

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: DECEMBER 2020

Summary

By the end of December 2020, increasing values of satellite based Normalized Difference vegetation Index (NDVI) manifested the emergence and active growth of early Rabi crops. Generally, below normal night temperatures were observed in most parts of the country in second half of the month. Light to moderate precipitation was received in some parts of Punjab, Khyber Pakhtunkhwa, Gilgit-Baltistan and Azad Jammu & Kashmir. Generally dry weather was observed in Sindh and Balochistan.

Wheat sowing has been completed during December across the country. In rainfed areas, wheat crop condition is better than last year due to timely and effective rain spells. In irrigated areas of Pakistan, wheat condition is generally satisfactory. Shortage in irrigation water supplies, however, may increase farmers' dependency on sub surface water thereby increasing cost of production.

As per report of Pakistan Cotton Ginning Association (PCGA) on 1st January 2020, cotton arrivals in ginning factories of

Pakistan were 5370.55 thousand bales showing a decrease of 2768.93 thousand bales (34.02 percent) as compared to the same period of last year. At the end of December 2020, Punjab and Sindh had observed a decreased arrival of 30.58 and 38.71 percent, respectively, as compared to last year. In local market, average ex-gin cotton price during December 2020 was higher by about 9.2 percent compared to December 2019. Approximate average ex-gin price during December 2020 was Rs. 10410 per 40 kg against Rs. 9445 during December 2019 showing an increase of Rs. 946 per 40 kg.

Harvesting of rice in the country has almost been completed. Rice crop during 2020-21 was generally satisfactory with no serious issues.

Sugarcane crop harvesting has got momentum during December in almost all parts of the country due to amplified sugar mills operations. Increased sugarcane support prices by provincial governments (Punjab @ Rs. 200 and Sindh @ Rs. 202 per 40 kg) may result in better farmgate

CROPS SITUATION

returns, thereby encouraging farmers to grow sugarcane crop.

As per report of Indus River System Authority (IRSA) for December 2020, the irrigation water supply was 5.29 MAF against the last year's supply of 5.43 MAF, down by 2.50 percent. As compared to the same period of last year, the irrigation water supplies in Punjab and Sindh were lower by 2.01 and 4.08 percent, respectively. Khyber Pakhtunkhwa and Balochistan, however, received increased irrigation water supply by 5.70 and 0.84 percent, respectively.

As per report of National Fertilizer Development Centre (NFDC), total availability of Urea in November 2020 was 1187 thousand tons whereas total availability of DAP was 465 thousand tons. During November 2020, off take of Nitrogen and Potash was increased by 28.2 and 23.0 percent, respectively, as compared to the same period of last year. Phosphate offtake, however, was decreased by 5.3 percent as compared to the same period of last year.



Normalized Difference Vegetation Index (NDVI) 30th December, 2020

Rabi 2020-21

Wheat

Wheat sowing has been completed during December across the country. In rainfed areas, wheat crop condition is better than last year due to timely and effective rain spells. In irrigated areas of Pakistan, wheat condition is generally satisfactory. Shortage in irrigation water supplies, however, may increase farmers' dependency on sub surface water thereby increasing cost of production

Prospects of wheat 2020-21 looks much promising this year due to; a) significant increase in support price of wheat from last year b) timely sowing of wheat due to early termination of Kharif crops particularly cotton c) favorable weather conditions d) higher targets to meet food requirements of the country.

Federal cabinet in its meeting held on 10th November, 2020 has fixed wheat support price of Rs. 1650 per 40 kg this year. This showed an increase of more than 20 percent from the last year support price of Rs. 1365 per 40 kg. This increase in support price will increase growers' net margins and help them to have better crop husbandry measures.

This year wheat area and production targets have been increased to meet country's food requirement during the year 2020-21. 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 are as follows:

| Wheat Targets 2020-21 fixed by FCA | | | |
|------------------------------------|----------------|---------------------|-----------------|
| Province | Area (000 Ha) | Production (000 Mt) | 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 |



Kharif Crops 2020-21

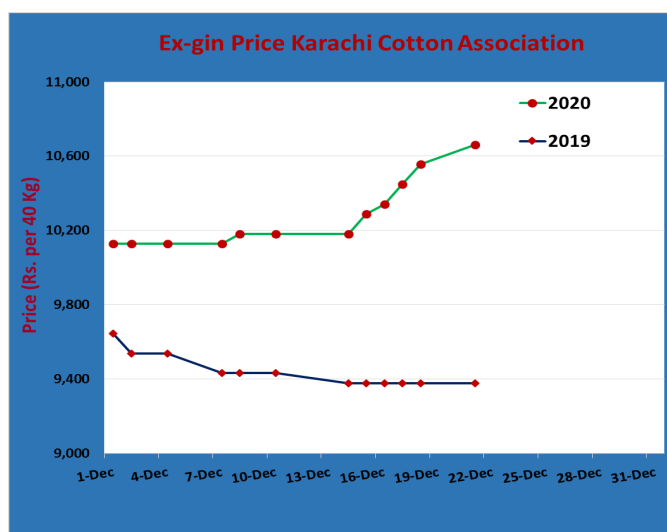
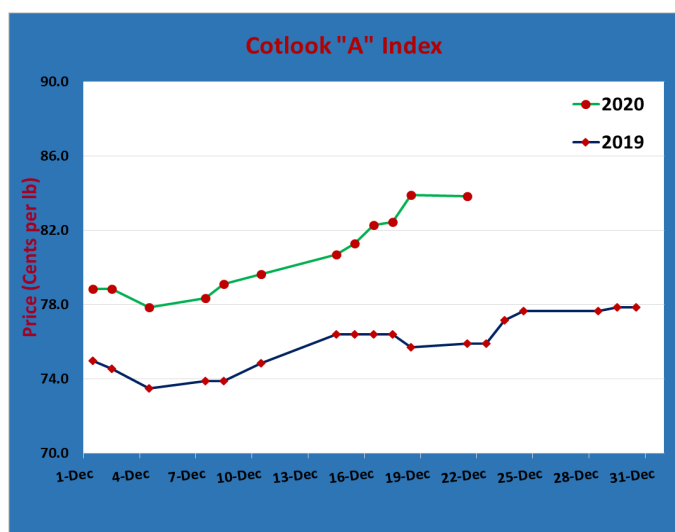
Cotton

Cotton crop was at terminal stage with its last picking in some limited areas at the end of November. This year the cotton crop size remained significantly lower mainly due to; a) decrease in area sown, b) low quality cotton seed c) unfavorable weather conditions d) higher insect pest infestation particularly of Pink Bollworm and e) decrease in farmers' net margins owing to higher cost of production.

