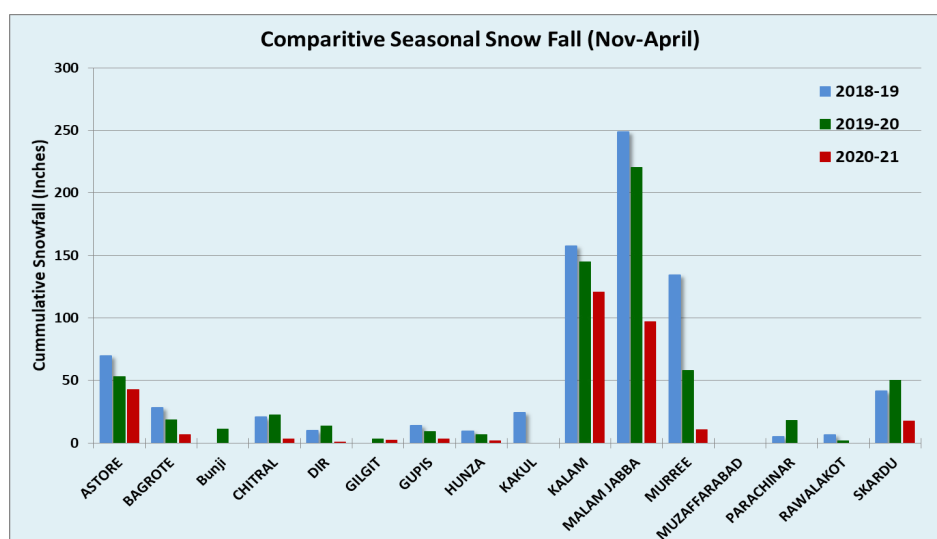
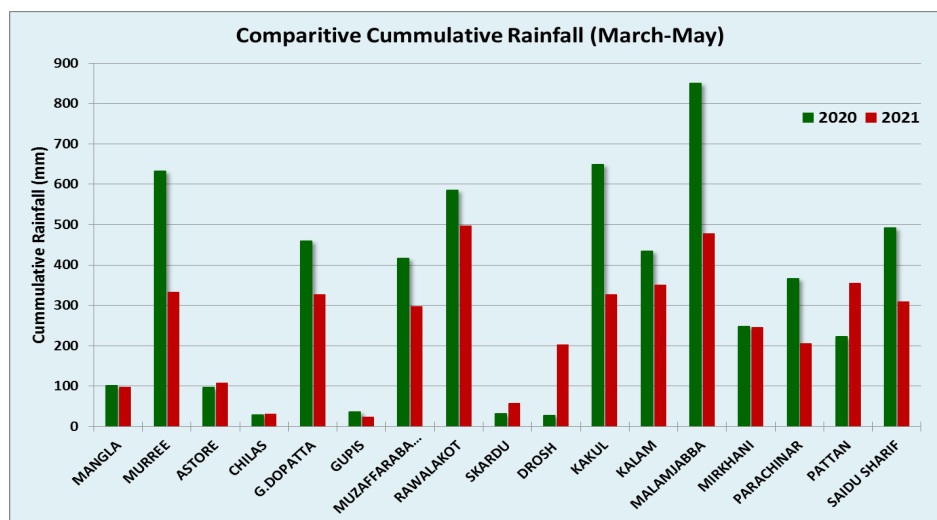
Province	Anticipated (MAF)	Last Year Actual (MAF)	10-year Average (Actual MAF)
Punjab	33.43	33.44	33.45
Sindh	30.48	28.80	28.78
Khyber Pakhtunkhwa	0.82	0.85	0.92
Balochistan	2.86	2.02	1.82
Total	67.60	65.11	64.97

IRSA, Working Paper FCA Meeting held on 8th April 2021

Actual Irrigation Water Supplies (April-May 2021)

As per report of IRSA, during Kharif 2021-22 (April-May 2021), total irrigation water supply was 12.48 MAF against the last year's supply of 14.99 MAF down by 2.51 MAF as compared to last year. This indicates a decrease in irrigation water supply of 16.74 percent compared to last year.

