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Basmati survey report APEDA, New Delhi



Pusa Basmati 1509

Pusa Basmati 1121

Basmati Survey Report-1 (Season 2018)

This is the 1st report for Basmati crop across 7 states totalling 81 districts. Detailed microscopic level has been collected and compiled in this report. The report begins with an overview of the entire scenario of Basmati crop acreage for the current season and then goes on to provide state wise and district wise details. Varietal segregation of crops has also been undertaken in the survey report

Geotrans Technologies Pvt. Ltd.

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TEAM GEOTRANS

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Chapter 1

Executive Summary

Study districts - The study area covers 81 districts, which includes 22 districts of Punjab, 21 districts of Haryana, 30 districts of Uttar Pradesh, 4 districts of Uttarakhand, 1 district of Himachal Pradesh and 3 districts of Jammu & Kashmir.

Kharif Rice Acreage - This year the total rice transplanted area has decreased in area by -2.2% i.e. from 58,06,400 ha to 56,76,967 ha in the studied area of 7 states and 81 districts. However, the percentage area occupied by Basmati has reduced in major states of Haryana and Punjab by 3.1% and 2.4% respectively as observed during the first survey estimates. In U.P. the area under Basmati has decreased 4,220 ha. Overall the Basmati area has decreased by 2.3% in comparison to last year i.e. 2017.

Table: 1 Kharif rice area across major states

| Area (in 000 Ha.) | | | | |
|-------------------|------------------|-----------------|---------------|--------------|
| S.No | State | 2018 | 2017 | % Change LY |
| Rice Area | | | | |
| 1 | Haryana | 1278.79 | 1273.70 | 0.4% |
| 2 | Punjab | 2863.08 | 2892.00 | -1.0% |
| 3 | Uttar Pradesh | 1238.66 | 1336.20 | -7.3% |
| 4 | Uttarakhand | 128.56 | 129.60 | -0.8% |
| 5 | J & K | 131.63 | 139.00 | -5.3% |
| 6 | Himachal Pradesh | 60.80 | 60.80 | 0.0% |
| 7 | Delhi | 1.58 | 1.50 | 5.0% |
| | Total | 5703.103 | 5832.8 | -2.2% |

Basmati Acreage - The total Basmati (notified varieties) area in these targeted districts has decreased by 2.7%. The notified Basmati varieties majorly comprises of Basmati-370, Basmati- 386, Type-3 (Dehraduni), Taraori, Ranbir, Pusa-1509, Pusa Basmati-1, CSR-30 and Pusa Basmati-1121

Table: 2 Basmati rice area across major states

| Area(in 000 Ha.) | | | | |
|---------------------|------------------|-------------|---------------|--------------|
| S.No | State | 2017 | 2018 | % Change LY |
| Basmati Area | | | | |
| 1 | Haryana | 652.3 | 631.7 | -3.1% |
| 2 | Punjab | 561.45 | 549.2 | -2.2% |
| 3 | Uttar Pradesh | 255.8 | 251.5 | -1.7% |
| 4 | Uttarakhad | 14.8 | 14.5 | -1.68% |
| 5 | J & K | 61.5 | 63.4 | 3.0% |
| 6 | Himachal Pradesh | 7.0 | 7.1 | 0.7% |
| 7 | Delhi | 1.5 | 1.2 | -20.0% |
| | Total | 1561 | 1519.1 | -2.3% |

However, these are not the final figures on basmati acreage for the current season and it might get changed as per the subsequent surveys and field reports. (minor difference is coming due to decimal rounding off and overlap of varieties)

Basmati Acreage of Major Varieties - This year PB -1121 has been reduced to 3.3% while Pusa-1509 increased by 6.8%, clearly indicates that farmer replaced PB 1121 with Pusa -1509 due to lesser price differential between these two varieties in last one year. Farmer preferred high yielding Pusa-1509 in place of low yielding PB-1121. Basmati PB 1509 is preferred due to its shorter time period and early maturity traits. Pusa basmati - 1 is continuously reducing in acreage over years and now is only preferred by farmers who take it for their self-consumption or where it has clear market from exporters, However PB -1 still has good market potential of about 1.5-2 lacs ton each in exports markets like Europe & Saudi Arabia.

Table: 3 State wise Basmati Acreage of Major Varieties (Fig in 000 ha.)

| States | Pusa Basmati 1121 | | | Pusa-1509 | | | Pusa Basmati -1 | | |
|--------------|-------------------|----------------|--------------|---------------|---------------|-------------|-----------------|---------------|--------------|
| | 2017 | 2018 | % Change | 2017 | 2018 | % Change | 2017 | 2018 | % Change |
| Haryana | 443.50 | 423.78 | -4.4% | 30.01 | 33.31 | 11.0% | 85.60 | 85.67 | 0.1% |
| Punjab | 500.06 | 485.64 | -2.9% | 30.01 | 33.31 | 11.0% | 23.05 | 23.04 | -0.1% |
| U.P | 144.13 | 139.48 | -3.2% | 55.95 | 57.80 | 3.3% | 42.84 | 41.82 | -2.4% |
| U.K | 3.54 | 3.48 | -1.8% | 2.53 | 2.49 | -1.8% | 2.27 | 2.26 | -0.5% |
| J & K | 8.21 | 9.26 | 12.8% | 0.26 | 0.26 | 0.0% | - | - | - |
| H.P | 1.92 | 1.92 | 0.0% | 5.10 | 5.15 | 1.0% | - | - | - |
| Delhi | 1.50 | 1.32 | -12.0% | - | - | - | - | - | - |
| Total | 1102.86 | 1064.87 | -3.4% | 123.85 | 132.32 | 6.8% | 153.76 | 152.78 | -0.6% |

Long Grain Non-Basmati Acreage - The acreage under long grain non-basmati varieties Sharbati in 81 targeted districts have increased by 1.1%. while Sugandha decreased by 0.1%- 0.4%.

This year Sharbati the preference among farmers not only over basmati but also over high yielding HYV varieties in Western & Central part of UP. In markets like Punjab & Haryana, Sharbati is very less cultivated and still not a good preference among farmers. Primarily this acreage shift in UP towards Sharbati is not only due to lesser price differential between basmati & non-basmati varieties in these markets, but also its high yields / lesser susceptibility towards diseases / high demand / lesser cost of cultivation etc

Sugandha, which is primarily complimenting PB-1121, has been not changed in big way due to lesser preference on PB -1121 this year. Usually Sugandha is not preferred by farmers as independent choice in long grain rice

Table: 4 State wise Sharbati, Sugandha (Fig in 000 ha.)

| States | Sharbati | | | Sugandha | | | Total Long Grain Non-Basmati | | |
|--------------|---------------|---------------|-------------|--------------|----------------|--------------|------------------------------|---------------|-------------|
| | 2017 | 2018 | % Change | 2017 | 2018 | % Change | 2017 | 2018 | % Change |
| Haryana | 5.75 | 5.82 | 1.2% | - | - | - | 5.75 | 5.82 | 1.2% |
| Punjab | 5.90 | 5.90 | 0.0% | - | - | - | 5.90 | 5.90 | 0.0% |
| U.P | 173.56 | 173.97 | 0.2% | 91.72 | 91.59 | -0.1% | 265.28 | 265.57 | 0.1% |
| U.K | 14.97 | 16.73 | 11.8% | 0.49 | 0.49 | 0.0% | 15.46 | 17.22 | 11.4% |
| Total | 200.18 | 202.42 | 1.1% | 92.21 | 92.0878 | -0.1% | 292.39 | 294.50 | 0.7% |

The presence of Sharbati and Sugandha is negligible in J&K, Himachal Pradesh and Delhi as compared to other states.

Chapter 2

Project Background

Basmati rice is an important export commodity among the food grains exported from India. During the past few years, the Basmati export has been growing steadily, from 7.71 lakh metric tonnes in 2003 to an estimated 4 million metric tonnes in 2017-18 on robust demand from the traditional markets in West Asia. Almost 132 countries have been importing Basmati from India every year. Out of which, Iran, Saudi Arabia, UAE and Iraq are the major importers. Apart from India, Pakistan also exports Basmati to many countries.

The survey validation based on acreage estimation for Basmati crop in selected districts on crop acreage, crop health monitoring, yield estimation, production for Basmati rice and non-notified varieties. The questionnaire-based sample survey of farmers, for 81 districts in the selected seven states i.e. Punjab, Haryana, Uttar Pradesh, Uttarakhand, Himachal Pradesh, and Jammu & Kashmir apart from Delhi have been done to ascertain the acreage figures. The random sampling-based field survey approach has been being applied to collect the information at block level to improve the accuracy further to a desired level.

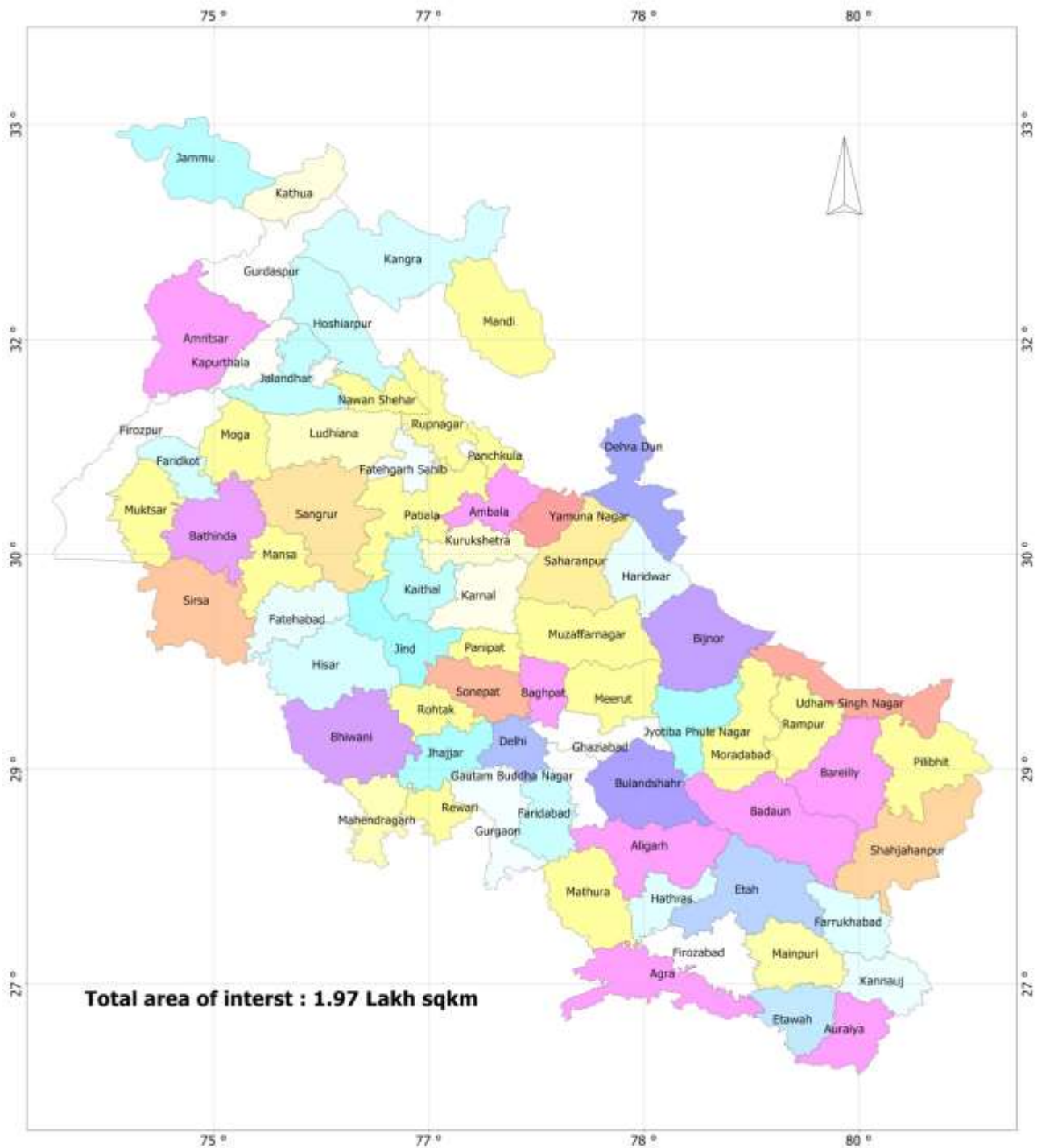
Table describing the districts of study under each state.