As per report of Pakistan Cotton Ginning Association (PCGA) on 1st January 2020, cotton arrivals in ginning factories of Pakistan were 5370.55 thousand bales showing a decrease of 2768.93 thousand bales (34.02 percent) as compared to the same period of last year. At the end of December 2020, Punjab and Sindh had observed a decreased arrival of 30.58 and 38.71 percent, respectively, as compared to last year.

| Cotton Arrivals on 1 st January 2020 | | | | |
|---|---------|---------|------------|---------|
| Province | 2020 | 2019 | Difference | Percent |
| | Bales | | | |
| Punjab | 3258437 | 4693653 | -1435216 | -30.58 |
| Sindh | 2112116 | 3445838 | -1333722 | -38.71 |
| Total | 5370553 | 8139491 | -2768938 | -34.02 |

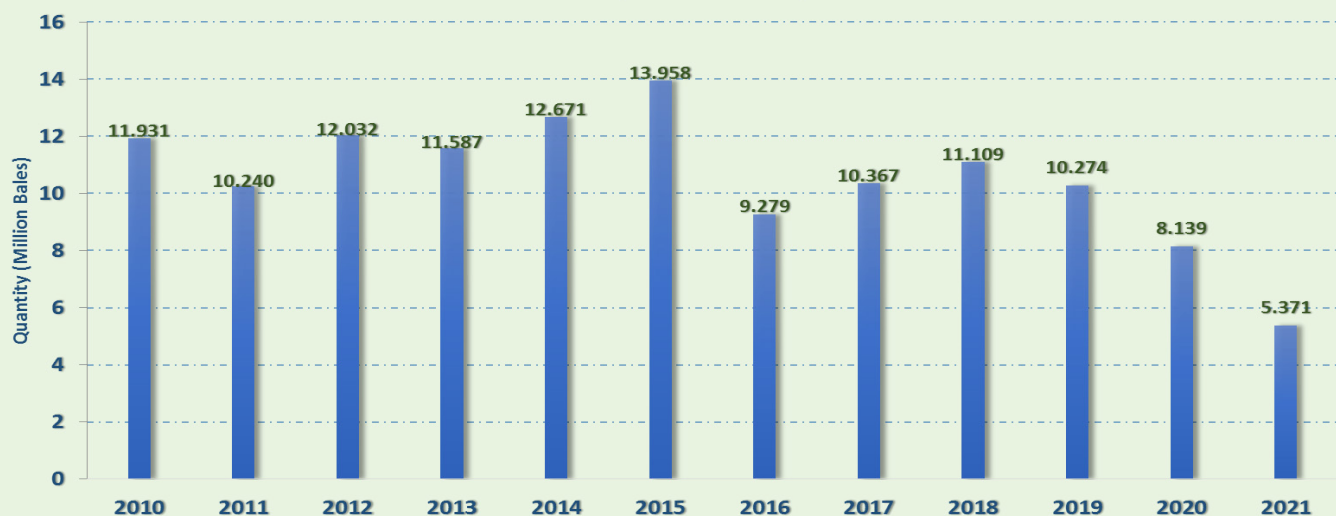
In the international market, average cotton price during December 2020 was 81.20 cents per lb as compared to average price of 75.94 cents per lb during December 2019, showing an increase of 5.26 cents per lb (up by 6.47 percent). In local market, average ex-gin cotton price during December 2020 was higher by about 9.2 percent compared to December 2019. Approximate average ex-gin price during December 2020 was Rs. 10410 per 40 kg against Rs. 9445 during December 2019 showing an increase of Rs. 946 per 40 kg.



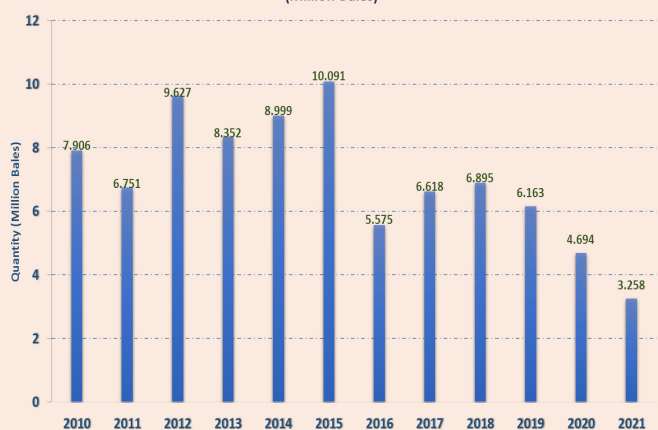
As per PCGA reports of 1st January, 12 years comparison of cotton arrivals shows that Pakistan had maximum cotton arrivals during 2014-15 at the level of 13.958 million bales. During current year total cotton arrivals at national level up to 31st December 2020 were 5.371. It shows a decreased of 8.587 million bales over the period of last 12 years.

Punjab province had the maximum arrival of 10.091 million bales during the year 2014-15 while the current year arrivals are 3.258 million bales. Sindh province had the maximum arrival of 4.213 million bales during the year 2017-18 and the current year arrivals are 2.112 million bales. This situation necessitates immediate measures for the revival of cotton crop in the country.

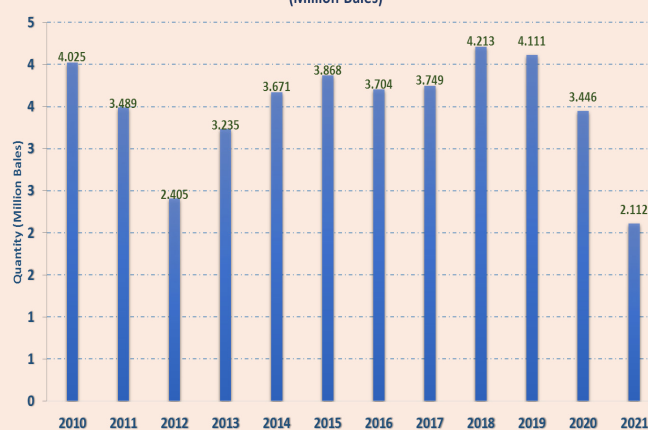
**Pakistan: Year wise Cotton Arrivals in Ginneries as on 1st January
(Million Bales)**



