Kharif 2017

REPORT - 6

18th Dec 2017

Basmati Acreage & Yield Estimation in Punjab, Haryana, Delhi, Uttarakhand, Himachal Pradesh, Western Uttar Pradesh and Parts of Jammu & Kashmir

Basmati Export Development Foundation
APEDA, New Delhi

Basmati Survey – Final Report - 6 (Season 2017)

This is the final report for Basmati crop across 7 states totalling 81 districts. Detailed microscopic level information on Basmati crop has been compiled in this report. The report gives a holistic overview of the entire scenario of Basmati farm level detailing like cost of cultivation/ agro-inputs used/ basmati crop package of practice/ weather details/ crop acreage / yield / production level / mandi arrivals / price trends etc. All the detailing has been analysed on block-level/ district level / state level so that microscopic view can be analysed and presented on overall Basmati crop.
It might be possible that most of the report parts have already been covered in the previous reports but complied in this final report so that overall review for the Basmati crop situation during Kharif 2017 can be referred from this report only

Geotrans Technologies Pvt. Ltd.

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Chapter 1

Executive Summary

Kharif Rice Acreage

This year the total rice transplanted area has decreased in area by 2.6% i.e. from 5,996,500 ha to 5,8343,800 ha in the studied area of 7 states and 81 districts, while the production of paddy in the studied area has decreased by 1.8%. This year yield reported across major varieties in studied area of rice were higher and it compensated the overall loss in the crop.

	Paddy acreage (000' ha)					Paddy production (000' tons)				
States	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
Haryana	1,199	1,138	1,174	1,303	1,274	4,000	4,006	4,176	7,753	7,655
Punjab	2,784	2,794	2,820	3,010	2,892	11,270	11,107	11,637	9,030	8,762
U. P	1,576	1,573	1,316	1,343	1,336	4,330	6,434	5,704	5,539	5,454
U. K	269	130	123	129	131	581	604	630	548	551
J & K	95	142	139	139	139	400	517	416	130	128
H. P	78	56	56	60	61	126	125	99	69	72
Delhi	6	10	11	13	11	12	20	21	22	19
Total	**6,007**	**5,843**	**5,639**	**5,997**	**5,843**	**20,720**	**22,813**	**22,683**	**23,091**	**22,640**

Basmati Acreage and Production

The percentage area occupied by Basmati has reduced in major states of Haryana and Punjab by 9.4% & 8.7% respectively. In U.P. the area under Basmati has decreased by 3.91%. Overall the Basmati area has decreased by 7.84% in comparison to last year i.e. 2016.

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.

	Basmati acreage (000' ha)					Basmati production (000' tons)				
States	**2013**	**2014**	**2015**	**2016**	**2017**	**2013**	**2014**	**2015**	**2016**	**2017**
Haryana	711	833	833	720	652	2,899	3,702	3,243	2,796	2,534
Punjab	590	858	864	615	562	2,293	3,499	3,541	2,337	2,142
U. P	319	354	340	266	256	1,270	1,261	1,067	817	763
U. K	18	20	16	16	15	54	66	46	42	39
J & K	37	69	63	62	62	144	241	152	134	132
H. P	1	1	2	7	7	3	2	7	30	30
Delhi	1	1	1	1	1	4	3	3	3	3
Total	**1,678**	**2,135**	**2,119**	**1,687**	**1,554**	**6,667**	**8,774**	**8,058**	**6,159**	**5,643**

Long Grain Non-Basmati Acreage

The acreage under long grain non-basmati varieties (Sharbati and Sugandha) in these targeted 81 districts has increased by 5.33%.

This year Sharbati is the clear preference of the farmers not only over basmati but also over high yielding HYV varieties in Western & Central part of UP / Punjab & Haryana. Primarily, this acreage shift towards Sharbati is not only due to lesser price differential between basmati & non-basmati varieties but also its high yields / lesser susceptibility towards diseases / high demand / lesser cost of cultivation etc in past years

States	Sharbati acreage (000' ha)					Sharbati production (000' tons)				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
Haryana	39.1	38.4	2.7	5.8	6.0	160.0	161.0	10.0	20.5	21.3
Punjab	18.8	5.8	5.0	5.8	5.9	64.0	22.0	21.0	21.8	22.2
U. P	265.7	293.7	244.0	163.9	173.6	1119.0	1121.0	472.0	509.8	528.2
U. K	36.0	12.0	16.1	14.6	15.0	142.0	46.0	53.0	49.2	49.7
J & K	1.9	0.2	9.4	10.0	10.2	6.0	1.0	34.0	35.6	35.9
Total				199.0	210.6				636.8	657.3

Sugandha, which is primarily complimenting PB-1121 but its acreage is same over 3-4 years. Sugandha acreage is about 92,200 ha.in current year. The presence of Sharbati and Sugandha is negligible in Himachal Pradesh and Delhi as compared to other states.

State Wise price range offered on different varieties in Primary markets

Across 7 studied states, basmati crop harvesting/ majority of crop arrival in markets have been completed on time i.e. late Nov/ Early Dec. However, secondary market buying is still going on in full pace. Mandi traders are releasing the stocks as per the market and millers demand. This year farmers are quite happy with the current price offered across different mandis while few farmers are expecting that price range could further go up in coming months. This year farmer prices are about 35-40% up as compared to last year in across all studied states. These sentiments are positive signal for next year (2018-19) on overall farmers intention on basmati acreage which has been dipping from last two consecutive years (2016-17 and 2017-18).

Avg. Mandi Price Range during month of Nov- Dec period (INR/ Qtl)
Basmati & Non-Basmati (Long Grain Rice)

State/ Varieties	Punjab	Haryana	Uttar Pradesh	Uttaranchal	J&K
Pusa Basmati 1121	3250-3300	3250-3300	3000-3150	2800-3100	3100-3200
Pusa Basmati 1509	2850-2950	2850-2950	2750-2900	2600-2800	2850-2950
Pusa Basmati 1	2900-3000	2900-3000	2800-2950	2650-2800	-
CSR 30	3800-4000	3800-4000	-	-	-
Pusa Basmati-1401	2700-2800	2700-2800	-	-	-
Basmati-370/386/Ranbir	-	-	2600-2800	2600-2800	2875-2950
Sharbati	2100-2200	2100-2200	2000-2100	2050-2100	-
Sugandha	2300-2400	2300-2400	2200-2350	2150-2300	-

All India Exports of Basmati Rice from India from (April 2012-Oct 2017)

This year from April to Oct, 2017 export of Basmati is about 2.5% higher than same period last year. Despite of the lower Basmati crop size, exporters are anticipating similar volumes of exports for this season too.