| UTTAR PRADESH | PUNJAB | HARYANA | UTTARAKHAND | J & K | HIMACHAL PRADESH |
|----------------------|-----------------|--------------------|-------------|--------|------------------|
| Agra | Amritsar | Ambala | Dehradun | Jammu | Kangra |
| Aligarh | Barnala | Bhiwani | Haridwar | Kathua | Mandi |
| Auraiya | Bhatinda | Faridabad + Palwal | Nainital | Samba | DELHI |
| Baghpat | Faridkot | Gurgaon | U S Nagar | | |
| Bareilly | Fatehgarh Sahib | Fatehabad | | | |
| Bijnore | Fazilka | Hisar | | | |
| Budaun | Firozpur | Jajjhar | | | |
| Bulandshahr | Gurdaspur | Jind | | | |
| Etah+Kasganj | Pathankot | Kaithal | | | |
| Farukhabad | Hoshiarpur | Karnal | | | |
| Firozabad | Jalandhar | Kurukshetra | | | |
| Etawah | Kapurthala | Mewat | | | |
| Gautam Buddha Ngr | Ludhiana | MahendraGarh | | | |
| Ghaziabad+Hapur | Mansa | Panchkula | | | |
| Hathras | Moga | Panipat | | | |
| Mathura | Mohali | Rewari | | | |
| Mainpuri | Muktsar | Rohtak | | | |
| Meerut | Nawanshahar | Sirsa | | | |
| Moradabad | Patiala | Sonepat | | | |
| J.P.Nagar | Rupnagar | Yamunanagar | | | |
| Kannauj | Sangrur | | | | |
| Muzaffarnagar+Shamli | Tarantaran | | | | |
| Pilibhit | | | | | |
| Rampur | | | | | |
| Saharanpur | | | | | |
| Shahjahanpur | | | | | |
| Sambhal | | | | | |

The Basmati varieties for which information is provided include Basmati-370, Basmati-386, Type-3 (Dehraduni), Taraori, Ranbir), Pusa-1509, Pusa Basmati-1, CSR-30 and Pusa Basmati-1121 and non-notified, non-Basmati (Sharbati, and Sugandha).

Map of current scope of study and report

The present report being the first cycle of report for Kharif-(2018-2019) covers the results of field survey based total rice and total Basmati acreage in different states.



Validation using satellite mapping: We also used advanced satellite mapping technology to verify the findings of the survey and the same have been found to be in line with field survey report. Satellite mapping uses various bands of reflectance to segregate crops. Based on this and using several filters we have segregated the crops and crops to vary the data.

Chapter 3

State Level Details

This year total rice is studied in 81 districts which has been reduced to 2,2% while basmati acreage has been reduced to 2.77%. In targeted 81 districts farmers preferred sugarcane and cotton crop over rice due to higher returns on these crops.

Table: 5 State wise rice transplanted area and Basmati area in Kharif 2018

| State-wise Rice Transplanted Area and Basmati Area in kharif-2018-19 | | | | | |
|----------------------------------------------------------------------|------------------|-------------------|---------|------------|---------|
| Area '000 ha | | | | | |
| S.No. | State | Area Transplanted | | | |
| | | 2017 | | 2018 | |
| | | Total rice | Basmati | Total rice | Basmati |
| 1 | Haryana | 1273.70 | 652.05 | 1278.79 | 631.75 |
| 2 | Punjab | 2892.00 | 563.45 | 2863.08 | 549.19 |
| 3 | Uttar Pradesh | 1336.20 | 255.75 | 1238.66 | 251.53 |
| 4 | Uttarakhand | 129.60 | 14.79 | 128.56 | 14.54 |
| 5 | Jammu & Kashmir | 139.00 | 61.53 | 131.63 | 63.40 |
| 6 | Himachal Pradesh | 60.80 | 7.02 | 60.80 | 7.07 |
| 7 | Delhi | 1.50 | 1.50 | 1.58 | 1.2 |
| Total | | 5832.80 | 1561.44 | 5703.10 | 1519 |

Haryana

In Haryana, the total rice acreage based on field survey has been estimated at 1279 thousand ha in 20 districts as on 3rd Aug (this is little bit higher than last year total rice on ground), 2018. Karnal district has the highest target area under total rice (160 thousand ha), followed by Kaithal district (158 thousand ha). The transplanting is almost completed in the state. Basmati area has reduced by 3.1% in comparison to last year. Increased MSP hasn't been an impact on overall rice acreage as it is delared very late for haryana farmers

Table: 6 Basmati rice acreages in Haryana Kharif 2018

| S. No. | District | Total rice acreage | | Total basmati acreage | | |
|--------|--------------------|---------------------|---------------|-----------------------|--------------|--------------|
| | | 2017 | 2018 | 2017 | 2018 | % Change LY |
| | | Acreage in '000 hac | | | | |
| 1 | Ambala | 80.0 | 80.3 | 15.4 | 13.6 | -11.6% |
| 2 | Bhiwani | 20.9 | 21.0 | 18.7 | 18.3 | -2.5% |
| 3 | Faridabad + Palwal | 32.5 | 32.6 | 25.5 | 22.9 | -10.1% |
| 4 | Gurgaon | 107.9 | 108.3 | 2.2 | 2.0 | -9.1% |
| 5 | Fatehabad | 4.7 | 4.7 | 44.7 | 42.2 | -5.6% |
| 6 | Hisar | 61.5 | 61.7 | 38.4 | 36.6 | -4.7% |
| 7 | Jajjhar | 42.5 | 42.7 | 38.6 | 40.0 | 3.4% |
| 8 | Jind | 126.8 | 127.3 | 70.6 | 77.1 | 9.2% |
| 9 | Kaithal | 157.7 | 158.3 | 60.9 | 57.7 | -5.3% |
| 10 | Karnal | 159.7 | 160.3 | 75.0 | 69.6 | -7.1% |
| 11 | Kurukshetra | 118.2 | 118.7 | 29.1 | 28.3 | -2.6% |
| 12 | Mewat | 7.9 | 7.9 | 6.6 | 6.5 | -1.0% |
| 13 | MahendraGarh | 0.0 | 0.0 | 0.0 | 0.0 | |
| 14 | Panchkula | 9.3 | 9.3 | 0.0 | 0.0 | |
| 15 | Panipat | 70.9 | 71.2 | 63.5 | 62.3 | -1.9% |
| 16 | Rewari | 1.7 | 1.7 | 1.1 | 1.0 | -1.0% |
| 17 | Rohtak | 42.0 | 42.2 | 30.8 | 30.4 | -1.5% |
| 18 | Sirsa | 71.1 | 71.3 | 57.0 | 51.6 | -9.5% |
| 19 | Sonepat | 88.7 | 89.0 | 65.2 | 62.9 | -3.6% |
| 20 | Yamunanagar | 69.9 | 70.1 | 8.7 | 8.7 | 0.6% |
| | Total | 1273.7 | 1278.8 | 652.0 | 631.7 | -3.1% |

Punjab

In Punjab, the rice transplanting has been 2863 thousand ha in 22 districts this year, which is about 1% lower than last year. Sangrur district has the largest area under rice (265 thousand ha), followed by Ludhiana district (247 thousand ha). Farmer shifted to non-basmati rice crop due to its higher return anticipated after government declared MSP which is almost 12% higher than last year. The total basmati acreage in Punjab has been reduced to 3.4%. The districts like Ferozabad / Bhatinda/ Hoshiarpur / seen dent in basmati acreage.

Table: 7 Basmati rice acreages in Punjab Kharif 2018

| S. No. | District | Total rice acreage | | Total basmati acreage | | |
|---------------------|-----------------|--------------------|-------------|-----------------------|------------|--------------|
| | | 2017 | 2018 | 2017 | 2018 | % Change LY |
| Acreage in '000 hac | | | | | | |
| 1 | Amritsar | 178 | 176 | 103.7 | 107.9 | 4.1% |
| 2 | Barnala | 107 | 106 | 2.3 | 2.3 | 0.0% |
| 3 | Bhatinda | 149 | 147 | 9.6 | 9.1 | -5.0% |
| 4 | Faridkot | 109 | 108 | 20.5 | 20.5 | 0.0% |
| 5 | Fatehgarh Sahib | 83 | 82 | 9.5 | 9.6 | 1.2% |
| 6 | Fazilka | 174 | 172 | 66.8 | 66.8 | 0.0% |
| 7 | Ferozepur | 115 | 114 | 48.3 | 33.8 | -30.0% |
| 8 | Gurdaspur | 169 | 167 | 42.0 | 41.6 | -0.7% |
| 9 | Pathankot | 26 | 26 | 2.7 | 2.7 | 1.5% |
| 10 | Hoshiarpur | 62 | 62 | 6.6 | 5.9 | -10.0% |
| 11 | Jalandhar | 159 | 157 | 10.4 | 10.4 | 0.0% |
| 12 | Kapurthala | 116 | 114 | 7.7 | 7.8 | 1.5% |
| 13 | Ludhiana | 249 | 247 | 22.7 | 22.7 | 0.2% |
| 14 | Mansa | 91 | 90 | 0.9 | 0.9 | 0.0% |
| 15 | Moga | 175 | 173 | 18.1 | 18.1 | 0.0% |
| 16 | Mohali | 30 | 29 | 3.9 | 3.8 | -1.0% |
| 17 | Muktsar | 150 | 149 | 50.7 | 50.7 | 0.0% |
| 18 | Nawanshahar | 53 | 53 | 4.9 | 4.8 | -1.4% |
| 19 | Patiala | 221 | 219 | 19.8 | 19.8 | 0.3% |
| 20 | Rupnagar | 33 | 32 | 2.8 | 2.9 | 3.5% |
| 21 | Sangrur | 268 | 265 | 32.0 | 31.7 | -0.8% |
| 22 | Tarantaran | 175 | 173 | 75.6 | 75.0 | -0.7% |
| | Total | 2892 | 2863 | 561 | 549 | -2.2% |

Uttar Pradesh

In Uttar Pradesh, late onset of monsoon, rice transplanting was started little late and continued in full swing during July/ Aug. A total of 1239 thousand ha rice acreage based on field survey has been estimated as transplanted in the 27 districts of the state as on 3rs Aug, 2018. Shahjehanpur district has the largest total rice area (182 thousand ha), followed by Pilibhit (142 thousand ha). The area under Basmati rice has decreased in Uttar Pradesh in comparison to last year. And in districts like Muzaffarnagar, Bagpat, Meerut, many farmers have sown sugarcane replacing Basmati, speculating quick returns from the sugar mills. Moreover, this year basmati has been replaced with Sharbati & high Yielding varieties which gave high returns to farmers in last year.