**Punjab: Year wise Cotton Arrivals in Ginneries as on 1st January
(Million Bales)**



**Sindh: Year wise Cotton Arrivals in Ginneries as on 1st January
(Million Bales)**



Sugarcane

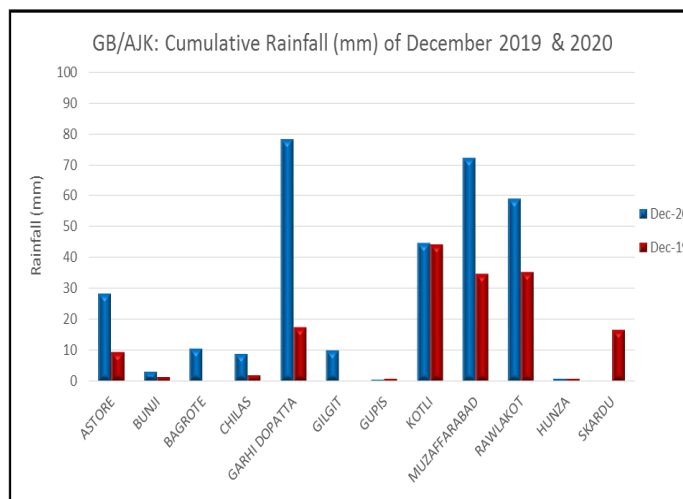
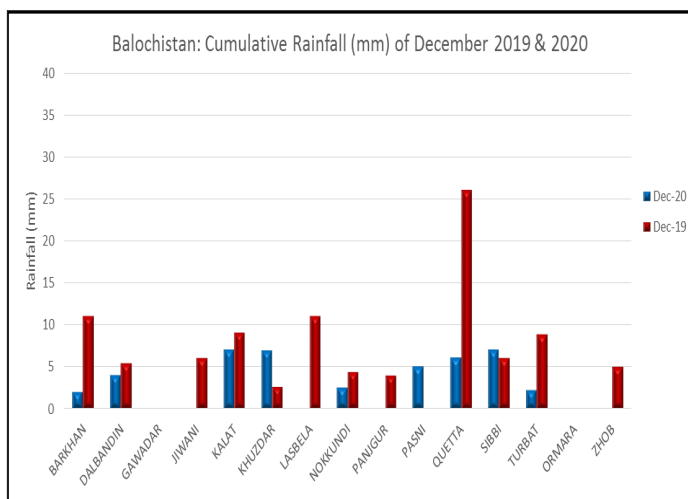
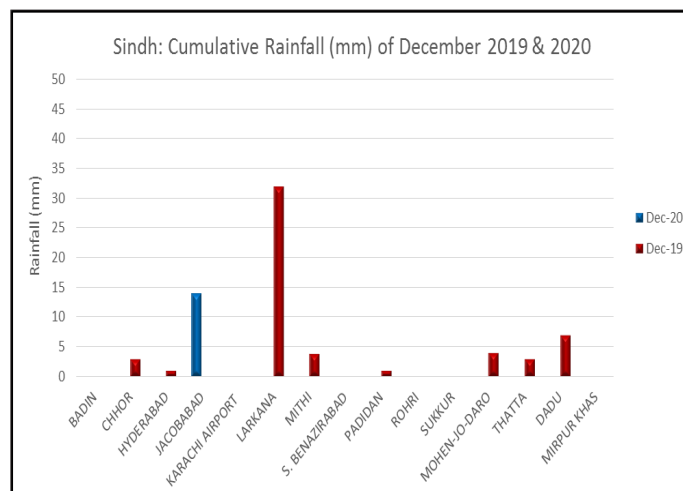
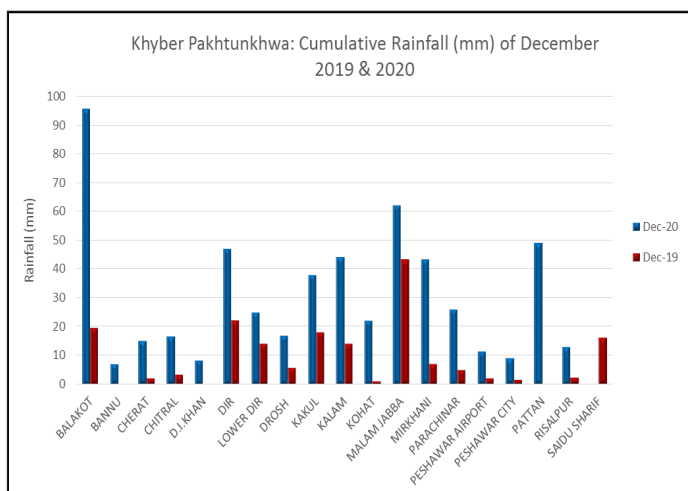
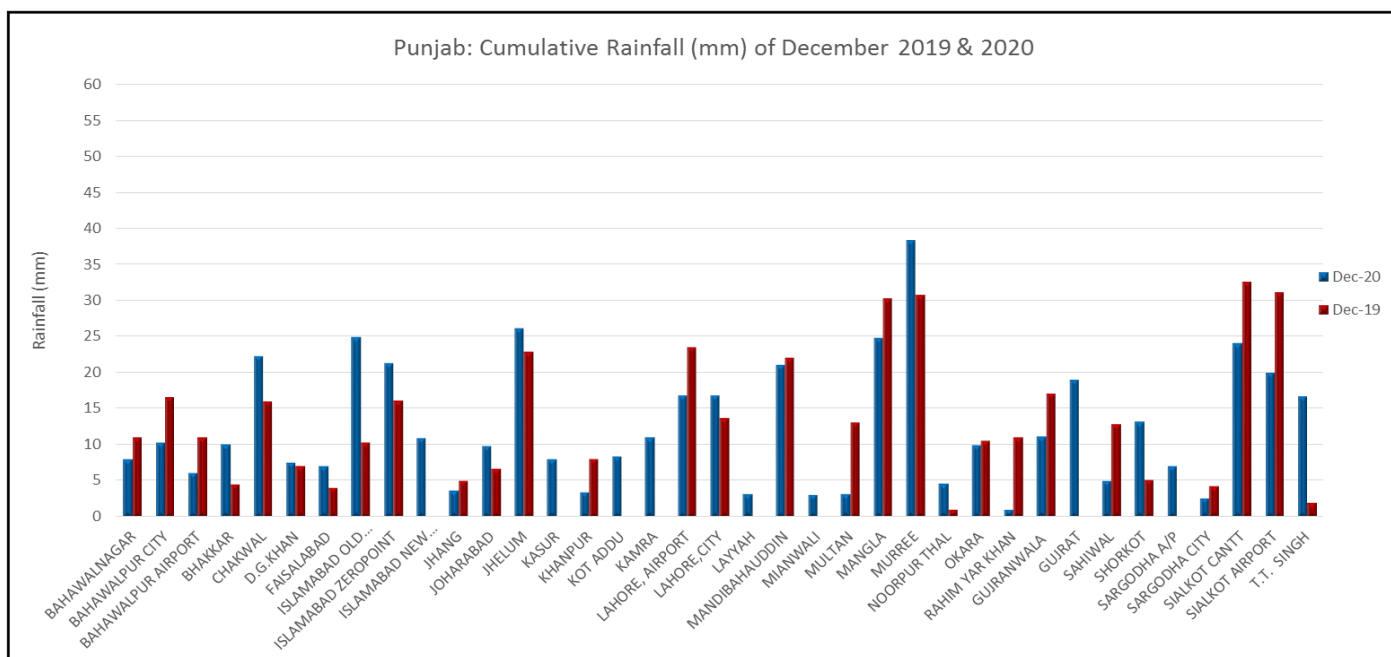
Sugarcane crop harvesting has got momentum during December in almost all parts of the country due to amplified sugar mills operations. Increase in sugarcane support prices by provincial governments (Punjab @ Rs. 200 and Sindh @ Rs. 202 per 40 kg) may result in better farmgate returns, thereby encouraging farmers to grow sugarcane crop.