Months	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
	Qty in Tons					
April	2,78,797	3,92,799	2,85,108	3,48,565	3,36,769	3,89,406
May	3,22,913	3,45,188	3,37,150	4,31,895	4,12,769	4,06,253
June	3,46,910	3,78,786	3,64,636	3,51,894	4,36,780	4,59,334
July	2,99,985	3,33,990	2,33,774	2,76,219	3,63,185	2,99,339
August	2,48,884	2,75,844	2,17,355	2,70,100	2,25,776	2,86,514
Sept	2,30,425	2,06,876	2,03,733	4,05,980	2,91,636	2,85,853
Oct	1,93,703	1,80,191	2,95,146	3,04,647	2,37,108	234077
Nov	2,07,964	2,52,292	2,98,274	3,01,920	2,75,149	-
Dec	2,86,546	3,76,614	3,82,720	3,78,714	3,43,848	-
Jan	3,18,083	3,45,687	3,50,320	3,47,789	3,28,677	-
Feb	3,35,395	3,50,092	3,79,888	2,87,501	3,39,748	-
March	3,87,474	3,19,005	4,00,195	3,25,944	3,92,731	-
Total	34,57,079	37,57,364	37,48,299	40,31,168	39,84,176	23,60,776

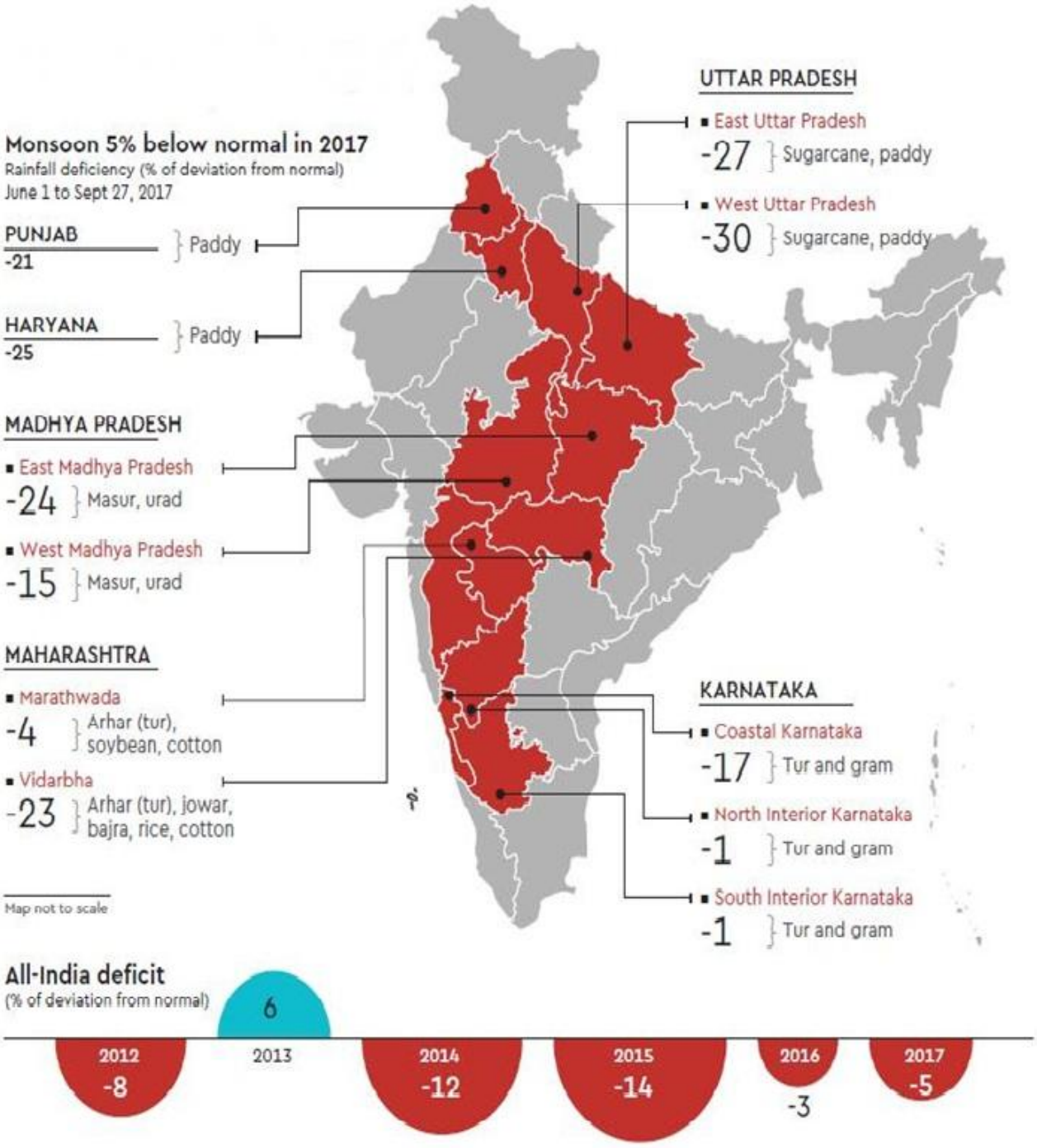
Rainfall

The Basmati growing belt had witnessed normal to deficient rainfall in the months from June,2017 to Sep, 2017 this year in the states of Punjab, Haryana, Western U.P, J&K, HP and Delhi. But transplanting has been done timely due to good distribution & timely onset of rainfall in the districts. The rainfall during 01-06-2017 to 30 -09-2017 in meteorological divisions under study area is given in below table. As Basmati is primarily taken on irrigated land so no major impact has been seen on lower rainfall in the studied area.

Stats in Major states (Haryana, Punjab, U.P, U.K, J & K, H.P, Delhi)

States	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
Haryana	341.9	459.8	-25%	Deficient
Punjab	384.9	491.9	-21%	Deficient
Uttar Pradesh	602.5	846.1	-29%	Deficient
Uttarakhand	1199	1229.1	-2%	Normal
J & K	545.4	534.6	2%	Normal
HP	720.7	825.3	-13%	Normal
Delhi	442.6	636.2	-30%	Deficient

Monsoon map depicting % of deviation from normal



Chapter 2

State Wise Transplanted Area and Production

Rice, Basmati & Non-Basmati Long Grain Rice Area during Kharif 2017

In Haryana, the total rice acreage based on field survey has been estimated at 1,273,750 ha in 20 districts. Karnal district has the highest transplanted area under rice (1,59,700 ha), followed by Kaithal district (1,57,700hac). Overall Basmati area has reduced by 9.4% in comparison to last year.

In Uttar Pradesh (in the studied districts only), timely onset of monsoon, rice transplanting started on time and continued in full sowing during July. A total of 13,36,190 ha. rice acreage based on field survey was transplanted in the 27 districts of the state. Shahjahanpur district has the largest total rice area (1,97,051 ha), followed by Pilibhit (1,52,500 ha) and in districts like Muzaffarnagar, Bagpat, Meerut, many farmers have sown sugarcane replacing Basmati speculating higher sugarcane state advised prices from the state Govt and good sugarcane payment release by sugar mills.