Table: 8 Basmati rice acreages in Uttar Pradesh Kharif 2018

| S. No. | District | Total rice acreage | | Total basmati acreage | | |
|--------|----------------------|---------------------|---------------|-----------------------|--------------|--------------|
| | | 2017 | 2018 | 2017 | 2018 | % Change LY |
| | | Acreage in '000 hac | | | | |
| 1 | Agra | 4.0 | 3.7 | 0.9 | 0.9 | -0.5% |
| 2 | Aligarh | 58.3 | 54.0 | 26.0 | 25.3 | -2.5% |
| 3 | Auraiya | 44.9 | 41.7 | 1.9 | 1.9 | -1.2% |
| 4 | Baghpat | 4.9 | 4.6 | 3.6 | 3.6 | -1.7% |
| 5 | Bareilly | 150.1 | 139.1 | 3.0 | 3.0 | -2.9% |
| 6 | Bijnore | 43.7 | 40.5 | 6.9 | 6.8 | -0.8% |
| 7 | Budaun | 47.8 | 44.3 | 14.1 | 14.0 | -0.9% |
| 8 | Bulandshahr | 52.0 | 48.2 | 29.2 | 29.7 | 1.5% |
| 9 | Etah+Kasganj | 33.2 | 30.7 | 8.5 | 8.3 | -1.7% |
| 10 | Farukhabad | 11.3 | 10.5 | 2.7 | 2.6 | -2.0% |
| 11 | Firozabad | 12.5 | 11.6 | 3.8 | 3.7 | -1.8% |
| 12 | Etawah | 40.6 | 37.6 | 8.9 | 8.7 | -2.1% |
| 13 | Gautam Buddha Ngr | 26.8 | 24.9 | 20.2 | 19.7 | -2.6% |
| 14 | Ghaziabad+Hapur | 27.0 | 25.0 | 9.7 | 9.3 | -3.5% |
| 15 | Hathras | 13.6 | 12.6 | 7.1 | 7.0 | -0.9% |
| 16 | Mathura | 35.7 | 33.1 | 27.2 | 27.0 | -0.9% |
| 17 | Mainpuri | 48.0 | 44.5 | 18.1 | 16.8 | -6.9% |
| 18 | Meerut | 16.3 | 15.1 | 7.1 | 7.2 | 1.3% |
| 19 | Moradabad | 66.5 | 61.6 | 3.4 | 3.7 | 7.2% |
| 20 | J.P.Nagar | 16.0 | 14.8 | 4.1 | 4.1 | 0.2% |
| 21 | Kannauj | 12.3 | 11.4 | 2.2 | 2.2 | -0.3% |
| 22 | Muzaffarnagar+Shamli | 29.8 | 27.6 | 10.8 | 10.6 | -1.8% |
| 23 | Pilibhit | 152.5 | 141.4 | 4.4 | 4.4 | -1.1% |
| 24 | Rampur | 112.4 | 104.2 | 2.0 | 2.1 | 7.2% |
| 25 | Saharanpur | 50.5 | 46.8 | 22.3 | 21.5 | -3.5% |
| 26 | Shahjehanpur | 197.1 | 182.7 | 4.3 | 4.1 | -5.7% |
| 27 | Sambhal | 28.5 | 26.4 | 3.6 | 3.6 | -0.7% |
| | Total | 1336.2 | 1238.6 | 255.8 | 251.5 | -1.7% |

Uttarakhand

In Uttarakhand, A total of 1,30 thousand ha rice acreage based on first field survey has been estimated as transplanted in the 4 districts as on 3rd Aug, 2018. Udham Singh Nagar district has the largest area under rice (99 thousand ha). The total Basmati area is estimated to be 14,535 ha out of which 2,486 ha. is under Pusa Basmati-1509.

Table: 9 Basmati rice acreages in Uttarakhand Kharif 2018

| S. No. | District | Total Rice Acreage | | Total Basmati Acreage | | |
|--------|--------------|---------------------|------------|-----------------------|-------------|---------------|
| | | 2017 | 2018 | 2017 | 2018 | % Change |
| | | Acreage in '000 hac | | | | |
| 1 | Dehradun | 7.5 | 7.4 | 3.0 | 2.9 | -3.09% |
| 2 | Haridwar | 14.3 | 14.2 | 6.4 | 6.4 | -0.77% |
| 3 | Nainital | 8.6 | 8.5 | 1.5 | 1.5 | -1.00% |
| 4 | U S Nagar | 100.3 | 99.5 | 3.9 | 3.8 | -2.47% |
| | Total | 131 | 130 | 14.8 | 14.5 | -1.71% |

Jammu & Kashmir

In Jammu & Kashmir, three districts have been taken up for the study. The total rice area is estimated to be 120 thousand ha. in these districts. Jammu & Samba have an area of 74 thousand ha. and Kathua only 36 thousand ha. The state has received excess rainfall this year and the transplanting is almost complete.

Table: 10 Basmati rice acreages in Jammu & Kashmir Kharif 2018

| S.No | District | Total Rice 2018 | Total Basmati Rice 2018 | % Share of Basmati Rice |
|------|--------------|-----------------|-------------------------|-------------------------|
| 1 | Jammu | 80.50 | 49.35 | 61% |
| 2 | Kathua | 39.77 | 11.22 | 28% |
| 3 | Samba | 11.36 | 2.83 | 25% |
| | Total | 131.63 | 63.40 | 48% |

Himachal Pradesh

In Himachal Pradesh, A total of 74 thousand ha rice acreage based on field survey has been estimated as transplanted in 1 districts. Kangra district has the highest area. The Basmati varieties are grown mostly in Kangra. The farmers opted Permal varieties including PR-123 & Pusa Basmati- 1509.

Table: 11 Basmati rice acreages in Himachal Pradesh Kharif 2018

| S.No | District | Total Rice 2018 | Total Basmati Rice 2018 | % Share of Basmati Rice |
|------|----------|-----------------|-------------------------|-------------------------|
| 1 | Kangra | 60 | 7.1 | 11.8% |

Chapter 4

Percentage share of Basmati over total rice (District wise)

Haryana

Table: 12 District-wise acreage under total rice and Basmati area transplanted in Haryana during Kharif-(2018)

| S.No | District | Total Rice | Basmati Rice | % Share of Basmati Rice |
|------|----------------------|----------------|---------------|-------------------------|
| 1 | Ambala | 80.27 | 13.62 | 17% |
| 2 | Bhiwani | 21.02 | 18.27 | 87% |
| 3 | Faridabad + Palwal | 32.60 | 22.94 | 70% |
| 4 | Fatehabad | 108.35 | 42.22 | 39% |
| 5 | Gurgaon | 4.75 | 2.03 | 43% |
| 6 | Hisar | 61.75 | 36.62 | 59% |
| 7 | Jajjhar | 42.68 | 38.27 | 90% |
| 8 | Jind | 127.26 | 77.07 | 61% |
| 9 | Kaithal | 158.34 | 57.71 | 36% |
| 10 | Karnal | 160.34 | 69.64 | 43% |
| 11 | Kurukshetra | 118.67 | 28.29 | 24% |
| 12 | Mewat | 7.91 | 6.53 | 83% |
| 13 | MahendraGarh | | | |
| 14 | Panchkula | 9.30 | 0.00 | 0% |
| 15 | Panipat | 71.20 | 62.26 | 87% |
| 16 | Rewari | 1.74 | 1.05 | 60% |
| 17 | Rohtak | 42.19 | 30.39 | 72% |
| 18 | Sirsa | 71.34 | 51.55 | 72% |
| 19 | Sonepat | 89.00 | 62.88 | 71% |
| 20 | Yamunanagar | 70.13 | 8.71 | 12% |
| 21 | TOTAL HARYANA | 1278.84 | 631.75 | 49% |

Punjab

Table: 13 District-wise acreage under total rice and Basmati area transplanted in Punjab during Kharif-(2018)

| S.No | District | Total Rice | Basmati Rice | % Share of Basmati Rice |
|------|-----------------|-------------|--------------|-------------------------|
| 1 | Amritsar | 176.42 | 108 | 61.2% |
| 2 | Barnala | 105.63 | 2 | 2.2% |
| 3 | Bhatinda | 147.31 | 9 | 6.2% |
| 4 | Faridkot | 108.35 | 21 | 18.9% |
| 5 | Fatehgarh Sahib | 81.73 | 10 | 11.8% |
| 6 | Fazilka | 172.17 | 67 | 38.8% |
| 7 | Firozpur | 113.85 | 34 | 29.7% |
| 8 | Gurdaspur | 167.09 | 42 | 24.9% |
| 9 | Pathankot | 25.93 | 3 | 10.6% |
| 10 | Hoshiarpur | 61.78 | 6 | 9.6% |
| 11 | Jalandhar | 157.49 | 10 | 6.6% |
| 12 | Kapurthala | 114.48 | 8 | 6.8% |
| 13 | Ludhiana | 246.80 | 23 | 9.2% |
| 14 | Mansa | 90.17 | 1 | 0.9% |
| 15 | Moga | 172.97 | 18 | 10.4% |
| 16 | Mohali | 29.46 | 4 | 13.0% |
| 17 | Muktsar | 148.90 | 51 | 34.1% |
| 18 | Nawanshahar | 52.93 | 5 | 9.1% |
| 19 | Patiala | 218.59 | 20 | 9.1% |
| 20 | Rupnagar | 32.31 | 3 | 9.1% |
| 21 | Sangrur | 265.04 | 32 | 12.0% |
| 22 | Tarantaran | 173.48 | 75 | 43.3% |
| | Total | 2863 | 549 | 19.2% |