Rice

Rice harvesting in the country has been completed. Rice crop during 2020-21 was generally satisfactory with no serious issues. Rice exports during December 2020 shown an increase of 12.19 percent in quantity and 21.95 percent in earned foreign exchange from December 2019.

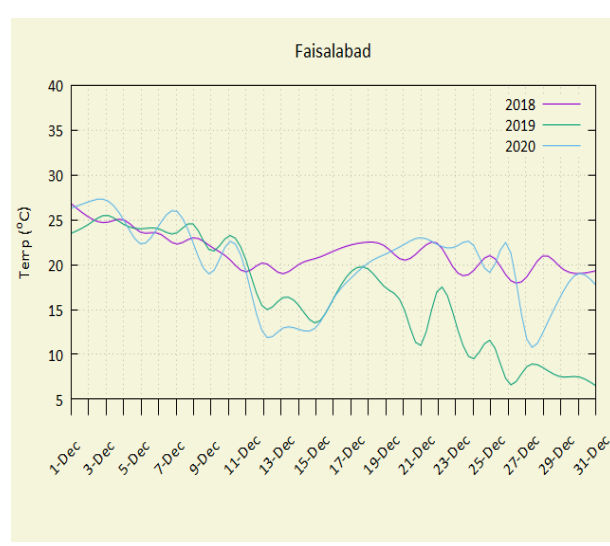
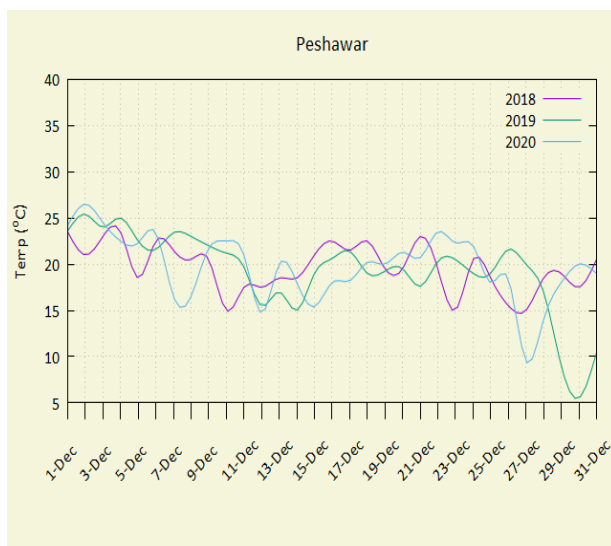
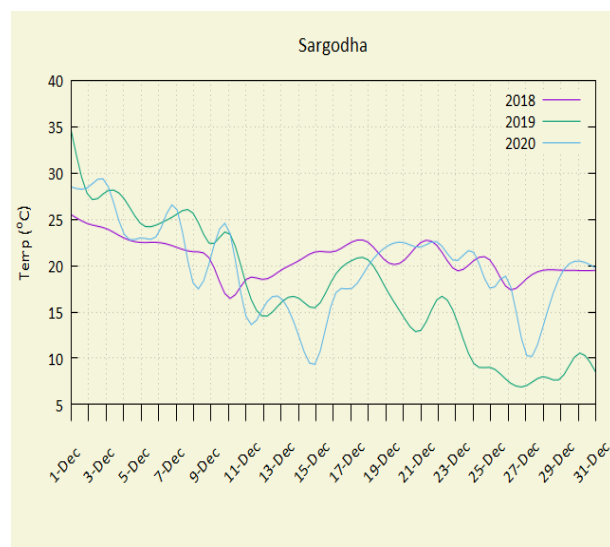
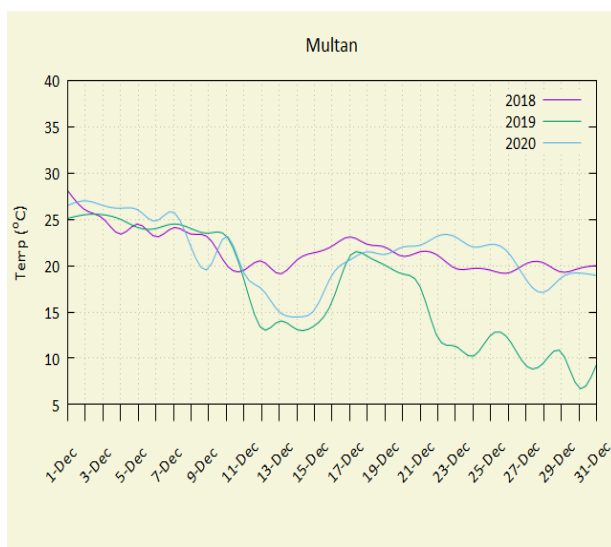
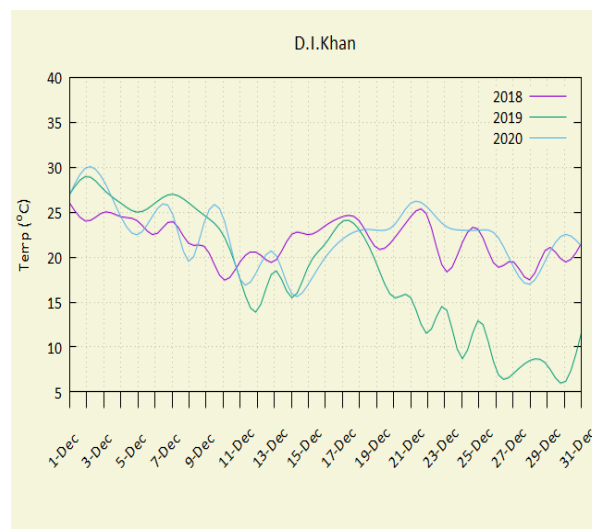
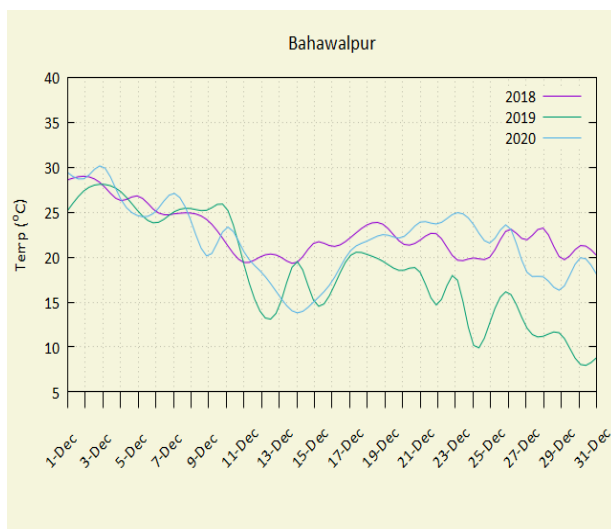
| Pakistan Rice Export Statistics: Quantity and Economic Value | | | | | | |
|--|---------------|--------|----------|----------------------------|--------|----------|
| Item | Quantity (MT) | | | Value (Pak Rupees Million) | | |
| | Dec-20 | Dec-19 | % Change | Dec-20 | Dec-19 | % Change |
| Basmati | 63449 | 84078 | -24.54 | 10596 | 10154 | 4.35 |
| Others | 396265 | 325679 | 21.67 | 26658 | 20396 | 30.71 |
| Total Rice | 459714 | 409757 | 12.19 | 37254 | 30548 | 21.95 |