The possible factors for short water supplies during Kharif 2021-22 may be less rains and snowfall during this season. The graphs below show that less snowfall was accumulated during November 2020-April 2021 than same period of last two years. Similarly, less rain fall was received during March-April 2021 than last year.



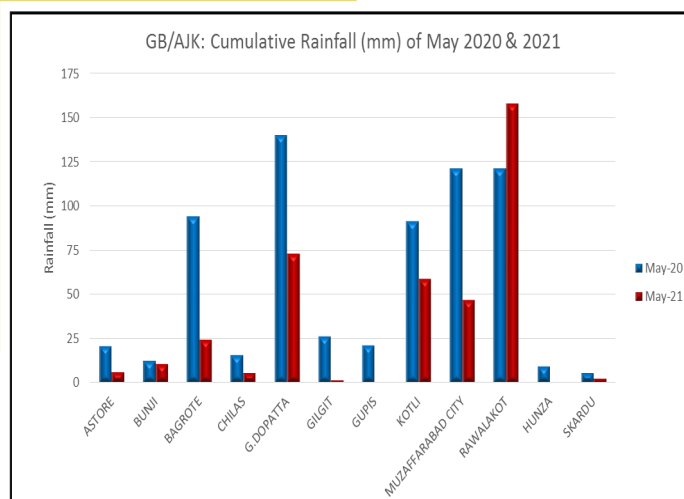
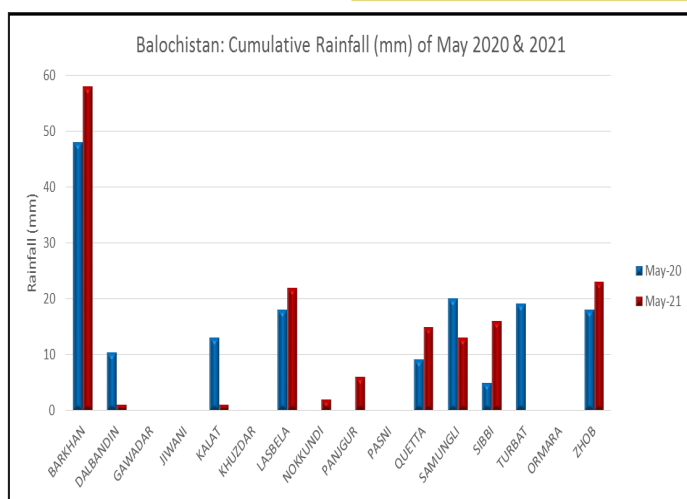
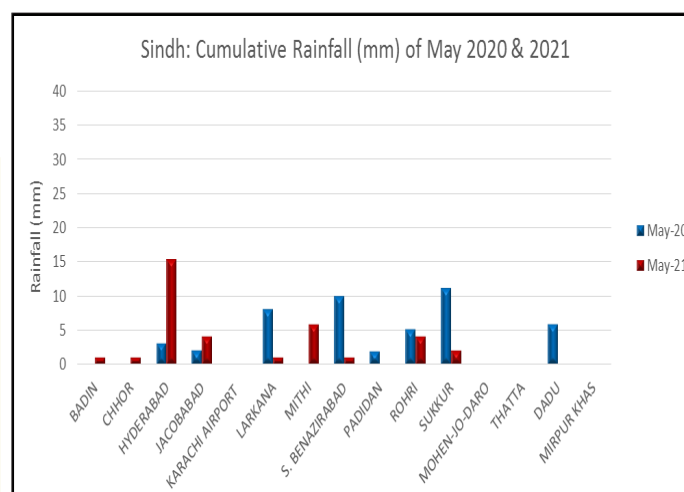