Uttar Pradesh

Table: 14 District-wise acreage under total rice and Basmati area transplanted in U.P during Kharif-(2018)

| S.No | District | Total Rice | Basmati Rice | % Share of Basmati Rice |
|------|----------------------|---------------|--------------|-------------------------|
| 1 | Agra | 3.7 | 0.9 | 23.7% |
| 2 | Aligarh | 54.0 | 25.3 | 46.9% |
| 3 | Auraiya | 41.7 | 1.9 | 4.5% |
| 4 | Baghpat | 4.6 | 3.6 | 78.2% |
| 5 | Bareilly | 139.1 | 3.0 | 2.1% |
| 6 | Bijnore | 40.5 | 7.1 | 17.6% |
| 7 | Budaun | 44.3 | 14.0 | 31.6% |
| 8 | Bulandshahr | 48.2 | 29.7 | 61.6% |
| 9 | Etah+Kasganj | 30.7 | 8.3 | 27.1% |
| 10 | Farukhabad | 10.5 | 2.6 | 24.8% |
| 11 | Firozabad | 11.6 | 3.7 | 32.1% |
| 12 | Etawah | 37.6 | 8.7 | 23.1% |
| 13 | Gautam Buddha Ngr | 24.9 | 19.7 | 79.0% |
| 14 | Ghaziabad+Hapur | 25.0 | 9.3 | 37.3% |
| 15 | Hathras | 12.6 | 7.0 | 55.6% |
| 16 | Mathura | 33.1 | 27.0 | 81.4% |
| 17 | Mainpuri | 44.5 | 16.8 | 37.8% |
| 18 | Meerut | 15.1 | 7.2 | 47.8% |
| 19 | Moradabad | 61.6 | 3.7 | 6.0% |
| 20 | J.P.Nagar | 14.8 | 4.1 | 27.8% |
| 21 | Kannauj | 11.4 | 2.2 | 19.1% |
| 22 | Muzaffarnagar+Shamli | 27.6 | 10.6 | 38.3% |
| 23 | Pilibhit | 141.4 | 4.4 | 3.1% |
| 24 | Rampur | 104.2 | 2.1 | 2.0% |
| 25 | Saharanpur | 46.8 | 21.5 | 45.9% |
| 26 | Shahjehanpur | 182.7 | 4.1 | 2.2% |
| 27 | Sambhal | 26.4 | 3.6 | 13.5% |
| | Total | 1238.6 | 251.9 | 20.3% |

Uttarakhand

Table: 15 District-wise acreage under total rice and Basmati area transplanted in U.K during Kharif-(2018)

| S.No | District | Total Rice | Basmati Rice | % Share of Basmati Rice |
|------|--------------|---------------|--------------|-------------------------|
| 1 | Dehradun | 7.41 | 2.89 | 39.0% |
| 2 | Haridwar | 14.23 | 6.37 | 44.8% |
| 3 | Nainital | 8.52 | 1.45 | 17.1% |
| 4 | U S Nagar | 99.49 | 3.89 | 3.9% |
| | Total | 129.65 | 14.60 | 11.3% |

Jammu & Kashmir

Table: 16 District-wise acreage under total rice and Basmati area transplanted in J & K during Kharif-(2018)

| S.No | District | Total Rice | Basmati Rice | % Share of Basmati Rice |
|------|--------------|----------------|--------------|-------------------------|
| 1 | Jammu | 80.495 | 49.4 | 61% |
| 2 | Kathua | 39.774 | 11.2 | 28% |
| 3 | Samba | 11.364 | 2.8 | 25% |
| | Total | 131.633 | 63.4 | 48% |

Himachal Pradesh

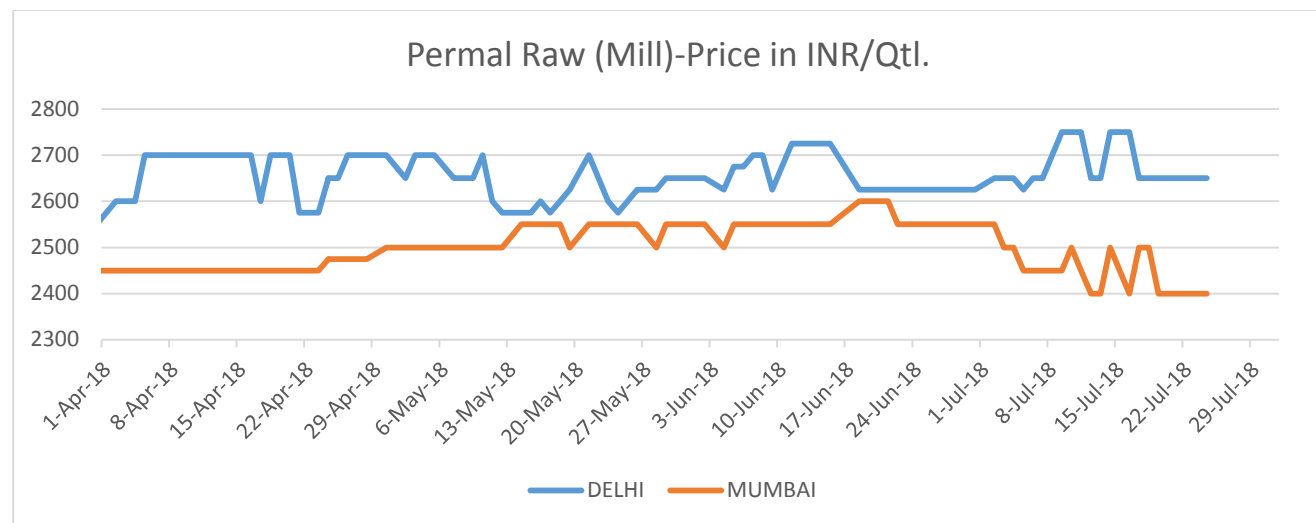
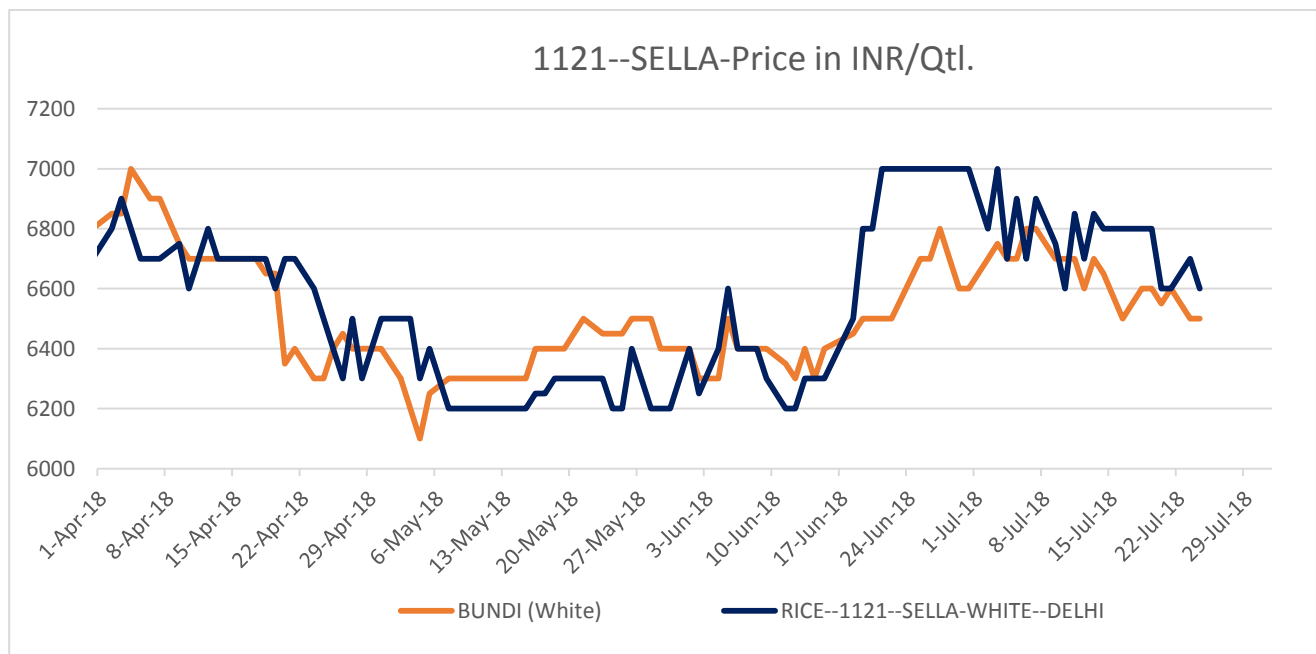
Table: 17 District-wise acreage under total rice and Basmati area transplanted in H & P during Kharif-(2018)

| S.No | District | Total Rice 2018 | Total Basmati Rice 2018 | % Share of Basmati Rice |
|------|----------|-----------------|-------------------------|-------------------------|
| 1 | Kangra* | 60 | 7.1 | 11.8% |

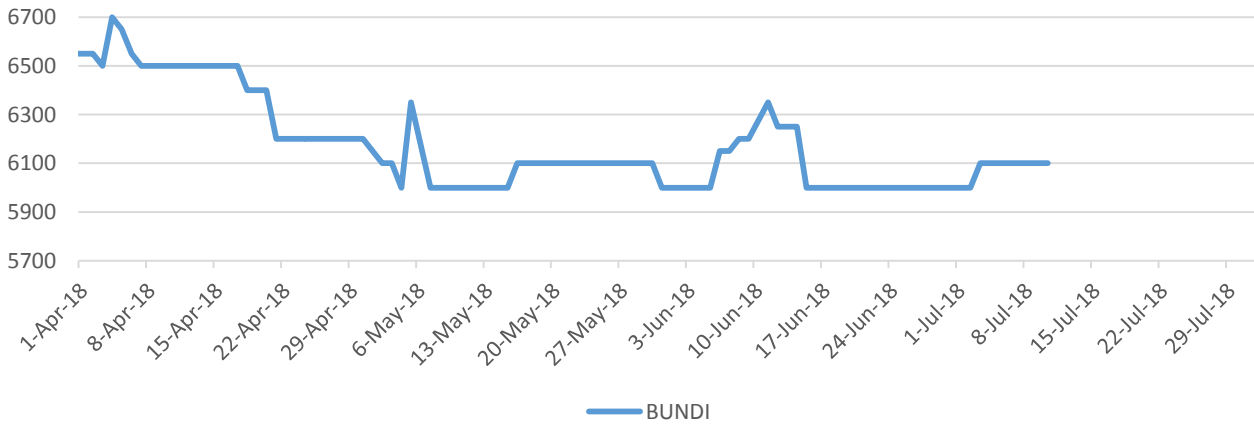
Chapter 5

Price Charts

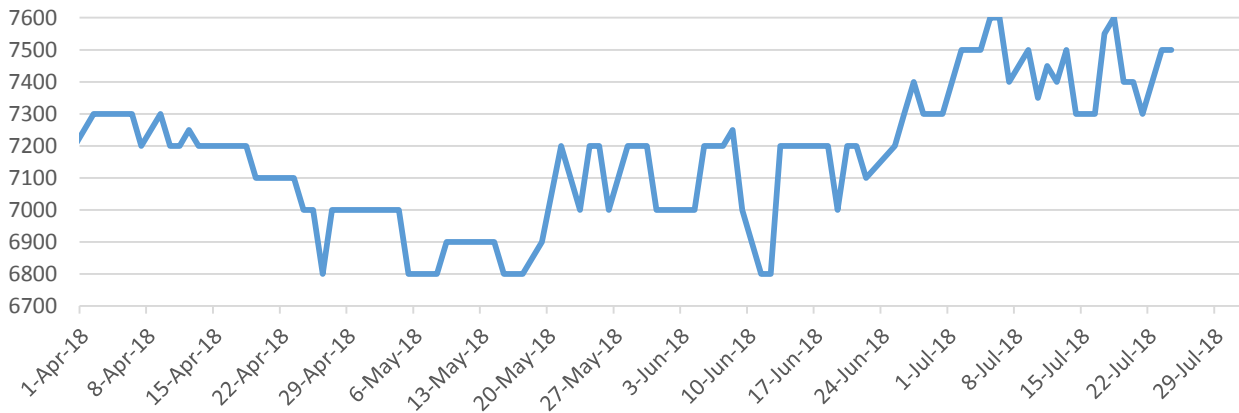
We tried to compare the price charts for the different competing variants of basmati & non-basmati rice, so that facts can be established over period in time that how market was not supporting the anticipated price and that's why farmer shifted to other crops. The data-sets on prices are from market pooling exercise done independently by the agency.