Monthly Rainfall (mm): December (2019 & 2020)



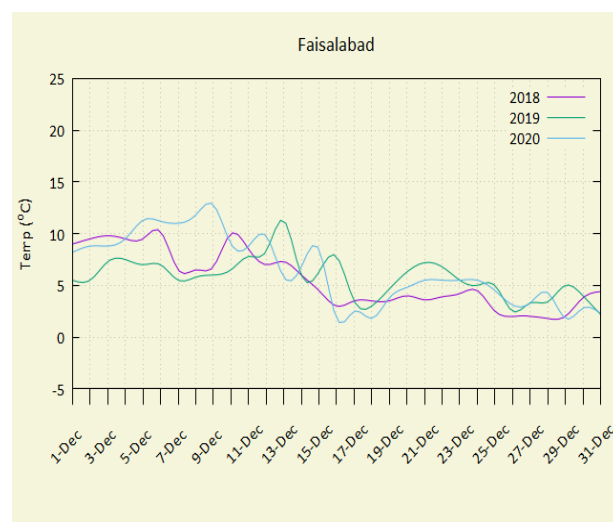
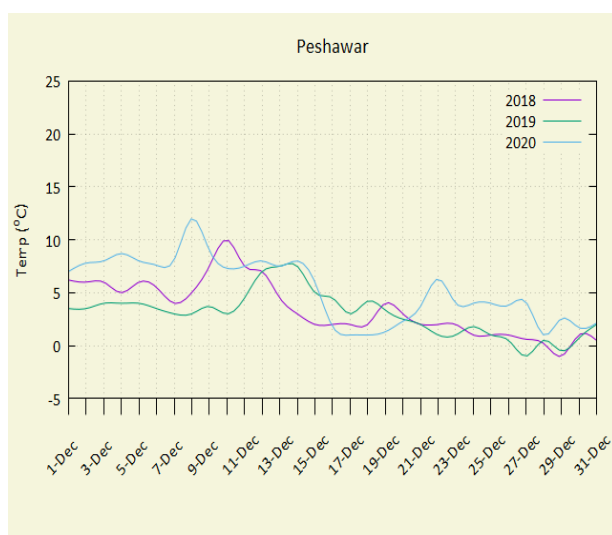
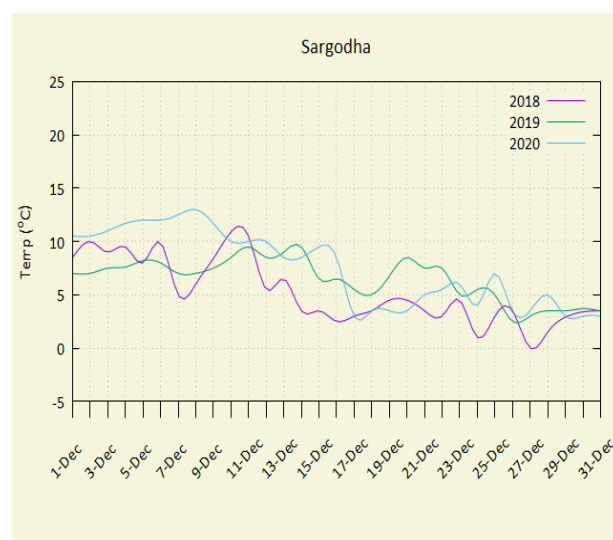
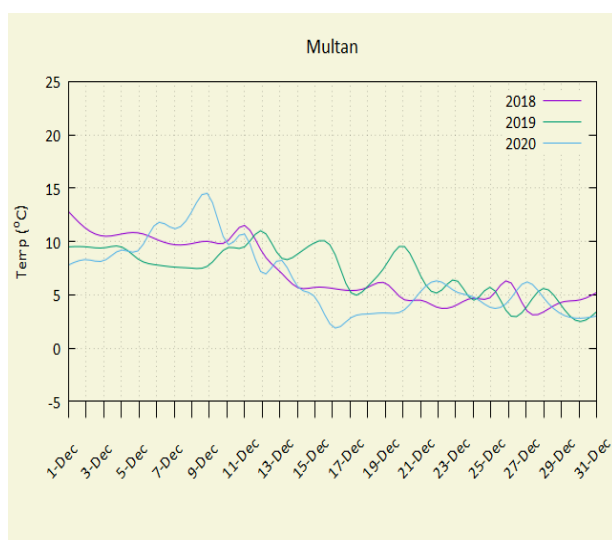
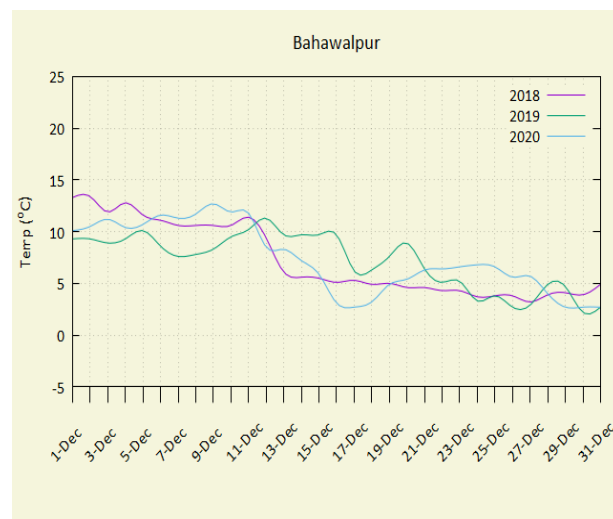
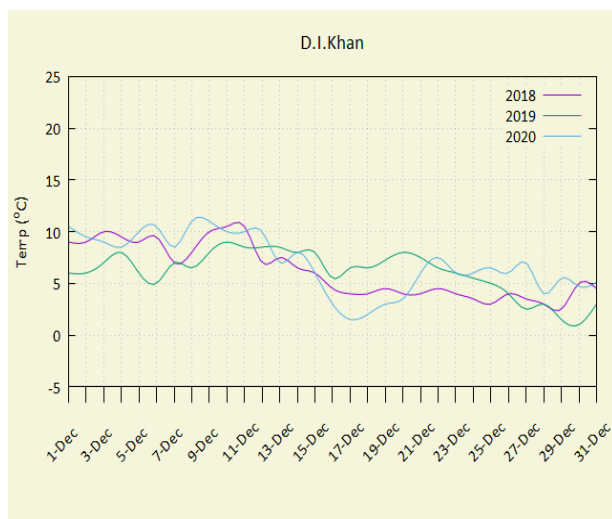
Maximum Temperature: December 2020