In Uttarakhand, a total of 130,700 ha rice acreage has been transplanted in the 4 districts. Udham Singh Nagar district has the largest area under rice (99,300 ha). This year overall basmati crop has been reduced to 5%across state while in certain major districts basmati acreage has been reduced upto the level of 9%.

In Jammu & Kashmir, three districts have been taken up for the study. The total rice area is estimated to be 139,000 ha in these districts. Jammu & Samba have an area of 97,000 ha and Kathua only 42,000 ha The state has received excess rainfall this year. Area under basmati & rice is almost intact as farmer have lesser choice and variety like Ranbir which pays well to farmers in recent past and has constant demand in market

In Himachal Pradesh, a total of 60,800 ha rice acreage based on field survey has been estimated as transplanted in 11 districts. Basmati is grown in Kangra and Mandi districts only. The farmers opted Permal varieties including PR-123 in the increased paddy area and the area under Pusa-Basmati 1509.

State Wise Transplanted Area,
Basmati & Non-Basmati Long Grain Rice Area during Kharif 2017 (in 000hac)

S. No	State	Total Basmati	Pusa-1121	PB-1	Pusa-1509	Pusa-1401	Basmati 370	CSR-30	Type-3 & Others	Non-Notified	
										Sharbati	Sugandha
1	Haryana	652.05	443.5	41.4	30	44.1		93.0		6.03	
2	Punjab	568.8	500.1	23.05	39.5					5.9	
3	Uttar Pradesh	255.75	144.13	42.84	55.95				12.84	173.56	91.72
4	Uttarakhand	14.79	3.53	2.27	2.53				6.44	14.97	0.49
5	Jammu & Kashmir	62	8				53			10.1	
6	Himachal Pradesh	7	2		5					0	
7	Delhi										
Total		**1560.39**	**1101.26**	**109.56**	**132.98**	**44.1**	**53**	**93.**	**19.28**	**210.56**	**92.21**

The various interactions with farmers/ secondary market players and experts field visits suggests that this year about 56.4 lakh tons of basmati production is expected against 61.53 lakh tons production on last year. In 2017-18, it has seen that about 7.84 % dip in overall acreage of basmati crop while their yield levels are either similar as of last year in states like Punjab / Haryana / J&K / HP but observed a dip in yield level in the

states like UP / Uttaranchal / Delhi over last year, which brought the overall basmati production down to almost 8.3% in the current year.

State Wise initial estimated production of
Basmati & Non-Basmati long grain Rice during Kharif 2017(production in 000 tons)

S. No	State	Total Basmati	Pusa-1121	PB-1	Pusa-1509	Pusa-1401	Basmati 370	CSR-30	Type-3 & Others	Non-Notified	
										Sharbati	Sugandha
1	Haryana	2535	1611.6	223	147.9	272.5		278.9		21.2	
2	Punjab	2142.2	1842.3	110.2	192.9					22.2	
3	Uttar Pradesh	763.2	403.2	133	206.3				20.7	528.24	308.8
4	Uttarakhand	39.05	9.12	7.62	10.1				12.22	49.73	1.93
5	Jammu & Kashmir	132	25		1		106			35.9	
6	Himachal Pradesh	30	7		22					0	
Total		5641	3898	474	580	273	106	279	33	657	311

In the current season PB 1121acreage in the 7 states have been reduced by 10.6% over last year. Farmer preferred high yielding Pusa-1509 in place of low yielding PB-1121. Moreover PB 1509 also has shorter time period and early maturity trait if compared with PB 1121. Basmati crop cutting experiment shows that PB 1121 yields were intact in Haryana and Punjab while some crop damage reported in UP / UK but over this year lesser pest infestation observed in the fields. Timely application on remedial action by farmers on brown plant hopper & White bagged plant hopper reduces the crop losses. This year farmers harvested about 39-40 lakh tons of PB 1121 against the 43-44 lakh tons of harvest happened last year.

State wise Acreages (000 ha.) & Production (000 tons) of Pusa-basmati 1121

S. No	State	2016	2017	2016	2017
		Pusa 1121 Area		Pusa 1121 Production	
1	Haryana	504.9	443.5	1842.1	1611.62
2	Punjab	555.8	500.1	2047.6	1842.3
3	Uttar Pradesh	156.3	144.13	451.7	403.2
4	Uttarakhand	4.2	3.53	11.3	9.12
5	J & K	8.4	8.2	25.7	25.1
6	Himachal Pradesh	2	1.9	7.6	7.2
7	Delhi				
	Total	1231.6	1101.36	4386	3898.54

The lesser price differential between Pusa 1121 & Pusa 1509 prompted farmer to shift varietal acreage in kharif 2017. Farmer preferred high yielding Pusa-1509 in place of low yielding PB-1121 also on account of its shorter time period and early maturity trait. PB 1509 crop cutting experiment results were shown similar yields in Haryana & Punjab as that of last year while UP / UK saw some crop damage on account of 23rd - 24th Sep,2017 rainfall which is 500% more than normal rainfall in most of the districts (in these two days). Overall PB 1509 yields were little bit on positive side as compare to last year, basis the current crop conditions this year Pusa-1509 acreage increased by 8.61%, clearly indicates that farmer replaced PB 1121 with Pusa -1509

This year farmers harvested around 5.8 lakh tons of PB 1509 which could be around 7.7% higher than last year.

State wise Acreages (000 ha.) & Production (000 tons) of Pusa-basmati 1509

S. No	State	2016	2017	2016	2017
		Pusa 1509 Area		Pusa 1509 Production	
1	Haryana	26.2	30	130.1	147.94
2	Punjab	35.2	39.5	171.9	192.9
3	Uttar Pradesh	55	56	204.1	206.3
4	Uttarakhand	2.5	2.53	10.1	10.1
5	J & K	0.3	0.3	1.1	1.1
6	Himachal Pradesh	5	5.1	22.1	22.3
7	Delhi				
	Total	122.8	132.4	539.4	580.64

Pusa basmati – 1 is continuously reducing in acreage over years and now is only preferred by farmers who take it for their self-consumption, however PB -1 still has good market potential in Europe & Saudi Arabia. Overall PB-1 acreage has been reduced by 4% and production came down to 6% over last year.

State wise Acreages (000 ha.) & Production (000 tons) of Pusa-basmati 1

S. No	State	2016	2017	2016	2017
		PB -1 Area		PB -1 Production	
1	Haryana	44.3	41.4	239.6	223.0
2	Punjab	24.3	23.05	116.1	110.2
3	Uttar Pradesh	43.3	42.8	139.1	133
4	Uttarakhand	2.3	2.3	8.0	7.7
	Total	**114.2**	**109.7**	**502.7**	**473.8**

The acreage under long grain non-basmati varieties (Sharbati and Sugandha) in these targeted districts has increased by 3.96%.