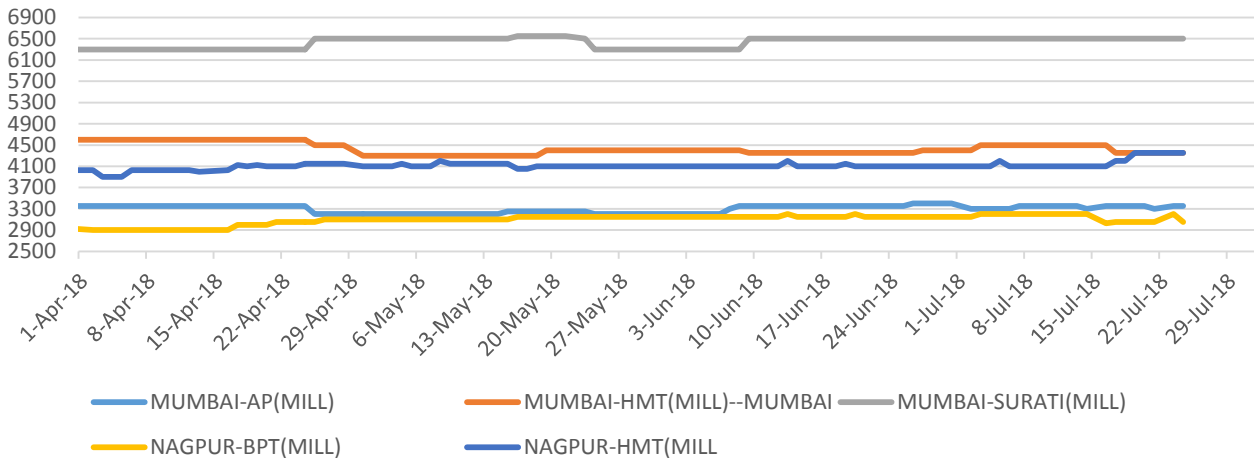
1509 Sella (Golden)-Price in INR/Qtl.



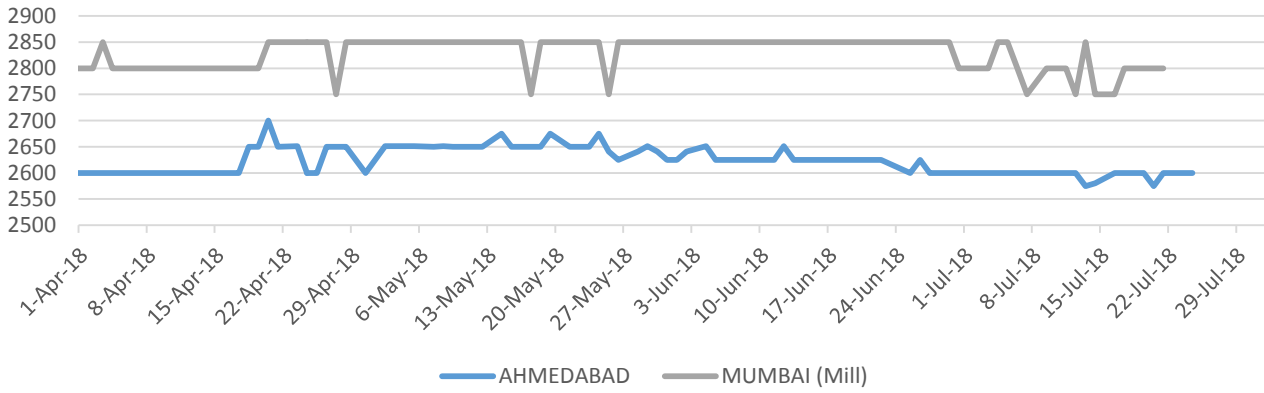
RICE--1121--STEAM(MILL)--DELHI (INR/Qtl.)



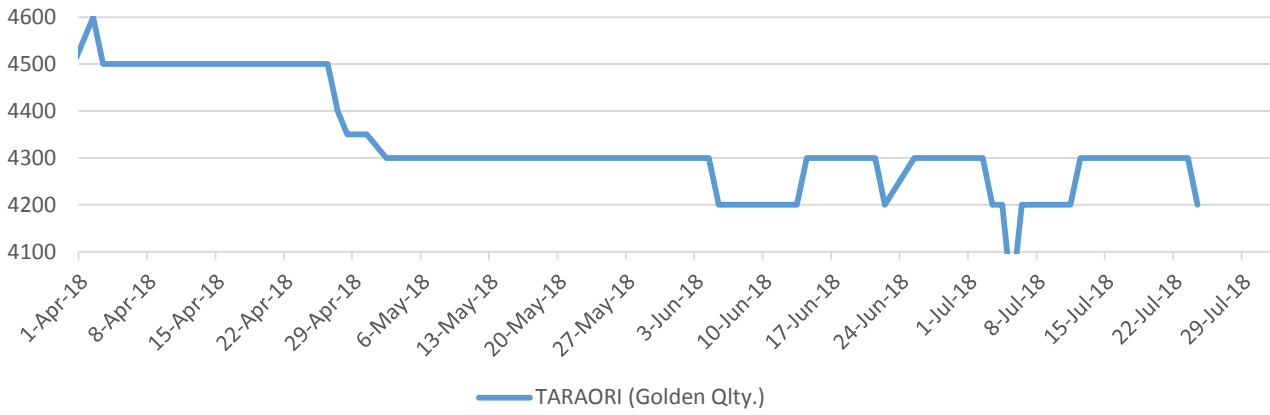
KOLAM RAW-Price in INR/Qtl.



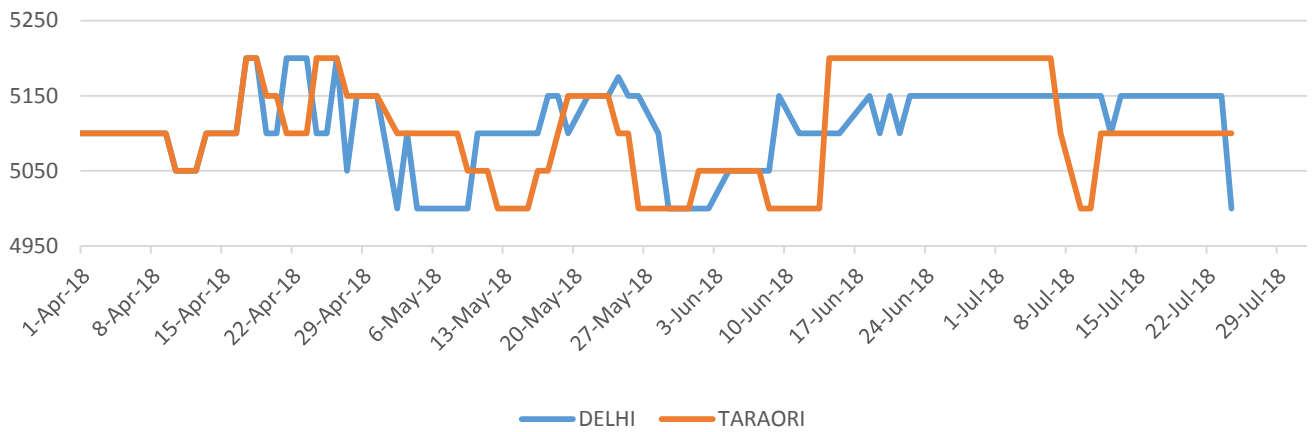
Permal Wand (White)-Price in INR/Qtl.



SHARBATI SELLA(MILL)-Price in INR/Qtl.



SHARBATI STEAM(MILL)-Price in INR/Qtl.



Chapter 6

State level variety wise details

Table: 18 HARYANA District-wise Variety-wise Basmati Acreage (fig in 000 hc)

| S.No | District | 2017 2018 | | 2017 2018 | | 2017 2018 | | 2017 2018 | | 2017 2018 | |
|------|--------------------|-------------------|--------------|-------------|-------------|------------------------------|--------------|----------------------------------|-------------|---------------|--------------|
| | | Pusa Basmati 1121 | | Pusa 1509 | | PB -1(inlcl PB-3/ PB-6/1401) | | CSR 30 & other evolved varieties | | Total Basmati | |
| 1 | Ambala | 6.2 | 4.6 | 0.13 | 0.13 | 0.2 | 0.25 | 8.8 | 8.6 | 15.4 | 13.6 |
| 2 | Bhiwani | 18.7 | 18.3 | 0.00 | 0.00 | 0.0 | 0.00 | | 0.0 | 18.7 | 18.3 |
| 3 | Faridabad + Palwal | 22.1 | 19.9 | 0.22 | 0.34 | 3.2 | 2.73 | | 0.0 | 25.5 | 22.9 |
| 4 | Gurgaon | 2.0 | 1.8 | 0.00 | 0.00 | 0.2 | 0.19 | | 0.0 | 2.2 | 2.0 |
| 5 | Fatehabad | 23.3 | 19.2 | 1.50 | 1.64 | 19.0 | 19.20 | 1.0 | 1.0 | 44.8 | 41.1 |
| 6 | Hisar | 36.0 | 34.2 | 0.52 | 0.52 | 0.8 | 0.83 | 1.0 | 1.0 | 38.4 | 36.6 |
| 7 | Jajjhar | 37.3 | 38.6 | 1.06 | 1.07 | 0.0 | 0.00 | 0.3 | 0.3 | 38.6 | 40.0 |
| 8 | Jind | 55.3 | 60.3 | 2.15 | 2.31 | 7.4 | 7.62 | 5.7 | 5.9 | 70.6 | 76.1 |
| 9 | Kaithal | 34.3 | 31.6 | 3.36 | 3.70 | 0.1 | 0.09 | 23.2 | 22.4 | 60.9 | 57.7 |
| 10 | Karnal | 36.5 | 33.3 | 9.91 | 11.35 | 0.2 | 0.21 | 28.3 | 24.7 | 75.0 | 69.6 |
| 11 | Kurukshetra | 9.9 | 10.2 | 3.02 | 3.18 | 2.3 | 2.35 | 13.8 | 12.6 | 29.1 | 28.3 |
| 12 | Mewat | 6.6 | 6.5 | 0.00 | 0.00 | 0.0 | 0.00 | | 0.0 | 6.6 | 6.5 |
| 13 | MahendraGarh | | 0.0 | 0.00 | 0.00 | 0.0 | 0.00 | | 0.0 | 0.0 | 0.0 |
| 14 | Panchkula | | 0.0 | 0.00 | 0.00 | 0.0 | 0.00 | | 0.0 | 0.0 | 0.0 |
| 15 | Panipat | 51.5 | 50.1 | 2.47 | 3.00 | 2.0 | 1.85 | 7.5 | 7.3 | 63.5 | 62.3 |
| 16 | Rewari | 1.1 | 1.0 | 0.00 | 0.00 | 0.0 | 0.00 | | 0.0 | 1.1 | 1.0 |
| 17 | Rohtak | 30.7 | 30.3 | 0.06 | 0.06 | 0.0 | 0.00 | 0.1 | 0.1 | 30.8 | 30.4 |
| 18 | Sirsa | 10.1 | 6.1 | 3.42 | 3.76 | 43.2 | 43.80 | 0.3 | 0.3 | 57.0 | 53.9 |
| 19 | Sonepat | 61.0 | 58.6 | 1.39 | 1.50 | 0.0 | 0.00 | 2.8 | 2.8 | 65.2 | 62.9 |
| 20 | Yamunanagar | 0.7 | 0.8 | 0.68 | 0.76 | 6.9 | 6.74 | 0.4 | 0.4 | 8.7 | 8.7 |
| | TOTAL | 443.5 | 425.5 | 29.9 | 33.3 | 85.7 | 85.85 | 93.1 | 87.3 | 652.1 | 631.9 |