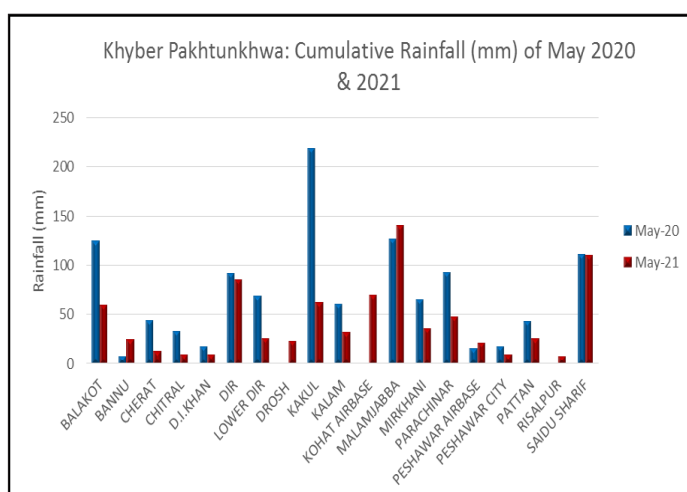
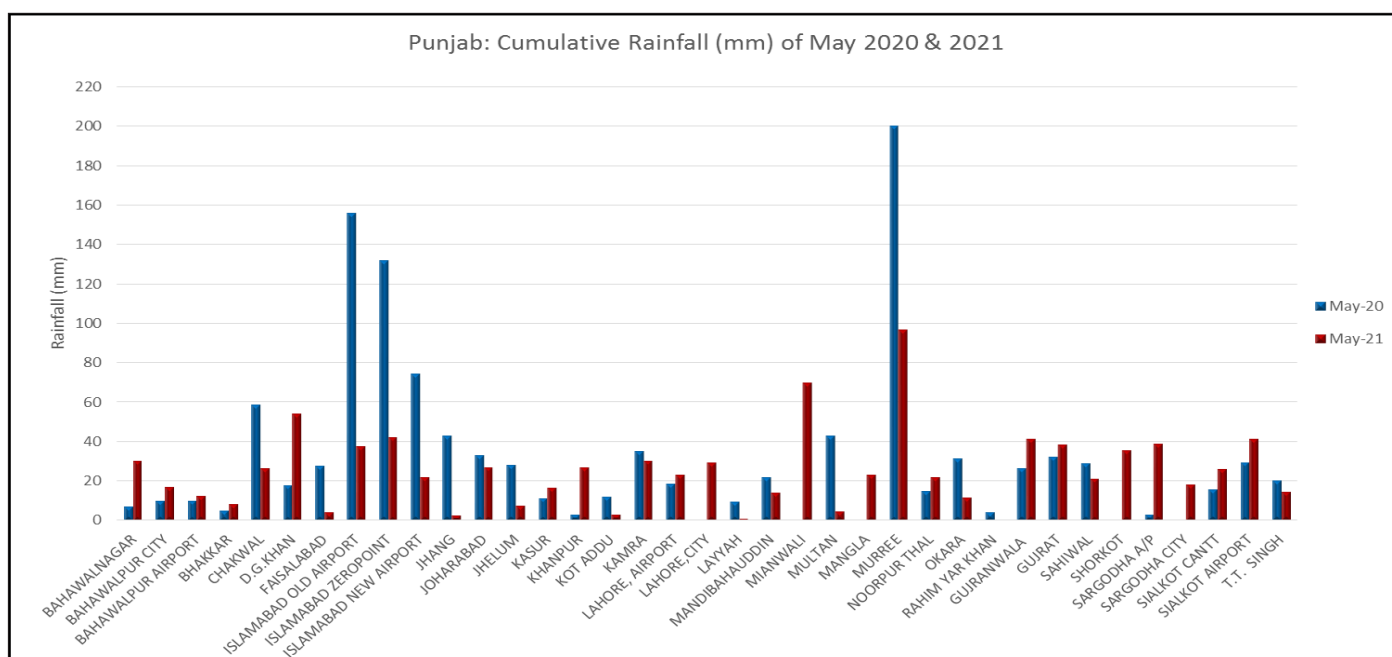
Source: PMD

Weather Future Outlook (April-June 2021)

As per long-term forecast of PMD, below normal rains are expected in most of the major agricultural plains during next three months. Particularly Pothohar and Upper Khyber Pakhtunkhwa may receive lesser rains. However, during the month of June 2021, above normal rains are projected over parts of Khyber Pakhtunkhwa, lower Sindh and Balochistan.