This year Sharbati is the clear preference by the farmers not only over basmati varieties but also over high yielding HYV varieties in Western & Central part of UP / Punjab & Haryana. Primarily this acreage shift towards Sharbati is not only due to lesser price differential between basmati & non-basmati varieties but also its high yields / lesser susceptibility towards diseases / high demand / lesser cost of cultivation etc

This year farmers harvested around 6.6 lakh tons of Sharbati which could be around 3-4% higher than last year.

State wise Acreages (000 ha.) & Production (000 tons) of Long Grain Non-Basmati(Sharbati)

S. No	State	2016	2017	2016	2017*
		Sharbati Area		Sharbati Production	
1	Haryana	5.75	6.03	20.47	21.25
2	Punjab	5.75	5.90	21.82	22.16
3	Uttar Pradesh	163.92	173.56	509.75	528.24
4	Uttarakhand	14.57	14.97	49.20	49.73
5	J & K	9.95	10.15	35.55	35.90
	Total	**199.94**	**210.60**	**636.79**	**657.29**

Sugandha, which is primarily complimenting PB-1121 has been not changed much. Usually Sugandha is not preferred by farmers as independent choice as long grain rice but grown for complimenting the PB 1121 variety

This year farmers harvested around 3.1 lakh tons of Sugandha which could be around similar levels of last year.

State wise Acreages (000 ha.) & Production (000 tons) of Long Grain Non-Basmati(Sugandha)

					Area (in 000 Ha.)
S. No	**State**	**2016**	**2017**	**2016**	**2017***
		Sugandha Area		**Sugandha Production**	
1	Uttar Pradesh	90.9	91.7	310.4	308.8
2	Uttarakhand	0.5	0.5	2.0	1.9
Total		**91.4**	**92.2**	**312.4**	**310.7**

Chapter 3

State Wise details

Haryana

In Haryana, the total rice acreage based on field survey has been at1,273,750 ha in 20 districts Karnal district has the highest target area under total rice (1,59,700 ha), followed by Kaithal district (1,57,707 ha). The transplanting almost completed on time in the state. Basmati area has reduced by 9.4% in comparison to last year.

Table: 6 Basmati & Rice acreages in Haryana Kharif 2017

	Total Rice Acreage			Total Basmati Acreage		
District	2016	2017	% change over LY	2016	2017	% change over LY
	Acreage (000 ha.)			Acreage (000 ha.)		
Ambala	82	79.95	-3%	16.88	15.406	-9%
Bhiwani	21.7	20.9405	-4%	22.05	18.7425	-15%
Faridabad + Palwal	33.3	32.4675	-3%	28.78	25.514	-11%
Fatehabad	113	107.915	-5%	2.6	2.23	-14%
Gurgaon	4.9	4.7285	-4%	49.71	44.7435	-10%
Hisar	64.4	61.502	-5%	44.8	38.4355	-14%
Jajjhar	43.6	42.51	-3%	43.6	38.6353	-11%
Jind	130	126.75	-3%	81.2	70.598	-13%
Kaithal	158.5	157.7075	-1%	64.58	60.929	-6%
Karnal	160.5	159.6975	-1%	78.59	74.9659	-5%
Kurukshetra	120	118.2	-2%	30.77	29.062	-6%
Mewat	8	7.88	-2%	7.5	6.6	-12%
MahendraGarh		0		0	0	
Panchkula	9.5	9.2625	-3%	0	0	
Panipat	72	70.92	-2%	68.11	63.4542	-7%
Rewari	1.8	1.737	-4%	1.2	1.056	-12%
Rohtak	44	42.02	-5%	36.27	30.848	-15%
Sirsa	74.4	71.052	-5%	60.6	56.977	-6%
Sonepat	90	88.65	-2%	73.48	65.1949	-11%
Yamunanagar	71.5	69.8555	-2%	9.01	8.6544	-4%
TOTAL HARYANA	1303.1	1273.746	-2%	719.73	652.0462	-9%

Basmati Rice is cultivated under assured irrigation. Irrigation is mainly through Tube- wells (70%) and Canals (30%). Soils are generally loam to clay loam. Rice-wheat is the major cropping pattern. However, in some areas of high productivity, three crops per year is also being followed i.e. Rice-Potato-Potato; Rice-Toria-Wheat. Short duration varieties like Sharbati are cultivated in association with vegetable pea/potato barseem.

The contract farming in Basmati rice is not popular, (except for some organic rice area of Kaithal district), in any district of the study. Important districts where Basmati varieties grown are-

- Traditional varieties - Jind, Karnal, Kaithal, Kurukshetra, Sonepat and Ambala districts
- Pusa Basmati-1. - Jind, Panipat, Sirsa, Fatehabad, Yamunanagar, Kaithal, Karnal and Sonepat
- Pusa Basmati-1121 - Sonepat, Panipat, Jind, Hisar, Kaithal districts and some areas in Yamunanagar, Rohtak, Jajjhar and Faridabad districts.
- Sharbati - Karnal, Kaithal, Kurukshetra, Jind, Faridabad and Ambala districts.

Variety wise % Area & Production in year 2016 and 2017.

Sl. No.	Variety	% Basmati Area		% Basmati Production	
		2016	2017	2016	2017
1	Pusa Basmati-1121	70.16	68.02	65.89	**63.60**
2	Pusa Basmati-1509	3.64	4.60	4.65	**5.84**
3	CSR-30	13.61	14.27	10.52	**11.01**
4	Punjab Basmati-3	0.00	0.00	0.00	**0.00**
5	Pusa Basmati-1	6.16	6.35	8.57	**8.80**
6	**Pusa Basmati-1401**	**6.45**	**6.76**	**10.36**	**10.75**

Farmers generally sow their own seed (40%) or procure from private seed agencies (50%). The procurement from Govt. agencies i.e. Agricultural University/State Seed Corporation / NSC is only 10%. Farmers use less seed than recommended, which is 20 kg seed for sowing nursery for transplanting one ha field. In general, 10 kg seed is used by farmers per ha.

This year Nursery sowing of Sharbati and Pusa Basmati-1509 starts by the end of May, and of Pusa Basmati-1, Pusa Basmati-1121, and CSR-30 in the 1st week of June. Sharbati and Pusa Basmati-1509 transplanting starts in June, and of Pusa Basmati-1, Pusa Basmati-1121 and CSR-30 in July.

Pusa Basmati- 1121 has decreased almost 12.2% over the last year. The area under CSR-30 has also reduced by almost 4,900 ha. Under Pusa Basmati- 1509, almost 3,700 ha area has increases as comparison to last year.