The ranges of maximum temperature (°C) during December 2020 were as follows:



Minimum Temperature: December 2020

The ranges of minimum temperature (°C) during December 2020 were as follows:

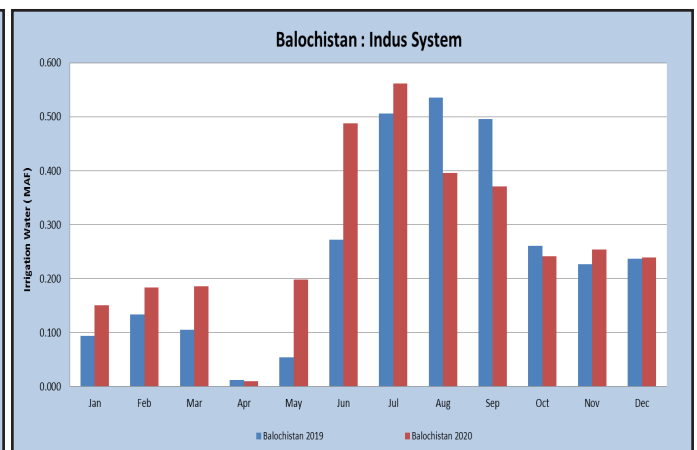
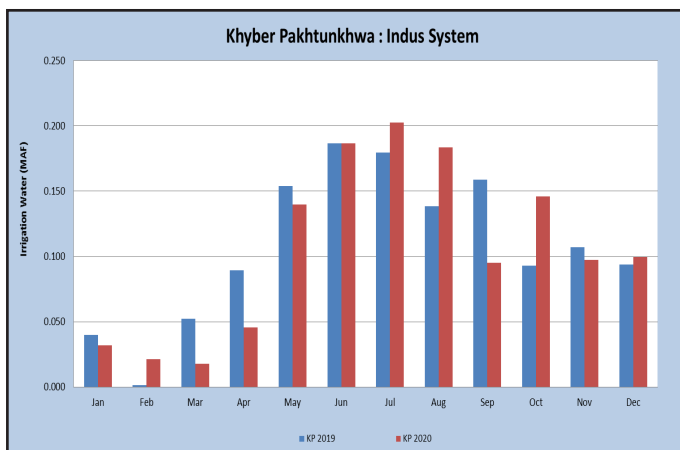
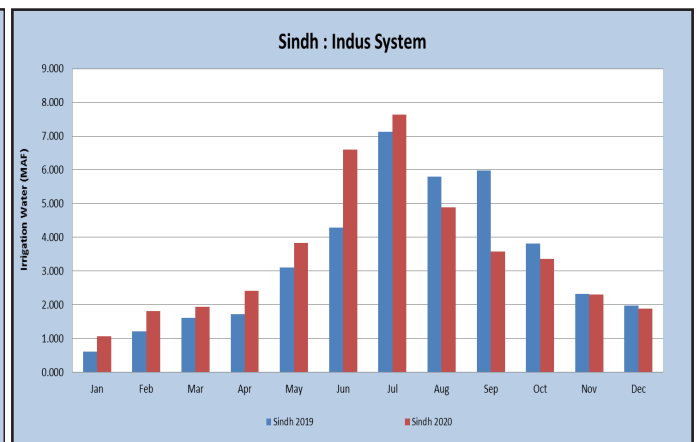
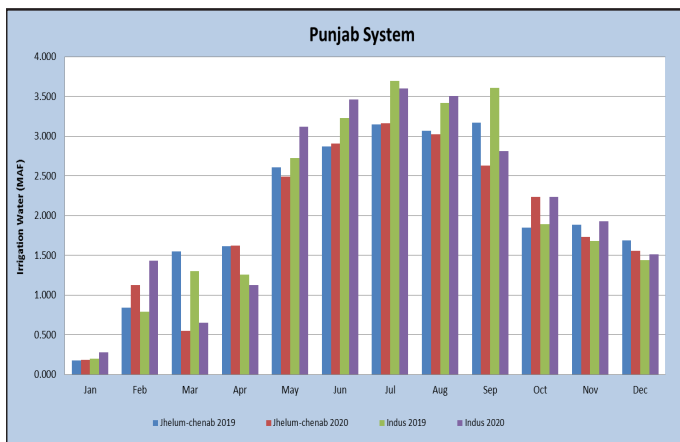


Irrigation Water Supply: December, 2020

The irrigation water supply during December 2020 was 5.29 MAF against the last year's supply of 5.43 MAF, lower by 0.14 MAF (2.50 percent). During December 2020, as compared to the same time period of last year, the supply in Punjab was 3.07 MAF (lower by 2.01 percent), Sindh was 1.89 MAF (lower by 4.08 percent), Khyber Pakhtunkhwa received 0.10 MAF (higher by 5.70 percent) while Balochistan received water supply of 0.24 MAF (without any increase or decrease).