The maximum temperature may remain normal to above normal while minimum temperature is expected to remain above normal during this period. This may result in accelerated snowmelt in Northern areas and subsequently increase in river runoff in upper Indus region.

Monthly Rainfall (mm): May (2020 & 2021)



Maximum Temperature: May, 2021

The ranges of maximum temperature (°C) during May 2021 were as follows:



Minimum Temperature: May, 2021

The ranges of minimum temperature (°C) during May 2021 were as follows:

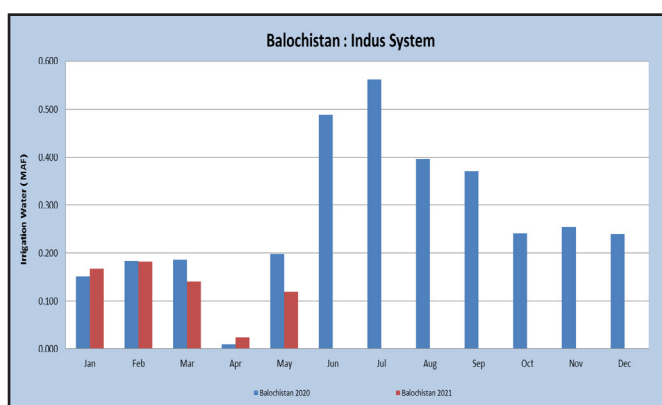
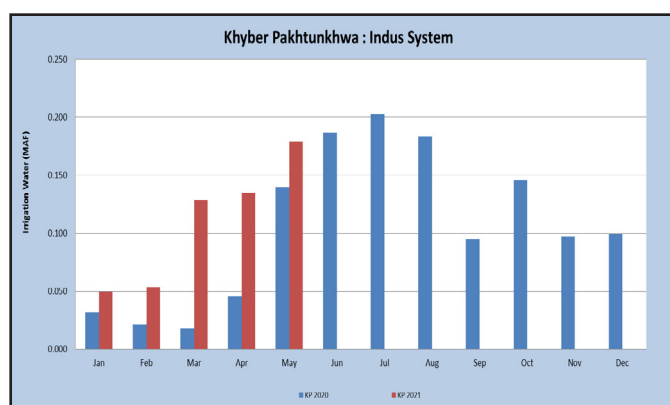
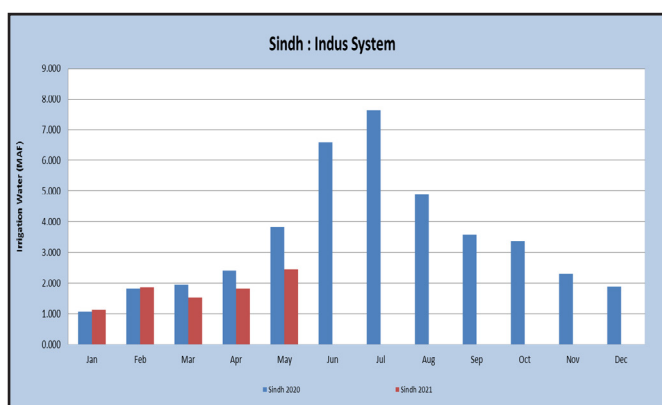
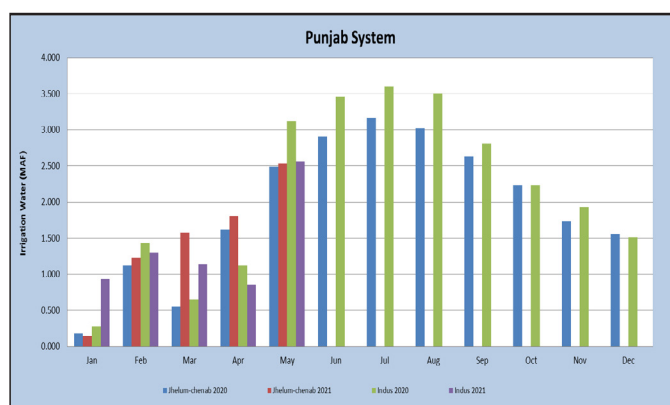