District-wise acreage (000hac.) under total rice and Basmati rice in Haryana during Kharif 2017

District	Pusa Basmati 1121	Pusa 1509	PB -1	Pusa-1401	CSR-30	Sharbati
Ambala	6.2	0.1	0.2		8.8	0.1
Bhiwani	18.7	0.0	0.0			0.3
Faridabad + Palwal	22.1	0.2	3.2			0.3
Gurgaon	2.0	0.0	0.2			0.3
Fatehabad	23.3	1.5	12.0	7.0	1.0	0.1
Hisar	36.0	0.5	0.8		1.0	0.3
Jajjhar	37.3	1.1	0.0		0.3	0.3
Jind	55.3	2.2	7.4		5.7	0.3
Kaithal	34.3	3.4	0.1		23.2	0.3
Karnal	36.5	9.9	0.2		28.3	0.1
Kurukshetra	9.9	3.0	2.3		13.8	0.3
Mewat	6.6	0.0	0.0			0.3
MahendraGarh		0.0	0.0			0.3
Panchkula		0.0	0.0			0.3
Panipat	51.5	2.5	2.0		7.5	0.3
Rewari	1.1	0.0	0.0			0.3
Rohtak	30.7	0.1	0.0		0.1	1.1
Sirsa	10.1	3.4	6.1	37.1	0.3	0.5
Sonepat	61.0	1.4	0.0		2.8	0.3
Yamunanagar	0.7	0.7	6.9		0.4	0.3
TOTAL HARYANA	443.5	30.0	41.4	44.1	93.1	6.03

% change in acreage(000hac.) of Basmati & Non-Basmati varieties of rice in 2017 over 2016 in Haryana

S.no	Variety	Acreage 2016	Acreage 2017	% Change
1				***Basmati***
	Pusa Basmati-1121	504.88	443.5	-12.2%
	Pusa Basmati-1	44.3	41.40	-5.6%
	Pusa Basmati-1401	46.42	44.1	-5.0%
	Pusa Basmati-1509	26.18	30	15.0%
	CSR-30	97.95	93.07	-5.0%
2	***Non-Basmati Long Grain***			
	Sharbati	5.75	6.03	4.9%

Agri- input usage & farm practices

Weeds are controlled by herbicide application and also by manual weeding. Mostly used herbicides are Butachlor 50EC, Anilofos 30EC, and Pretilachlor 50 EC. Farmers use excessive nitrogen and ignore phosphate and potash. They mostly use urea for Nitrogen application. For short-statured Basmati varieties such as Pusa Basmati-1, Pusa 1121 and Sharbati, 185 kg. urea in three equal splits and for HBC 19, 125 kg urea in two split per ha is used. Most of the farmers use 65 kg of DAP for Phosphorus per ha as basal dose. Very few farmers use Muriate of Potash for Potassium at the rate of 50 to 60 kg. per ha. Almost all farmers use 25 kg. / ha of Zinc Sulphate to all paddy crops for supply of Zinc. Very few farmers areusing FYM and organic fertilizer, despite knowing the benefits of it over crop.

Major insect pests are Rice Stem Borer, Leaf Folder, White Plant Hopper and Brown plant hopper, but this year farmers planted on time hence escapes the attack of insect pest; thus requiring very less pesticide. Farmers generally use Buprofezin, Monocrotophos, Chlorpyriphos or granular Cartap Hydrochloride, Fipronil, etc. The most of the farmers apply Carbofuran to give green color to the crop irrespective of presence of Stem rot disease for which to control it is sprayed. Major diseases are Stem rot, Bacterial Leaf Blight (BLB), Sheath Blight, Blast and Foot- Rot. Pusa Basmati-1121 is susceptible to Foot Rot (bakanae) disease. BLB is controlled by the weather conditions (i.e. temperature) in Basmati.

Harvesting

Harvesting of Pusa Basmati-1509 and Sharbati starts in mid-September and of Pusa Basmati 1121 in end October to mid-November. The combine harvested Pusa Basmati-1121 crop fetch lesser price in comparison to manually harvested crop. No major losses on the yield has been seen on ground and farmers reported either similar yield levels or little higher across different varieties of Basmati. In Haryana, Crop Cutting Experiments has been conducted in 150 plots covering 14 districts. Based on CCE data, the range of productivity of different Basmati varieties has been found to be as follows:

District (tons / ha)	Pusa Basmati- 1121	Pusa Basmati- 1	CSR-30	Pusa Basmati-1509	Pusa Basmati-1401
Ambala	3.10	4.45	2.27	4.71	
Bhiwani	3.22				
Faridabad + Palwal	2.92	4.39		4.15	
Fatehabad	4.06	6.70	2.96	5.29	6.95
Hisar	3.96	4.93	2.71	5.64	
Jajjhar	3.27		2.43	4.16	
Jind	4.68	4.87	2.96	4.40	
Kaithal	3.76	5.63	2.96	5.20	

District (tons / ha)	Pusa Basmati- 1121	Pusa Basmati- 1	CSR-30	Pusa Basmati-1509	Pusa Basmati-1401
Karnal	4.16	4.68	3.02	4.97	
Kurukshetra	3.96	5.17	3.13	4.95	
Panipat	3.08	3.90	3.91	4.89	
Sirsa	4.95	5.04	2.69	5.87	6.11
Sonepat	3.22	0.00	3.28	4.16	
Yamunanagar	4.18	5.16	3.10	5.20	

In both the cases of Punjab & Haryana, yield levels are similar to last year. No major infestation has been reported as farmers were advanced their crop remedial practices before any insect/ pest attack. This year agro-climatic conditions were also conducive for overall crop growth.

Marketing:

Price of paddy varies due to the percentage of moisture in the grain and other quality parameters. During the current year,

State/ Varieties	Haryana (INR / Qtl)
Pusa Basmati 1121	3250-3300
Pusa Basmati 1509	2850-2950
Pusa Basmati 1	2900-3000
CSR 30	3800-4000
Pusa Basmati-1401	2700-2800
Basmati-370/386/Ranbir	
Sharbati	2100-2200
Sugandha	2300-2400

Haryana is a high productivity area and farmers are highly adaptive to new technology. Cost of cultivation is very high due to input cost and farmers use all means to get higher productivity.