Table: 19 PUNJAB District-wise Variety-wise Basmati Acreage (fig in 000 hc)

| S.No | District | 2017 2018 | | 2017 2018 | | 2017 2018 | | 2017 2018 | |
|------|----------|-------------------|------|-----------|----|--------------------------------|-----|-----------------------|-------|
| | | Pusa Basmati 1121 | | Pusa 1509 | | PB -1(inlcl PB-3/ PB-6/ 1401) | | Total Basmati acreage | |
| 1 | Amritsar | 72.6 | 75.5 | 31 | 32 | 0 | 0 | 103.6 | 107.6 |
| 2 | Barnala | 1.8 | 1.8 | 0 | 0 | 0.50 | 0.5 | 2.3 | 2.3 |
| 3 | Bhatinda | 9.6 | 9.1 | 0 | 0 | 0 | 0 | 9.6 | 9.1 |

| | | | | | | | | | |
|----|-----------------|--------------|--------------|-------------|-------------|-------------|-------------|--------------|------------|
| 4 | Faridkot | 20.5 | 20.5 | 0 | 0 | 0 | 0 | 20.5 | 20.5 |
| 5 | Fatehgarh Sahib | 7.6 | 7.7 | 0 | 0 | 1.9 | 1.9 | 9.5 | 9.6 |
| 6 | Fazilka | 66.8 | 66.8 | 0 | 0 | 0 | 0 | 66.8 | 66.8 |
| 7 | Firozepur | 48.3 | 33.8 | 0 | 0 | 0 | 0 | 48.3 | 33.8 |
| 8 | Gurdaspur | 41.9 | 41.5 | 0 | 0 | 0 | 0 | 42.0 | 41.6 |
| 9 | Pathankot | 2.7 | 2.7 | 0 | 0 | 0 | 0 | 2.7 | 2.7 |
| 10 | Hoshiarpur | 6.6 | 5.9 | 0 | 0 | 0 | 0 | 6.6 | 5.9 |
| 11 | Jalandhar | 9.7 | 9.7 | 1 | 1 | 0 | 0 | 10.4 | 10.4 |
| 12 | Kapurthala | 7.7 | 7.8 | 0 | 0 | 0 | 0 | 7.7 | 7.8 |
| 13 | Ludhiana | 17.4 | 17.4 | 2 | 2 | 3.2 | 3.2 | 22.7 | 22.7 |
| 14 | Mansa | 0.9 | 0.9 | 0 | 0 | 0.0 | 0 | 0.9 | 0.9 |
| 15 | Moga | 17.9 | 17.9 | 0 | 0 | 0.1 | 0.1 | 18.1 | 18.1 |
| 16 | Mohali | 3.9 | 3.8 | 0 | 0 | 0.0 | 0 | 3.9 | 3.8 |
| 17 | Muktsar | 42.4 | 42.4 | 0 | 0 | 8.3 | 8.3 | 50.7 | 50.7 |
| 18 | Nawanshahar | 4.7 | 4.6 | 0 | 0 | 0.0 | 0 | 4.9 | 4.8 |
| 19 | Patiala | 16.1 | 15.9 | 1 | 1 | 2.6 | 2.6 | 19.8 | 19.8 |
| 20 | Rupnagar | 2.8 | 2.9 | 0 | 0 | 0.0 | 0 | 2.8 | 2.9 |
| 21 | Sangrur | 25.6 | 25.3 | 0 | 0 | 6.4 | 6.4 | 32.0 | 31.7 |
| 22 | Tarantaran | 72.2 | 71.4 | 3 | 4 | 0.0 | 0 | 75.6 | 75.0 |
| | Total | 499.5 | 485.6 | 38.8 | 40.2 | 23.0 | 23.0 | 561.3 | 549 |

Table: 20 UTTAR PRADESH District-wise Variety-wise Basmati Acreage (fig in 000 hc)

| S.No | District | 2017 | | 2018 | | 2017 | | 2018 | | 2017 | | 2018 | |
|------|---------------------|-------------------|-----------|----------------------------------|---------------------------------------------------|-------------------|-----------|----------------------------------|---------------------------------------------------|------|--|------|--|
| | | Pusa Basmati 1121 | Pusa 1509 | PB -1(incld PB-3/ PB-6/ 1401 | Total Basmati incl others basmati varieties | Pusa Basmati 1121 | Pusa 1509 | PB -1(incld PB-3/ PB-6/ 1401 | Total Basmati incl others basmati varieties | | | | |
| 1 | Agra | 0.3 | 0.3 | 0.5 | 0.5 | 0.1 | 0.1 | 0.9 | 0.9 | | | | |
| 2 | Aligarh | 16.8 | 16.3 | 4.3 | 4.7 | 4.8 | 4.3 | 26.0 | 25.3 | | | | |
| 3 | Auraiya | 1.0 | 1.0 | 0.2 | 0.2 | 0.0 | 0.0 | 1.9 | 1.9 | | | | |
| 4 | Baghpat | 1.9 | 1.8 | 0.5 | 0.5 | 1.2 | 1.2 | 3.6 | 3.5 | | | | |
| 5 | Bareilly | 1.2 | 1.2 | 0.7 | 0.7 | 0.5 | 0.4 | 3.0 | 2.3 | | | | |
| 6 | Bijnore | 1.5 | 1.4 | 2.3 | 2.3 | 3.1 | 3.1 | 6.9 | 6.8 | | | | |
| 7 | Budaun | 1.9 | 1.9 | 2.1 | 2.1 | 0.7 | 0.7 | 14.1 | 14.7 | | | | |
| 8 | Bulandshahr | 19.0 | 19.3 | 4.5 | 4.7 | 5.8 | 5.7 | 30.7 | 29.6 | | | | |
| 9 | Etah+Kasganj | 4.9 | 4.7 | 3.1 | 3.1 | 0.5 | 0.5 | 8.5 | 8.3 | | | | |
| 10 | Farukhabad | 1.7 | 1.7 | 0.9 | 0.9 | 0.1 | 0.1 | 2.7 | 2.6 | | | | |
| 11 | Firozabad | 2.2 | 2.2 | 1.3 | 1.3 | 0.2 | 0.2 | 3.8 | 3.7 | | | | |
| 12 | Etawah | 6.2 | 6.0 | 2.6 | 2.6 | 0.2 | 0.2 | 8.9 | 8.7 | | | | |
| 13 | Gautam Buddha Nagar | 17.6 | 17.1 | 0.8 | 0.8 | 1.8 | 1.8 | 20.2 | 19.7 | | | | |
| 14 | Ghaziabad+Hapur | 5.4 | 4.7 | 2.9 | 3.2 | 1.4 | 1.4 | 9.7 | 9.3 | | | | |
| 15 | Hathras | 3.9 | 3.8 | 2.4 | 2.4 | 0.8 | 0.8 | 7.1 | 7.0 | | | | |

| | | | | | | | | | |
|----|----------------------|--------------|--------------|-------------|-------------|-------------|-------------|--------------|--------------|
| 16 | Mathura | 22.7 | 22.5 | 3.4 | 3.4 | 1.0 | 1.0 | 27.2 | 27.0 |
| 17 | Mainpuri | 15.4 | 13.9 | 2.5 | 2.8 | 0.2 | 0.2 | 18.1 | 16.8 |
| 18 | Meerut | 2.2 | 2.2 | 2.5 | 2.6 | 2.3 | 2.3 | 7.1 | 7.2 |
| 19 | Moradabad | 0.9 | 1.1 | 2.2 | 2.3 | 0.3 | 0.3 | 3.4 | 3.7 |
| 20 | J.P.Nagar | 1.1 | 1.2 | 2.0 | 2.0 | 1.0 | 1.0 | 4.1 | 4.1 |
| 21 | Kannauj | 0.6 | 0.6 | 1.4 | 1.4 | 0.2 | 0.2 | 2.2 | 2.2 |
| 22 | Muzaffarnagar+Shamli | 4.2 | 4.1 | 2.5 | 2.5 | 3.9 | 3.9 | 10.7 | 10.5 |
| 23 | Pilibhit | 0.8 | 0.8 | 3.4 | 3.4 | 0.2 | 0.2 | 4.4 | 4.4 |
| 24 | Rampur | 0.6 | 0.6 | 1.2 | 1.4 | 0.1 | 0.1 | 2.0 | 2.1 |
| 25 | Saharanpur | 6.9 | 6.5 | 3.3 | 3.4 | 11.9 | 11.4 | 22.3 | 21.3 |
| 26 | Shahjehanpur | 1.5 | 1.3 | 0.8 | 0.8 | 0.3 | 0.3 | 4.2 | 3.4 |
| 27 | Sambhal | 1.4 | 1.4 | 1.7 | 1.7 | 0.4 | 0.4 | 3.6 | 3.5 |
| | Total | 144.1 | 139.5 | 56.0 | 57.6 | 42.8 | 41.7 | 256.9 | 250.5 |

Table: 21 UTTARAKHAND District-wise Variety-wise Basmati Acreage (fig in 000 hc)

| S.No | District | 2017 2018 | | 2017 2018 | | 2017 2018 | | 2017 2018 | |
|------|--------------|-------------------|------------|------------|------------|--------------------------------|------------|---------------------------------------------|-------------|
| | | Pusa Basmati 1121 | | Pusa 1509 | | PB -1(incld PB-3/ PB-6/ 1401) | | Total Basmati incl others basmati varieties | |
| 1 | Dehradun | 0.3 | 0.3 | 0.2 | 0.2 | | 0 | 3.0 | 2.95 |
| 2 | Haridwar | 1.4 | 1.4 | 0.5 | 0.5 | 2.2 | 2.1 | 6.5 | 6.38 |
| 3 | Nainital | 0.3 | 0.3 | 0.3 | 0.3 | | 0 | 1.45 | 1.36 |
| 4 | U S Nagar | 1.5 | 1.4 | 1.5 | 1.5 | 0.1 | 0.1 | 4.0 | 3.96 |
| | Total | 3.5 | 3.4 | 2.5 | 2.5 | 2.3 | 2.3 | 14.8 | 14.5 |