Irrigation Water Supply: May, 2021

The irrigation water supply during May 2021 was 7.84 MAF against the last year's supply of 9.78 MAF, lower by 1.94 MAF (19.88 percent). During May 2021, as compared to the same time period of last year, the supply in Punjab was 5.10 MAF (lower by 9.20 percent), Sindh was 2.44 MAF (lower by 36.22 percent), Khyber Pakhtunkhwa received 0.18 MAF (higher by 28.27 percent) while Balochistan received water supply of 0.20 MAF (lower by 40.12 percent).

Kharif 2021-22	Month	Year	Punjab			Sindh	Khyber Pakhtunkhwa	Balochistan	Total
			Jhelum-Chenab	Indus	Total				
			Million Acre Feet						
	April	2021	1.81	0.85	2.66	1.82	0.13	0.02	4.64
		2020	1.62	1.13	2.75	2.41	0.05	0.01	5.21
		Change	0.19	-0.27	-0.09	-0.59	0.09	0.01	-0.57
% change		11.64	-24.25	-3.10	-24.46	195.65	140.0	-10.96	
May	2021	2.53	2.56	5.10	2.44	0.18	0.12	7.84	
	2020	2.49	3.12	5.61	3.83	0.14	0.20	9.78	
	Change	0.04	-0.56	-0.52	-1.39	0.04	0.01	-1.94	
	% change	1.58	-17.83	-9.20	-36.22	28.27	-40.12	-19.88	

Source: Indus River System Authority (IRSA)



Fertilizer Offtake

As per report of NFDC, the month of April 2021 started with opening inventory of 298 thousand tons of Urea. During April 2021, domestic Urea production was 552 thousand tons with total availability of 850 thousand tons. Urea offtake during April remained 309 thousand tons leaving behind closing balance of 531 thousand tons.

The opening inventory of DAP for April 2021 was 55 thousand tons. During April 2021 domestic production of DAP was 71 thousand tons. The total availability of DAP was 179 thousand tons which also includes 53 thousand tons of imported supplies. DAP offtake during April 2021 was 46 thousand tons leaving behind closing balance of 133 thousand tons.