Basmati Varieties	Cost of Cultivation (INR / ha)	Avg. yield (ton/ ha)	Avg. Prices (INR / ton)	Net Returns (INR/ha)	Profit (INR/ha)
Pusa Basmati 1121	53500	3.85	33500	128975	75475
Pusa Basmati 1509	48500	5	29500	147500	99000
Pusa Basmati 1	54500	5.4	30000	162000	107500
Basmati-370/386					
CSR 30	48500	3	40000	120000	71500
Punjab Basmati-3	59280				
Pusa Basmati-1401	54340	6.18	28000	173040	118700
Sharbati	37050	3.8	22500	85500	48450
Sugandha	39520				

District wise Production Details of Basmati & Long Grain Non- Notified Non-Basmati (Production in 000' tons)

District	Pusa Basmati 1121	Pusa 1509	PB -1	Pusa-1401	CSR-30	Sharbati
Ambala	17	0.6	1.1	-	20	0.4
Bhiwani	60	-	-	-	-	0.9

District	Pusa Basmati 1121	Pusa 1509	PB -1	Pusa-1401	CSR-30	Sharbati
Faridabad + Palwal	64	0.9	14	-	-	1.1
Gurgaon	6	-	0.7	-	-	0.9
Fatehabad	94	7.8	79.7	47.6	3	0.3
Hisar	141	2.9	4.1	-	3	0.9
Jajjhar	121	4.4	-	-	1	0.9
Jind	256	9.4	36	-	17	0.9
Kaithal	128	17.3	0.5	-	68	0.9
Karnal	150	48.8	1.1	-	85	0.4
Kurukshetra	39	14.8	12.1	-	43	1
Mewat	23	-	-	-	-	0.9
MahendraGarh	-	-	-	-	-	0.9
Panchkula	-	-	-	-	-	0.9
Panipat	157	12	7.7	-	29	1.3
Rewari	4	-	-	-	-	0.9
Rohtak	105	-	-	-	0	3.4
Sirsa	49	19.8	30.6	224.9	1	2
Sonepat	194	5.7	-	-	9	0.9
Yamunanagar	3	3.5	35.3	-	1	0.9
TOTAL HARYANA	1612	147.9	223	272.5	279	21.2

Expected changes for the next year:

- Current prices and farmer average return will bring back higher sentiments towards overall acreage under Basmati varieties for next season
- Farmers tend to take decision on selection of a variety, to be sown in the next coming season ,generally on the basis of total return from an acre, calculated simply by multiplying production and prevailing rates of paddy produce.
- Again, Pusa Basmati-1509 being a early maturing and High yielding variety will b farmer preference & bring more acreage in next season
- Overall acreage will be higher for next season

In Punjab, the rice transplanting has been 2,891,800 ha in 22 districts this year, which is about 3.93% lower than last year. Sangrur district has the largest area under rice (267,720 ha), followed by Ludhiana district (249,290hac). Farmer shifted in cotton crop due to its higher returns.

Table: 7 Basmati & Rice acreages in Punjab Kharif 2017

		Total rice acreage			Total basmati acreage		
S. No.	District	2016	2017	% Change LY	2016	2017	% Change LY
		Acreage in '000 ha			Acreage in '000 ha		
1	Amritsar	180	178	-1%	113.9	104	-8.7%
2	Barnala	110	107	-3%	2.6	2.3058	-9.6%
3	Bhatinda	160	149	-7%	11.3	9.5965	-15.0%
4	Faridkot	114	109	-4%	22.8	20.52	-10.0%
5	Fatehgarh Sahib	86	83	-4%	10.4	9.498	-9.0%
6	Fazilka	187	174	-7%	70.3	66.814	-5.0%
7	Firozepur	125	115	-8%	50.9	48.327	-5.0%
8	Gurdaspur	174	169	-3%	44.2	41.955	-5.0%
9	Pathankot	27	26	-3%	3.0	2.709	-10.0%
10	Hoshiarpur	65	62	-4%	7.3	6.579	-10.0%
11	Jalandhar	164	159	-3%	11.4	10.413	-8.9%
12	Kapurthala	118	116	-2%	8.5	7.686	-10.0%
13	Ludhiana	257	249	-3%	24.5	22.678	-7.5%
14	Mansa	99	91	-8%	1.0	0.85	-15.0%
15	Moga	182	175	-4%	20.1	18.057	-10.0%
16	Mohali	31	30	-4%	4.3	3.87	-10.0%
17	Muktsar	160	150	-6%	58.9	50.723	-13.9%
18	Nawanshahar	54	53	-1%	5.4	4.909	-9.3%
19	Patiala	230	221	-4%	21.6	19.757	-8.5%
20	Rupnagar	34	33	-4%	3.2	2.8358	-11.9%
21	Sangrur	276	268	-3%	36.6	31.987	-12.7%
22	Tarantaran	177	175	-1%	83.3	75.596	-9.2%
	Total	3010	2892	-3.93%	615.6	561.7	-8.3%

Rice in Punjab occupies more than 80- 82% of total cropped area during kharif. Basmati Rice is cultivated under assured irrigation and puddled, low land rice ecosystem. Soils are generally loam to clay loam with pH 7.5-8.9. Irrigation is mainly through Tube-wells (78 - 80%) and Canals (20 - 22%).

Rice-wheat is the major cropping pattern. However, in some areas three crops per year is also being followed; i.e. Rice-Potato- Potato; Rice-Potato-Sathi Maize/Summer Moong/Sunflower/Celery; Rice-Toria-Wheat; Rice-Barseem fodder.

Prominent varieties grown in different districts:

- Traditional Basmati varieties - Amritsar, Ferozpur, Gurdaspur, Fatehgarh Sahib, Kapurthala, Patiala, Tarantaran and Sangrur.
- Pusa Basmati-1121 - Amritsar, Gurdaspur, Ferozabad, Faridkot, Fatehgarh Sahib, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Patiala, Sangrur and Taran Taran.
- Pusa Basmati-1 - Barnala, Ferozpur, Patiala and Sangrur.

Variety wise % Area & Production in year 2016 and 2017.

Sl. No.	Variety	% Basmati Area		% Basmati Production	
		2016	2017	2016	2017
1	Pusa Basmati-1121	90.28	87.91	87.63	**86**
2	Pusa Basmati-1509	5.72	6.94	7.36	**9.01**
4	Pusa Basmati-1	3.94	4.05	4.97	**5.14**
5	**Basmati-370/386**	**0.06**	**0.06**	**0.04**	**0.04**

***rest others**

Farmers generally sow their own seed (40%)or procure from private seed agencies (50%) , Govt. agencies (Punjab Agricultural University / Punjab State Seed Corporation / NSC) and from other farmers (10%).It has been assessed that all of the farmers use less seed than recommended, which is 20 kg seed for sowing nursery for transplanting one ha field. Almost 80% farmers use 12 – 14 kg and 20% use 8 – 10Kg/ha seed rate.

Only 65% farmers follow normal timings for nursery and transplanting. 20% follow very early and 15% go late. Nursery sowing of Pusa Basmati-1509 starts in the end of month of May, of Pusa Basmati- 1 and Pusa Basmati-1121 in the first week of June and Basmati-386 and CSR-30 in the second fortnight of June. Pusa Basmati-1509 transplanting starts in the first fortnight of June and that of Pusa Basmati-1, Pusa Basmati-1121 in the first fortnight of July and of Basmati-386 in the second fortnight of July. In the case of late transplanting, yield is reduced and sowing of next crop of wheat is delayed; however, quality of Basmati improves due to low temperature during maturity. Transplanting of traditional Basmati varieties continues up to 1st week of August depending on availability of labor and irrigation water.