Table: 22 JAMMU & KASHMIR District-wise Variety-wise Basmati Acreage (fig in 000 hc)

| S.No | District | 2017 2018 | | 2017 2018 | | 2017 2018 | | 2017 2018 | |
|------|--------------|-------------------|------------|------------|------------|-------------|-------------|---------------------------------------------|-----------|
| | | Pusa Basmati 1121 | | Pusa 1509 | | BASMATI 370 | | Total Basmati incl others basmati varieties | |
| 1 | Jammu | 1.4 | 1.4 | 0 | 0 | 47.2 | 47.9 | 48.6 | 49 |
| 2 | Kathua | 6.3 | 7.2 | 0.2 | 0.2 | 3.8 | 3.8 | 10.2 | 11 |
| 3 | Samba | 0.6 | 0.6 | 0.1 | 0.1 | 2.1 | 2.2 | 2.7 | 3 |
| | Total | 8.2 | 9.3 | 0.3 | 0.3 | 53.1 | 53.9 | 61.5 | 63 |

Table: 23 HIMACHAL PRADESH District-wise Variety-wise Basmati Acreage (fig in 000 hc)

| S.No | District | 2017 2018 | | 2017 2018 | | 2017 2018 | | 2017 2018 | |
|------|--------------|-------------------|-------------|------------|------------|--------------------------|----------|---------------------------------------------|-------------|
| | | Pusa Basmati 1121 | | Pusa 1509 | | Others Basmati Varieties | | Total Basmati incl others basmati varieties | |
| 1 | Kangra* | 1.92 | 1.92 | 1.0 | 1.1 | 0 | 0 | 2.9 | 3.0 |
| 2 | Mandi* | | 0 | 4.1 | 4.1 | 0 | 0 | 4.1 | 4.08 |
| | Total | 1.92 | 1.92 | 5.1 | 5.2 | 0 | 0 | 7 | 7.08 |

Chapter 7

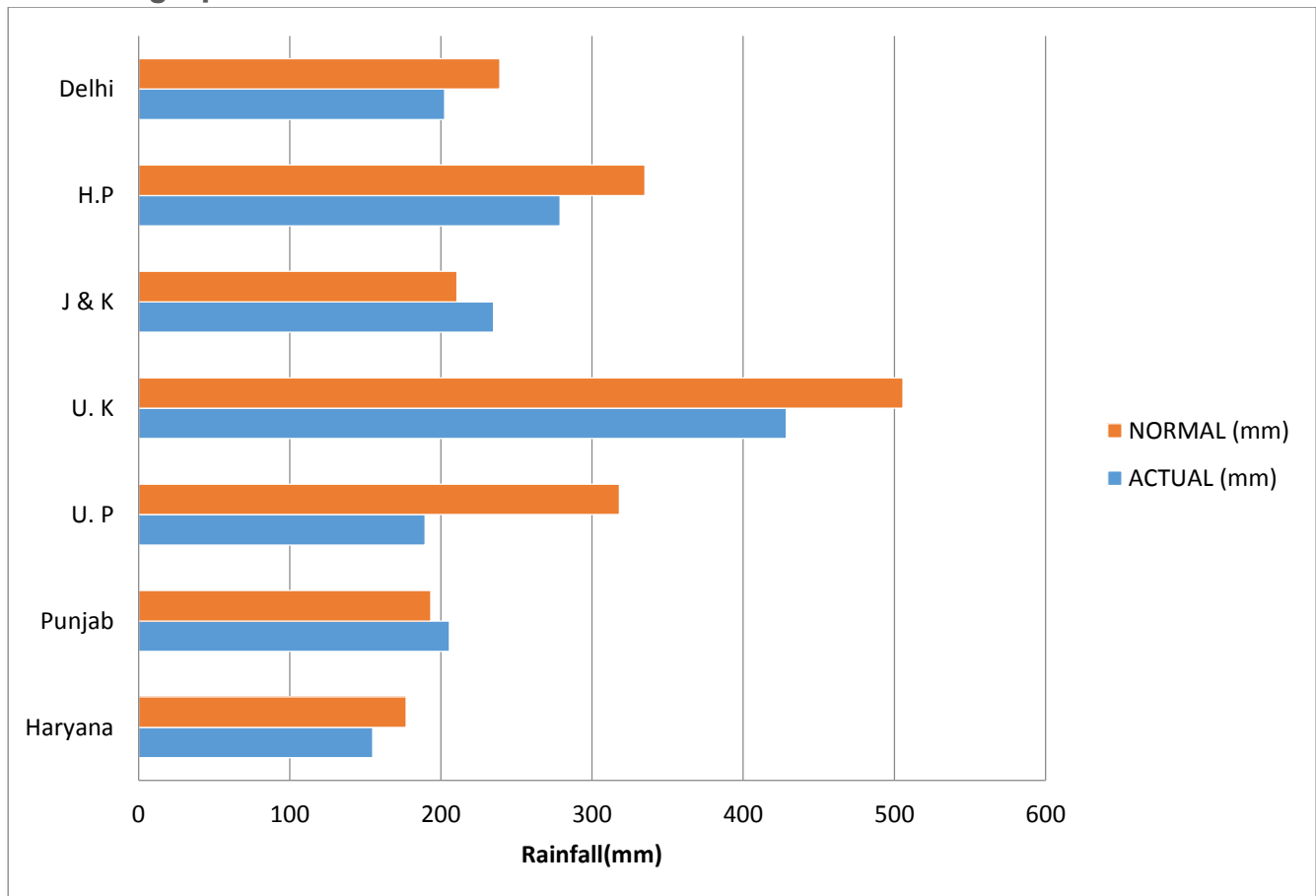
Rainfall

The Basmati growing belt has witnessed normal to deficient rainfall in the months of June and July this year in the states of Punjab, Haryana and Western U.P. But transplanting has been timely due to good distribution of rainfall in the districts.

Table: 24 Rainfall across various states Normal Vs Actual(01-06-2018:25-07-2018)

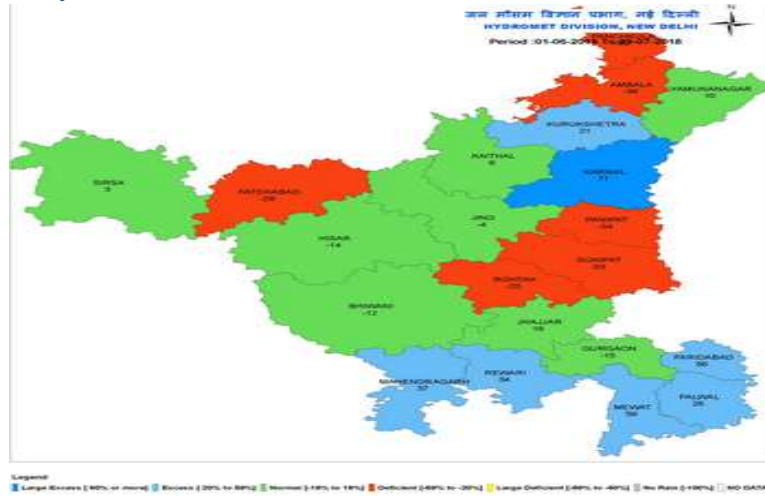
| DISTRICS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|----------|-------------|-------------|-------------|
| Haryana | 154.9 | 177 | -12.5% |
| Punjab | 205.7 | 193.3 | 6.4% |
| U. P | 189.5 | 318.2 | -40.4% |
| U. K | 428.4 | 505.6 | -15.3% |
| J & K | 234.9 | 210.6 | 11.5% |
| H.P | 278.9 | 335.1 | -16.8% |
| Delhi | 202.5 | 239 | -15.3% |

Rain fall graph



Rainfall of the area, Maps

Haryana



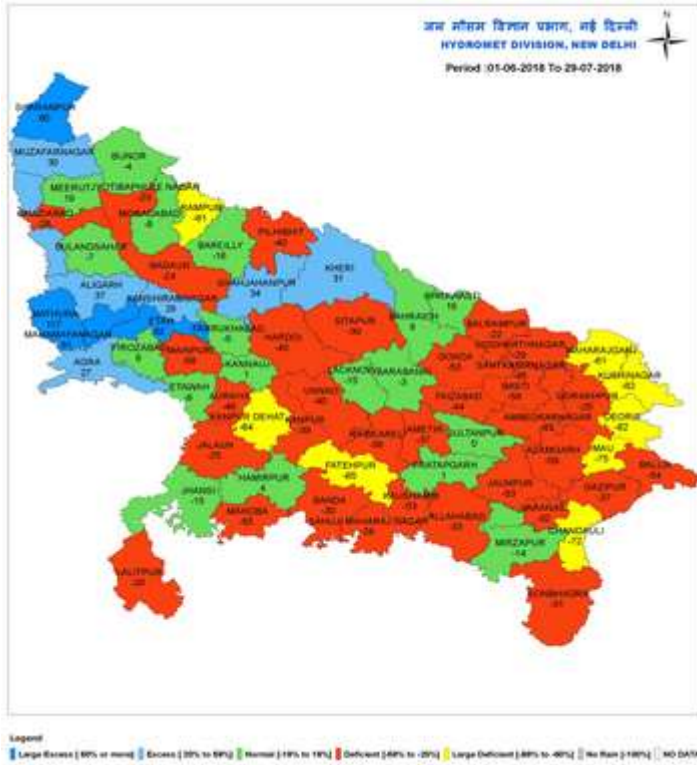
| DISTRICTS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|--------------------|--------------|-------------|-------------|
| Ambala | 193.3 | 353.9 | -45% |
| Bhiwani | 112.1 | 132.6 | -15% |
| Faridabad | 147.3 | 202 | -27% |
| Fatehabad | 82.6 | 116.3 | -29% |
| Gurgaon | 119.3 | 175.8 | -32% |
| Hisar | 111.9 | 131.1 | -15% |
| Jhajjar | 163.4 | 161.8 | 1% |
| Jind | 141.7 | 162.5 | -13% |
| Kaithal | 172 | 146.2 | 18% |
| Karnal | 282.7 | 225.8 | 25% |
| Kurukshetra | 217.2 | 234.1 | -7% |
| Mahendragarh | 247.1 | 168.9 | 46% |
| Mewat | 252.6 | 175.7 | 44% |
| Palwal | 120.8 | 157.9 | -23% |
| Panchkula | 153.5 | 363.5 | -58% |
| Panipat | 66.5 | 201.4 | -67% |
| Rewari | 210.8 | 155.7 | 35% |
| Rohtak | 146.5 | 208.9 | -30% |
| Sirsa | 115.1 | 102.2 | 13% |
| Sonipat | 101.3 | 198.5 | -49% |
| Yamunanagar | 304.9 | 360.7 | -15% |
| Total State | 154.9 | 177 | -12% |