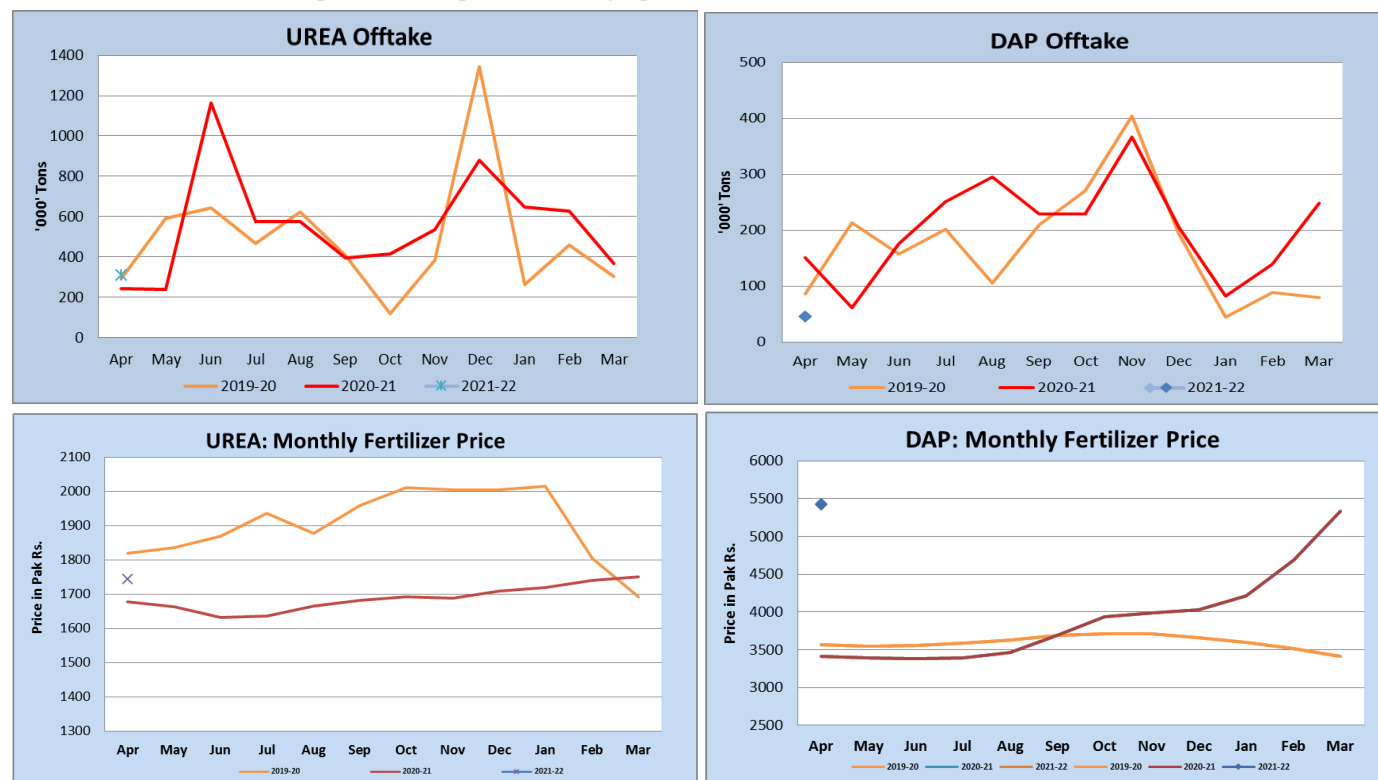
During April 2021, offtake of Nitrogen and Potash increased by 10.5 and 37.1 percent, respectively while offtake of Phosphate decreased by 53.0 percent.

Product	Opening Inventory	Domestic Production	Imports	Total Availability	Offtake	Write On/Off	Closing Balance
000 Tons							
Urea	298	552	0	850	309	-10	531
DAP	55	71	53	179	46	0	133

Month	Fertilizer Offtake Kharif 2021-22				Fertilizer Offtake Kharif 2020-21				% Change			
	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total	Nitrogen	Phosphate	Potash	Total
	(000 Tons)											
Apr	192.5	41.9	4.8	239.3	174.2	89.2	3.5	266.8	10.5	-53.0	37.1	-10.3
Total	192.5	41.9	4.8	239.3	174.2	89.2	3.5	266.8	10.5	-53.0	37.1	-10.3

Source: MRR.05/2021 NFDC

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



زرعی سفارشات (جون)