% change in acreage(000hac.) of Basmati & Non-Basmati varieties of rice in 2017 over 2016 in Punjab

S.no	Variety	Acreage 2016	Acreage 2017	% Change
1	***Basmati***			
	Pusa Basmati-1121	555.8	500.1	-10.1%
	Pusa Basmati-1	24.28	23.05	-5%
	Pusa Basmati-1509	35.2	39.50	9.87%
	Basmati-386	0.37	0.35	-5.0%
	Non-Basmati Long Grain			
2	Sharbati	5.75	5.89	3%

Only 65% farmers go for seed treatment. Remaining 35% farmers don't go for seed treatment. Weeds are entirely (100%) controlled by herbicide application. Mostly used herbicides are -Butachlor 50EC, Anilofos 30EC, and Pretilachlor 50 EC. Farmers make rational use of herbicide for better efficacy for weed control.

Organic manures: Green manures are highly beneficial to rice crop. However, due to shortage of irrigation water, during hot summer costly seed and short time gap between the harvesting of wheat and sowing of rice, 5% farmers have been following the practice of green manuring.

Inorganic fertilizers: Urea is the major source of Nitrogen. For short-statured Basmati varieties such as Pusa Basmati-1, Pusa Basmati-1121 and Sharbati, 200-250 kg / ha urea in three equal splits and for Basmati-386, 75-125 kg urea in two split per ha is used. Most of the farmers use 62 kg of DAP for Phosphorus per ha as basal dose. Very few farmers (3-4%) use potash fertilizers. Muriate of Potash for Potassium at the rate of 60 kg. per ha. is being applied. Majority of farmers use 20-30 kg./ ha of Zinc Sulphate to all paddy crops for supply of Zinc.

Major insect pests are Leaf Folder. Leaf Folder attacked in the month of Sept. Farmers generally used 1-2 spray of Monocrotophos/ Chlorpyriphos or 1-2 applications of granular Cartap Hydrochloride, Fipronil, etc. Due to dry season, the disease incidence was very less this year. For Blast and Sheath Blight, farmers use Tilt 25EC @ 500 ml / ha. in one or two spraying. Seed treatment with Bavistin and Streptocycline is used for control of Foot- Rot. However, this year the use of pesticide was much less.

Harvesting of Sharbati and Pusa Basmati- 1509 starts in September and of other Basmati varieties in late October to mid- November.

In Punjab, Crop Cutting Experiments has been conducted in 60 plots covering 15 districts. Based on CCE data, the range of productivity of different Basmati and non-Basmati varieties has been found to be as follows:

District (tons / ha)	Pusa Basmati- 1121	Pusa Basmati- 1	Pusa Basmati- 1509	Basmati-386
Amritsar	4.11		5.28	2.56
Barnala	4.40	5.01		
Faridkot	4.56			
Fatehgarh Sahib	4.46	4.85		
Fazilka	4.58			
Gurdaspur	4.07		4.87	
Jalandhar	4.21		0.54	
Kapurthala	3.96			
Ludhiana	4.15	4.61	5.54	
Muktsar	3.97	4.89		
Nawanshahar	3.94		5.14	
Patiala	4.41	5.00	5.35	
Rupnagar	3.80		4.28	
Sangrur	4.24	4.94		
Tarantaran	4.13		5.60	

Most of the Traditional Basmati and Pusa Basmati-1121 farmers (around 30%) do manual harvesting due to higher market price of manually harvested produce. Under shortage of labour or other field problems like lodging etc., 70 -75% farmers go for mechanical harvest and rest follow both types of harvesting practices.

Marketing system is well established in Punjab and harvested produce is taken on the same day or the next day of threshing to the market for the sale. 5-10% farmers store their produce for a month or more, speculating the increase in price. Paddy is cleaned in the market yard and open auctioned on same day through Commission Agent, who charge commission fee from farmers as well as from traders.

Price offered varies due to the percentage of moisture in the grain and other quality parameters.

State/ Varieties	Punjab
Pusa Basmati 1121	3250-3300
Pusa Basmati 1509	2850-2950
Pusa Basmati 1	2900-3000
CSR 30	3800-4000
Pusa Basmati-1401	2700-2800
Sharbati	2100-2200
Sugandha	2300-2400

This year farmers are happy with the overall Basmati prices as it isa about 40% higher than last year. Across Basmati farmers sentiments are positive for the next kharif season

Basmati Varieties	Cost of Cultivation (INR / ha)	Avg. yield (ton/ ha)	Avg. Prices (INR / ton)	Net Returns (INR/ha)	Profit (INR/ha)
Pusa Basmati 1121	52500	3.75	33500	125625	73125
Pusa Basmati 1509	45500	4.88	29500	143960	98460
Pusa Basmati 1	51500	4.78	30000	143400	91900
Basmati-370/386					
CSR 30	59280	3.1	40000	124000	64720
Punjab Basmati-3	59280				
Pusa Basmati-1401	54340				
Sharbati	37050	3.76	22500	84600	47550
Sugandha	39520				

District wise Production Details of Basmati & Long Grain Non- Notified Non-Basmati (Prdn in 000 tons)

Sl. No	District	Total Basmati	Pusa-1121	Pusa-1509	Basmati-386	PB-1
1	AMRITSAR	420.5	266.8	153	0.9	0
2	BARNALA	9.5	7.1	0	-	2.438
3	BATHINDA	32.2	32.2	0	-	0
4	FARIDKOT	83.6	83.6	0	-	0
5	FATEHGARH SAHIB	39.3	30.1	0	-	9.206
6	FAZILKA	273.2	273.2	0	-	0
7	FEROZEPUR	173.6	173.6	0	-	0
8	GURDASPUR	152.5	152.1	0	-	0
9	HOSHIARPUR	7.6	7.6	0	-	0
10	JALANDHAR	24.8	24.8	0	-	0
11	KAPURTHALA	36.7	36.3	0	-	0
12	LUDHIANA	27.2	27.2	0	-	0
13	MANSA	89.8	64.4	11	-	14.35
14	MOGA	3.2	3.2	0	-	0
15	MOHALI	45.4	44.8	0	-	0.57
16	MUKATSAR	11.9	11.9	0	-	0
17	NAWANSHAHR	190.2	150.4	0	-	39.85
18	PATHANKOT	17.5	16.5	1	-	0
19	PATIALA	81.5	63.4	5	-	12.62
20	RUPNAGAR	9.6	9.6	0	-	0
21	SANGRUR	127.9	96.8	0	-	31.11
22	TARN TARAN	284.3	266.2	18	-	0
	Total	2142.2	1842.3	193	0.9	110.2

Expected change in the next year:

- Current prices and farmer average return will bring back higher sentiments towards overall acreage under Basmati varieties for next season
- Farmers tend to take decision on selection of a variety, to be sown in the next coming season ,generally on the basis of total return from an acre, calculated simply by multiplying production and prevailing rates of paddy produce.
- Again, Pusa Basmati-1509 being a early maturing and High yielding variety will b farmer preference & bring more acreage in next season
- Overall acreage will be higher for next season

In Uttar Pradesh, timely onset of monsoon made farmers to start transplanting on time and continued in full swing during July. A total of 13,36,190 ha rice acreage based on field survey has been transplanted in the 27 districts of the state. Shahjehanpur district has the largest total rice area (1,97,051 ha), followed by Pilibhit (1,52,500 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 last year.