| Rabi 2020-21 | Month | Year | Punjab | | | Sindh | Khyber Pakhtunkhwa | Balochistan | Total |
|--------------|----------|----------|-------------------|-------|-------|--------|--------------------|-------------|-------|
| | | | Jhelum-Chenab | Indus | Total | | | | |
| | | | Million Acre Feet | | | | | | |
| | October | 2020 | 2.23 | 2.24 | 4.47 | 3.37 | 0.15 | 0.24 | 8.23 |
| | | 2019 | 1.85 | 1.90 | 3.75 | 3.81 | 0.09 | 0.26 | 7.91 |
| | | Change | 0.38 | 0.34 | 0.72 | -0.44 | 0.05 | 0.01 | 0.32 |
| | | % change | 20.64 | 18.09 | 19.35 | -11.52 | 57.48 | -7.39 | 4.05 |
| | November | 2020 | 1.72 | 1.92 | 3.65 | 2.31 | 0.09 | 0.25 | 6.31 |
| | | 2019 | 1.88 | 1.67 | 3.56 | 2.32 | 0.10 | 0.22 | 6.22 |
| | | Change | -0.15 | 0.25 | 0.10 | -0.02 | -0.01 | 0.03 | 0.10 |
| % change | | -8.11 | 14.89 | 2.73 | -0.77 | -9.26 | 12.28 | 1.53 | |
| December | 2020 | 1.56 | 1.51 | 3.07 | 1.89 | 0.10 | 0.24 | 5.29 | |
| | 2019 | 1.69 | 1.44 | 3.13 | 1.97 | 0.09 | 0.24 | 5.43 | |
| | Change | -0.13 | 0.07 | -0.06 | -0.08 | 0.01 | 0.00 | -0.14 | |
| | % change | -7.76 | 4.73 | -2.01 | -4.08 | 5.70 | 0.84 | -2.50 | |

Source: Indus River System Authority (IRSA)



Fertilizer Offtake

As per report of NFDC, the month of November 2020 started with opening inventory of 672 thousand tons of Urea. During November 2020, domestic Urea production was 515 thousand tons with total availability of 1187 thousand tons. Urea offtake during November remained 533 thousand tons leaving behind closing balance of 668 thousand tons.

The opening inventory of DAP for November 2020 was 245 thousand tons. During November 2020 domestic production of DAP was 77 thousand tons. The total availability of DAP was 465 thousand tons which also includes 143 thousand tons of imported supplies. DAP offtake during November 2020 was 367 thousand tons leaving behind closing balance of 99 thousand tons.

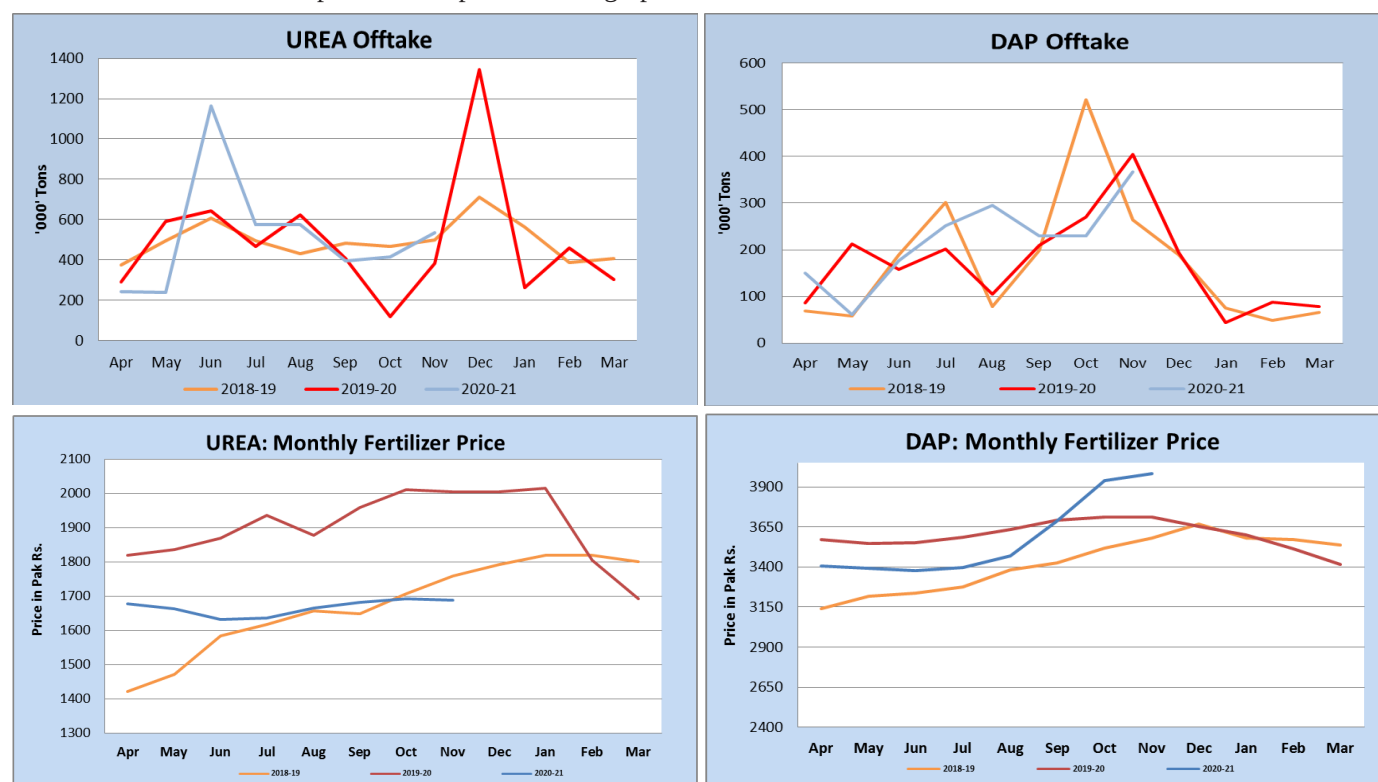
During November 2020, offtake of Nitrogen and Potash increased by 28.2 and 23.0 percent respectively while for that of Phosphate decreased by 5.3 percent.

| Product | Opening Inventory | Domestic Production | Imports | Total Availability | Offtake | Write On/Off | Closing Balance |
|----------|-------------------|---------------------|---------|--------------------|---------|--------------|-----------------|
| 000 Tons | | | | | | | |
| Urea | 672 | 515 | 0 | 1187 | 533 | 14 | 668 |
| DAP | 245 | 77 | 143 | 465 | 367 | 1 | 99 |

| Month | Fertilizer Offtake Rabi 2020-21 | | | | Fertilizer Offtake Rabi 2019-20 | | | | % Change | | | |
|-------|---------------------------------|-----------|--------|-------|---------------------------------|-----------|--------|-------|----------|-----------|--------|-------|
| | Nitrogen | Phosphate | Potash | Total | Nitrogen | Phosphate | Potash | Total | Nitrogen | Phosphate | Potash | Total |
| | (000 Tons) | | | | | | | | | | | |
| Oct | 255.6 | 123.5 | 7.3 | 386.4 | 122.4 | 140.7 | 5.0 | 268.1 | 108.8 | -12.3 | 47.7 | 44.1 |
| Nov | 345.5 | 191.2 | 4.8 | 541.6 | 269.6 | 201.9 | 3.9 | 475.4 | 28.2 | -5.3 | 23.0 | 13.9 |
| Total | 601.1 | 314.7 | 12.2 | 928.0 | 392.0 | 342.6 | 8.9 | 743.5 | 137.0 | -17.5 | 70.7 | 58.0 |