کپاس:-

- 1۔ پودوں میں مناسب فاصلہ، پودوں کی بہتر نشوونما اور کیڑوں کے بہتر تدارک میں مدد دیتا ہے۔ اس لیے اقسام کی خصوصیات اور وقت کاشت کو مد نظر رکھتے ہوئے پودوں کے درمیان 6 (تقریباً 35 ہزار پودے فی ایکڑ) سے لیکر 12 انچ (تقریباً 17 ہزار پودے فی ایکڑ) تک فاصلہ رکھیں۔ اور چھدرائی کا عمل کپاس کو کھاڈا ڈالنے سے پہلے کریں تاکہ پانی اور کھاڈے کے ضیاع کو روکا جاسکے۔
- 2۔ لائنوں میں کاشتہ فصل کو پہلا پانی 30 تا 35 دن بعد اور بقیہ پانی فصل کی ضرورت اور پانی کی کمی ظاہر ہونے پر مناسب وقفہ (12 تا 15 دن) پر لگائیں۔ اور آخری پانی 30 ستمبر تک لگائیں۔ جبکہ پٹریوں پر کاشتہ فصل کو پہلا پانی 3 تا 4 دن بعد جبکہ دوسرا، تیسرا اور چوتھا پانی 6 تا 9 دن کے وقفہ سے لگائیں۔ اس کے بعد فصل کی ضرورت اور پانی کی کمی ظاہر ہونے پر تقریباً دو ہفتہ کے وقفہ سے لگائیں اور آخری پانی 10 سے 15 اکتوبر تک لگادیں۔
- 3۔ اگیتی کپاس کو کھاڈوں کی ضرورت پچھیتی کاشت سے زیادہ ہوتی ہے۔ اسی طرح بیٹی اقسام کو روایتی اقسام سے زیادہ کھاڈ کی ضرورت ہوتی ہے۔ اس لیے فصل کی حالت، زمین کی زرخیزی اور موسمی حالات کو مد نظر رکھتے ہوئے کھاڈوں کا متوازن اور متناسب استعمال پیداوار میں اضافہ کا سبب ہوتا ہے۔
- 4۔ بیٹی اقسام میں نائٹروجنی کھاڈ 6 اقساط میں استعمال کریں۔ پہلی قسط یعنی 1/6 حصہ بوائی کے 30 سے 35 دن بعد جبکہ باقی اقساط ایک پانی چھوڑ کر اگلے پانی پر استعمال کریں۔ روایتی اقسام میں نائٹروجنی کھاڈ 2 حصوں میں استعمال کریں۔ یعنی 1/3 حصہ پہلے پانی کے ساتھ اور 2/3 حصہ دوسرے پانی کے ساتھ استعمال کریں۔
- 5۔ پھول ڈودے کے مرحلے پر کھاڈ اور پانی کی کمی نقصان کا سبب بن سکتی ہے۔ اس لیے پھول ڈودے آنے پر پانی اور کھاڈ کی فراہمی پر خصوصی توجہ دی جائے۔
- 6۔ پھل گرنے کی صورت میں نائٹروجنی کھاڈوں کے ساتھ ساتھ بوران اور زنک کا استعمال بذریعہ سپرے کریں۔
- 7۔ جڑی بوٹیوں کی تلفی پر خصوصی توجہ دیں کیونکہ یہ ہوا، پانی، خوراک اور روشنی میں حصہ دار بن کر پودوں کو کمزور کرتی ہیں۔ اس کے علاوہ جڑی بوٹیاں سفید مکھی، مٹی بگ اور لیف کرل وائرس کے میزبان پودے کے طور پر ان کے پھیلاؤ میں مددگار ہوتی ہیں۔
- 8۔ فصل کا باقاعدگی سے معائنہ کریں اور کیڑوں کی معاشی حد عبور ہونے پر فوراً محکمہ زراعت کے مشورے سے سپرے کریں۔ بیٹی اقسام میں گزشتہ کچھ عرصے سے گلابی سنڈی کی وجہ سے کپاس کی فصل کو نقصان مشاہدہ میں آرہا ہے۔ اس لیے زمیندار حضرات کو چاہیے کہ گلابی سنڈی کے تدارک کے لیے مناسب اقدامات کریں۔ اس مقصد کے لیے گلابی سنڈی کی افزائش نسل روکنے کے لیے 40 سے 45 دن کی کپاس میں گاسپ لیور کے جنسی چمندے بحساب 120 فی ایکڑ لگائیں۔