Punjab



| DISTRICTS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|--------------------|--------------|--------------|-------------|
| AMRITSAR | 151.6 | 211.7 | -28% |
| BARNALA | 182.5 | 135.8 | 34% |
| BATHINDA | 106.5 | 123.1 | -13% |
| FARIDKOT | 195.4 | 131.8 | 48% |
| FATEHGARH SAHIB | 278.6 | 218 | 28% |
| FIROZPUR | 54.8 | 134.4 | -59% |
| GURDASPUR | 306.8 | 310.3 | -1% |
| HOSHIARPUR | 287.8 | 292.6 | -2% |
| JALANDHAR | 34.8 | 53.6 | -35% |
| KAPURTHALA | 4.8 | 46.5 | -90% |
| LUDHIANA | 26.2 | 45 | -42% |
| MANSA | 12.3 | 29.4 | -58% |
| MOGA | 46.3 | 28.7 | 61% |
| MUKTSAR | 19.5 | 27.8 | -30% |
| NAWASHAHR | 49.5 | 69.8 | -29% |
| PATIALA | 30.7 | 46.6 | -34% |
| RUPNAGAR | 30.2 | 68.5 | -56% |
| SANGRUR | 41.2 | 36.6 | 13% |
| SAS NAGAR | 124 | 51.1 | 143% |
| TARN TARAN | 6.5 | 38.6 | -83% |
| Total State | 205.7 | 193.3 | 6% |

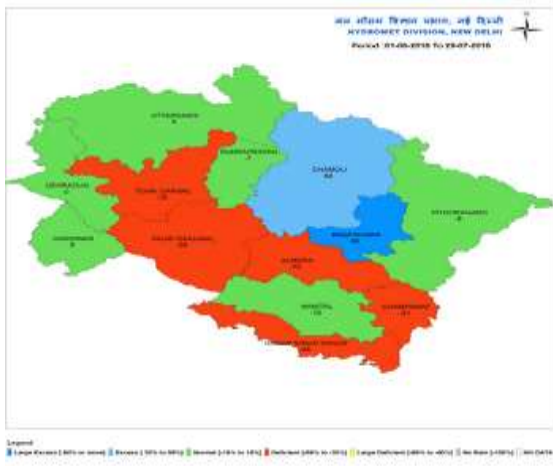
Uttar Pradesh



| DISTRICT | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|--------------------|-------------|-------------|-------------|
| AGRA | 185.9 | 233 | -20% |
| ALIGARH | 214.7 | 217.4 | -1% |
| AURAIYA | 66.5 | 238.8 | -72% |
| BADAUN | 130.2 | 258.3 | -50% |
| BAGHPAT | 170.1 | 200.5 | -15% |
| BAREILLY | 177.4 | 323.3 | -45% |
| BIJNOR | 226 | 356.1 | -37% |
| BULANDSAHAR | 162.2 | 226.6 | -28% |
| ETAH | 218.7 | 213.6 | 2% |
| ETAWAH | 75 | 233.2 | -68% |
| FIROZABAD | 136.9 | 243.3 | -44% |
| GAUTAMBUDHNAGAR | 119 | 189.2 | -37% |
| GHAZIABAD | 93 | 214.6 | -57% |
| HAMIRPUR | 214.8 | 273.3 | -21% |
| JALAUN | 92.8 | 257.9 | -64% |
| JHANSI | 227.5 | 300.1 | -24% |
| JYOTIBAPHULE NAGAR | 165.5 | 279.2 | -41% |
| KANSHIRAMNAGAR | 78.3 | 229 | -66% |
| LALITPUR | 209.5 | 344.5 | -39% |
| MAHAMAYANAGAR | 309.5 | 216.7 | 43% |
| MAHOBA | 111.8 | 257.1 | -57% |

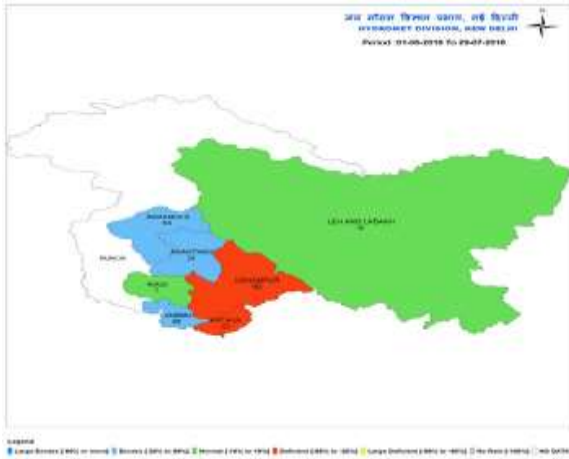
| | | | |
|--------------|-------|-------|------|
| MAINPURI | 32.2 | 230.1 | -86% |
| MATHURA | 239.7 | 195.5 | 23% |
| MEERUT | 152.3 | 271.2 | -44% |
| MORADABAD | 152.7 | 314.3 | -51% |
| MUZAFARNAGAR | 204.9 | 278 | -26% |
| PILHIBHIT | 175.1 | 366.6 | -52% |
| RAMPUR | 90.9 | 363 | -75% |
| SHAHJAHANPUR | 371.2 | 328.7 | 13% |
| SHARANPUR | 281.6 | 319.5 | -12% |

Uttarakhand



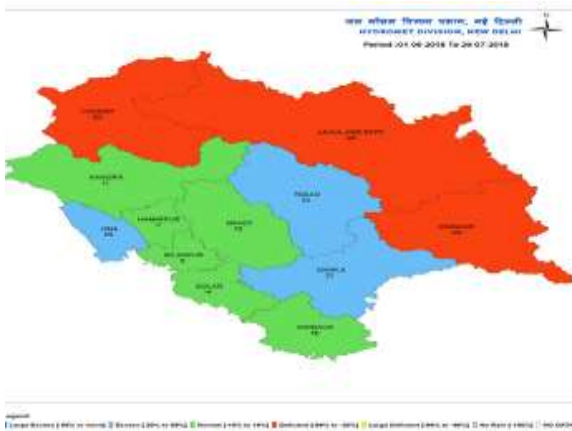
| DISTRICTS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|-------------------|-------------|-------------|-------------|
| Almora | 154.9 | 371.5 | -58% |
| Bageshwar | 617.5 | 371.5 | 66% |
| Chamoli | 520.8 | 342.8 | 52% |
| Champawat | 463 | 588.9 | -21% |
| Dehradun | 602.2 | 726.4 | -17% |
| Haridwar | 260.4 | 358.3 | -27% |
| Nanital | 470.2 | 615.7 | -24% |
| Pauri garhwal | 165.9 | 477.7 | -65% |
| Pithoragarh | 698.8 | 731.9 | -5% |
| Rudraprayag | 598.4 | 663.4 | -10% |
| Tehri garwal | 247.8 | 425.2 | -42% |
| Udham singh nagar | 250.2 | 464.9 | -46% |
| Uttarkashi | 383.9 | 451.2 | -15% |
| Total State | 1083.4 | 1123.2 | -4% |

Jammu & Kashmir



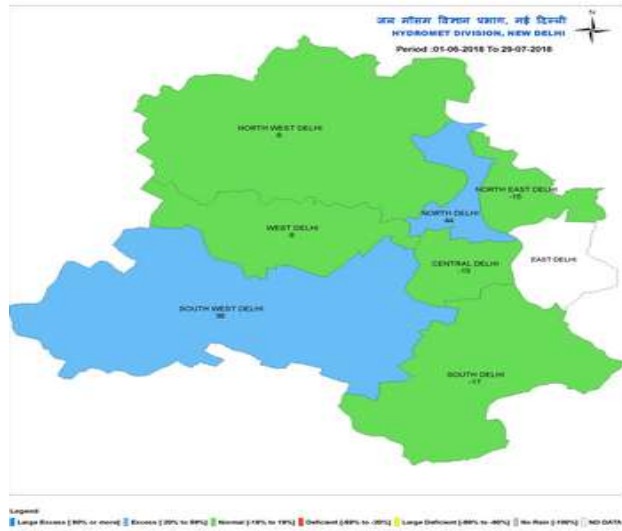
| DISTRICTS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|--------------------|--------------|--------------|-------------|
| Jammu | 429.4 | 325.7 | 32% |
| Kathua | 310.4 | 365.5 | -15% |
| Samba | 177.8 | 325.7 | -45% |
| Total State | 234.9 | 210.6 | 12% |

Himachal Pradesh



| DISTRICTS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|--------------------|--------------|--------------|-------------|
| Bilaspur | 307.1 | 345.7 | -11% |
| Kangra | 623.4 | 592.9 | 5% |
| Kinnaur | 50.8 | 96.7 | -47% |
| Kullu | 241.8 | 228.2 | 6% |
| Mandi | 87.9 | 181 | -51% |
| Shimla | 466.2 | 471 | -1% |
| Sirmaur | 279.4 | 286.6 | -3% |
| Solan | 467.6 | 542.7 | -14% |
| Total State | 416.8 | 345.5 | 21% |

Delhi



| DISTRICTS | ACTUAL (mm) | NORMAL (mm) | % Deficient |
|------------------|-------------|-------------|-------------|
| Central Delhi | 163 | 239 | -32% |
| New Delhi | 148 | 239 | -38% |
| North Delhi | 223 | 239 | -7% |
| North East Delhi | 322.6 | 239 | 35% |
| North West Delhi | 148 | 239 | -38% |
| South Delhi | 176.5 | 239 | -26% |
| South West Delhi | 173.1 | 239 | -28% |
| West Delhi | 258.1 | 239 | 8% |
| Total State | 166 | 239 | -31% |

Methodology

- We have done the complete study based on field based survey
- We have deputed the field teams in targeted 7 states which conducted the farmer interviews in around 78 districts of total 81 districts
- We have done questionnaires' based farmer survey and taken farmers pictures along with actual survey days newspapers. We tagged the farmer pictures through geo-tagging wherever possible by the field team
- To vet the complete study, we have also taken assistance from satellite images and tele-calling so that complete perspective can be taken into considerations while arriving the results of the study
- To further validate the results, we have also taken the last year's figures from the previous reports, so that survey results error has to be minimized and actual figures can be achieved in the study

Way Forward

- Survey teams will be continuously in the field throughout the survey and report on crop progress, so that subsequent reports will be presented in the more meaningful & timely manner
- Next report will be presented during first week of Sept, which will actually highlight the crop acreage/ yields / crop health / crop progress / monsoon impact / and any deviation from the previous report if it is highlighted from the field
- We will also try to highlight the crop arrival pace / prices and quality of rice which is coming in the different studied markets
- During the survey we will highlight any important crop updates which may impact on the overall crop progress

Data Source

- All figures based on farmer interview and feedback for current year
- Last year dataset from previously submitted reports
- Prices are taken from independent price pooling exercise from last April 2018 onwards
- Monsoon data was collected from IMD & other meteorological departments

Note: certain tables and figures will not match as figures are rounded off to adjust in report. Wherever we mentioned zero figures, it means negligible or very less acreage is present.



**Basmati Export Development Foundation
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**Prepared by
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