Source: MRR.01/2021 NFDC

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



زرعی سفارشات

ماہ جنوری

گندم:-

- 1- گندم کو بر وقت آبپاشی گندم کی پیداوار بڑھانے والے کلیدی عناصر میں سے ایک ہے۔ مونچی کے بعد کاشتہ فصل کو 30 تا 40 دن بعد پہلا پانی لگائیں۔ دیگر فصلات، وریال زمین پر کاشت اور پچھیتی کاشتہ گندم کو پہلا پانی 20 تا 25 دن بعد لگائیں۔
- 2- گندم کو دوسرا پانی 80 تا 90 دن بعد لگائیں جبکہ پچھیتی کاشت کو دوسرا پانی گوبھ کی حالت پر 70 تا 80 دن بعد لگائیں۔ پانی لگانے میں تاخیر سے تولیدی شگوفے کم اور دانہ کا وزن کم ہو جاتا ہے۔
- 3- پہلی آبپاشی کے بعد کھیت وتر میں آنے کے بعد دوہری بار ہیرو چلائیں۔
- 4- جڑی بوٹیاں کی بر وقت تلفی پیداوار میں اضافہ کی ضامن ہے۔ گندم کی فصل میں چوڑے اور نوکیلے پتوں والی دونوں طرح کی جڑی بوٹیاں ہوتی ہیں۔ اس لیے ان کے لیے مناسب زہروں کا مؤثر استعمال کریں۔
- 5- نوکیلے پتوں والی جڑی بوٹیوں عام طور پر دوسرے پانی کے بعد کھیت میں نظر آتی ہیں۔ اس لیے ان کے تدارک کے لیے سفارش کردہ زرعی زہروں کا استعمال انتہائی ضروری ہے۔
- 6- سپرے کے وقت مندرجہ ذیل باتوں کا خاص خیال رکھتے ہوئے بہتر نتائج حاصل کیے جا سکتے ہیں۔
 - (a) سپرے کے لیے کم از کم 100 تا 120 لیٹر پانی فی ایکڑ استعمال کریں۔
 - (b) سپرے اس وقت کریں جب سورج چمک رہا ہو۔
 - (c) تیز ہوا، بارش، دھند اور شبنم کے زیر اثر فصل پر سپرے سے اجتناب کریں۔
 - (d) سپرے مشین کو اچھی طرح صاف کرنے کے بعد فلیٹ فین نوزل سے سپرے کریں۔
 - (e) سپرے کے بعد گوڈی یا بار ہیرو کا استعمال نہ کریں۔
 - (f) علیحدہ علیحدہ یا دونوں طرح کی زہروں کو ملا کر سپرے کرنے کی صورت میں زہروں کی مقدار کم نہ کریں۔
 - (g) سپرے کے دوران حفاظتی لباس، ماسک اور ہاتھوں پر دستانے کا استعمال کریں۔
 - (h) ہوا کے رخ سپرے کریں۔

کماؤ:-

- 1- فصل کو زمین سے ایک انچ گہرائی سے کاٹیں۔ اس سے زیر زمین پورپوں میں موجود آنکھوں کو زیادہ صحت مند ماحول میسر آتا ہے۔ اور مدنڈھوں میں موجود گڑووں کی سنڈیوں کو تلف کرنے میں مدد ملتی ہے۔
- 2- کٹائی سے 20-25 دن پہلے آبپاشی دینا بند کر دیں۔
- 3- کماؤ کی کٹائی اس وقت کریں جب چینی کی بافت عروج پر ہو۔ سب سے پہلے مونڈھی پھر ستمبر کاشتہ اور آخر میں بہاریہ فصل کی کٹائی کریں۔ اس طرح چینی کی ریکوری زیادہ ہوگی۔
- 4- کھر کی صورت میں فصل کو ہلکا پانی لگا دیں۔
- 5- مونڈھی فصل رکھنے کا ارادہ ہو تو کماؤ کو 15 جنوری کے بعد کاٹیں۔
- 6- بہاریہ کماؤ کی کاشت کے لیے بیج، کھاد اور زمین کی تیاری کا بندوبست کریں۔

فصلات اور باغات کورے اور سردی سے حفاظت

- کورے اور سخت سردی سے فصلات اور باغات کے چھوٹے بڑے پودوں پر مضر اثرات ہوتے ہیں۔
- کورے کے نقصانات:-** سخت سرد راتوں میں پودے بڑی تیزی سے حرارت خارج کرتے ہیں۔ اور خلیوں میں پانی جم جاتا ہے اور خلیے کے کیمیائی اجزاء میں بگاڑ پیدا ہو تا ہے۔ شدید سردی گندم کی فصل کے لیے نقصان دہ نہیں ہے لیکن کماؤ، باغات اور سبزیات کے پودے اس سے متاثر ہوتے ہیں۔ شدید سردی یا کورے کے حملے سے گنا کے رس کا معیار گر جاتا ہے اور وزن میں کمی آتی ہے۔ اس کے علاوہ کماؤ کی آنکھوں کی پھوٹنے کی صلاحیت کم ہو جاتی ہے۔ جس سے فصل کی کوالٹی متاثر ہو سکتی ہے۔
- حفاظتی اقدامات:-** 1- کماؤ کی مونڈھی فصل رکھنی ہو تو کورا ختم ہونے کے بعد کٹائی کا عمل شروع کریں۔ تاکہ فصل کی پیداوار متاثر نہ ہو۔

- 2- فصل کی آبپاشی کا وقفہ کم کر دیں اور پانی کم مقدار میں لگائیں۔
- 3- فصل کے ارد گرد بھوسہ، پرانی یا گھاس وغیرہ جلا کر دھواں کریں۔
- 4- کھر کی متوقع راتوں میں آبپاشی کی جائے اس سے زمین کے درجہ حرارت میں خاطر خواہ کمی نہیں ہوتی اور خلیوں میں پانی کی مقدار بڑھ جاتی ہے۔
- 5- باغات کے پودوں کے تنوں پر چونے اور نیلے تھوتے کے محلول کی سفیدی یا پرانی بوری یا پرانی لپیٹ کر بھی سردی کا اثر کم کیا جا سکتا ہے۔



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