کماؤ:-

- 1- موسمی حالات کو مد نظر رکھتے ہوئے مناسب وقفہ (تقریباً 10 سے 12 دن) سے آبپاشی کا عمل جاری رکھیں۔ تاکہ پانی کی کمی سے پیداوار متاثر نہ ہو۔
- 2- پانی کی کمی کی صورت میں ایک قطار چھوڑ کر آبپاشی کریں۔ اور اگلے پانی پر چھوڑی ہوئی قطار میں پانی لگائیں۔
- 3- مقامی محکمہ زراعت کے عملہ کی مدد سے جڑ اور ستنے کی گڑوؤں کی تنقی کے لیے مناسب دانہ دار زہروں کا انتخاب کریں۔
- 4- دانہ دار زہر ڈالنے کے بعد کھیت کو لازمی پانی دیں۔
- 5- جون کے آخر تک بہاریہ کماؤ میں نائٹروجنی کھاد کی آخری قسط ڈال دیں۔ کھاد کے استعمال میں تاخیر اور برسات کی وجہ سے فصل گرنے کا اندیشہ ہوتا ہے جو کہ پیداوار میں کمی کا باعث بنتا ہے۔

دھان:-

- 1- صحت مند اور بیماریوں سے پاک بیج استعمال کریں۔ 80% گاؤں کی صلاحیت کے ساتھ طریقہ کار اور اقسام کے لحاظ سے شرح بیج کچھ یوں رکھیں۔

نمبر شمار	دھان کی اقسام	طریقہ کاشت	شرح بیج کلو گرام فی ایکڑ
1	اری یا موٹی اقسام	ترياکدو کا طریقہ	6-7
		خشک طریقہ	8-10
		راب کا طریقہ	12-15
2	باستی اقسام	ترياکدو کا طریقہ	4.5-5
		خشک طریقہ	6-7
		راب کا طریقہ	10-12

- 2- دھان کی منظور شدہ اور علاقے کے لیے موزوں اقسام کاشت کریں جبکہ ممنوعہ اقسام 386، مالٹا اور سپرفائن وغیرہ کی کاشت نہ کریں کیونکہ ان اقسام کا چاول انتہائی ناقص معیار کا ہوتا ہے اور عالمی منڈی میں باستی کی کم قیمت کا باعث بنتا ہے۔
- 3- بیج سے پھیلنے والی بیماریوں سے بچاؤ کے لیے بیج کو پھپھوندی کش زہر بحساب 2 سے 3 گرام فی کلو گرام ضرور لگائیں تاکہ فصل محفوظ رہے۔
- 4- دھان کی فصل میں دوبارہ زہر پاشی ضروری ہے۔ پہلا آٹھ سے دس دن کی پنیری پر دھوڑے یا سپرے کی شکل میں اور پندرہ سے بیس دن بعد دانے دار زہروں کی صورت میں دیں۔ تاکہ فصل گڑوؤں اور دیگر کیڑوں سے محفوظ اور صحت مند رہے۔
- 5- کمزور پنیری کی صورت میں 1/4 کلو گرام فی مرلہ کے حساب سے یوریا کا استعمال منقہ سے دس دن پہلے کریں۔
- 6- منقہ کے وقت پنیری کی عمر 25 سے 35 دن ہونی چاہیے۔
- 7- تھور سے متاثرہ علاقوں میں کلر کے خلاف قوت مدافعت رکھنے والی اقسام کے ایس 282، باستی 385 اور شاہین باستی استعمال کریں۔
- 8- پنیری اکھاڑنے سے ایک یا دو دن پہلے پانی لگائیں تاکہ منقہ کے دوران پودے کی جڑوں کو نقصان نہ ہو۔
- 9- پودوں اور قطاروں کے درمیان 9 انچ کا فاصلہ رکھتے ہوئے پودوں کی تعداد فی ایکڑ 80 ہزار ہونی چاہیے۔ پودوں کی تعداد میں کمی پیداوار کو متاثر کرتی ہے۔



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