Table: 8 Basmati rice acreages in Uttar Pradesh Kharif 2017

		Total rice acreage			Total basmati acreage		
S. No.	District	2016	2017	% Change LY	2016	2017	% Change LY
		Acreage in '000 ha					
1	Agra	4.1	4.0	-3.5%	0.92	0.9	-5.2%
2	Aligarh	58.3	58.3	0.0%	27.63	26.0	-6.0%
3	Auraiya	44.5	44.9	1.0%	2	1.9	-4.9%
4	Baghpat	5.1	4.9	-3.5%	3.86	3.6	-6.0%
5	Bareilly	151.6	150.1	-1.0%	3.1	3.0	-1.9%
6	Bijnore	45.3	43.7	-3.5%	6.93	6.9	-1.1%
7	Budaun	47.8	47.8	0.0%	14.24	14.1	-0.9%
8	Bulandshahr	52.5	52.0	-1.0%	30.74	29.2	-4.9%
9	Etah+Kasganj	32.5	33.2	2.0%	8.61	8.5	-1.6%
10	Farukhabad	11.1	11.3	2.0%	2.73	2.7	-2.8%
11	Firozabad	12.4	12.5	1.0%	3.85	3.8	-1.5%
12	Etawah	40.2	40.6	1.0%	9.03	8.9	-1.5%
13	Gautam Buddha Ngr	27.1	26.8	-1.0%	21.41	20.2	-5.7%
14	Ghaziabad+Hapur	27.8	27.0	-3.0%	9.99	9.7	-3.3%
15	Hathras	14.2	13.6	-4.5%	7.33	7.1	-3.7%
16	Mathura	38.2	35.7	-6.5%	29.42	27.2	-7.6%
17	Mainpuri	47.1	48.0	2.0%	18.69	18.1	-3.4%
18	Meerut	17.6	16.3	-7.5%	7.34	7.1	-3.1%
19	Moradabad	65.2	66.5	2.0%	3.39	3.4	1.1%
20	J.P.Nagar	16.3	16.0	-2.0%	4.11	4.1	-0.1%
21	Kannauj	12.2	12.3	1.0%	2.19	2.2	0.1%
22	Muzaffarnagar+Shamli	32.2	29.8	-7.5%	11.13	10.8	-3.2%
23	Pilibhit	152.5	152.5	0.0%	4.37	4.4	0.9%
24	Rampur	110.2	112.4	2.0%	2	2.0	-0.4%
25	Saharanpur	53.5	50.5	-5.6%	23.09	22.3	-3.6%
26	Shahjehanpur	195.1	197.1	1.0%	4.41	4.3	-1.9%
27	Sambhal	27.9	28.5	2.0%	3.66	3.6	-1.9%
	Total	1342.5	1336.2	-0.5%	266.17	255.8	-3.9%

The state are having loam and clay loam soils . Rice is mostly cultivated in clay dominated soil. Sodic soils are also used for Basmati cultivation in Ghaziabad, Bulandshahr and some pockets of Meerut and Badaun. Basmati is cultivated under assured irrigated conditions in the state and more than 95% of Basmati growers have independent source of irrigation. Sources of irrigation are private tube-wells, pumping sets and canal.

The major cropping pattern in Uttar Pradesh includes Rice-Wheat. However, other crops like Sugarcane-Vegetables-Fodder-Pulses are also included in the cropping pattern. The short duration varieties (Sharbati) are followed by vegetable pea and short duration spices in the cropping sequence.

Prominent varieties grown in different districts, Basmati rice grown in Uttar Pradesh are Basmati- 370, Type-3 and Basmati CSR-30, Pusa Basmati-1, Pusa Basmati-6, Pusa Basmati- 1509 and Pusa Basmati-1121. Sharbati and Sugandha are other scented varieties. Traditional varieties are localized mostly in Badaun, Sahajahanpur, Saharanpur, Bareilly and Auraiya districts in U.P. Pusa Basmati-6 (1401) has replaced much of the area under Pusa Basmati-1. Pusa Basmati 1509 is continue in potato growing belt.

The productivity has been lesser this year due to the untimely rainfall in the various part of the distrcits during its maturity time in Sep month.

District-wise acreage (000ha.) under Basmati rice in U.P during Kharif 2017

District	Pusa Basmati-1121	Pusa Basmati-1509	Pusa Basmati- 1 & 6	Type-3 & Others	Sharbati	Sugandha
Agra	0.3	0.48	0.1			2.2
Aligarh	16.8	4.34	4.8		2.5	9.1
Auraiya	1.0	0.16	0.0	0.7	1.8	0.2
Baghpat	1.9	0.54	1.2	0.0	0.2	0.9
Bareilly	1.2	0.67	0.5	0.7	46.4	0.5
Bijnore	1.5	2.27	3.1	0.0	18.1	1.3
Budaun	1.9	2.07	0.7	9.4	20.8	2.0
Bulandshahr	19.0	4.47	5.8	0.0	4.5	14.8
Etah+Kasganj	4.9	3.14	0.5	0.0	0.9	7.4
Farukhabad	1.7	0.85	0.1	0.0	0.1	2.4
Firozabad	2.2	1.31	0.2	0.0	0.1	5.3
Etawah	6.2	2.57	0.2	0.0	0.1	4.6
Gautam Buddha Nagar	17.6	0.78	1.8	0.0	1.4	0.9
Ghaziabad+Hapur	5.4	2.86	1.4	0.0	3.1	5.0
Hathras	3.9	2.41	0.8	0.0	0.7	5.9
Mathura	22.7	3.43	1.0	0.0	0.3	3.4
Mainpuri	15.4	2.46	0.2	0.0	0.2	6.0
Meerut	2.2	2.52	2.3	0.0	0.6	3.2
Moradabad	0.9	2.20	0.3	0.0	9.3	2.4
J. P. Nagar	1.1	2.00	1.0	0.0	7.2	2.8
Kannauj	0.6	1.41	0.2	0.0	0.1	1.4
Muzaffarnagar+Shamli	4.2	2.54	3.9	0.1	1.3	2.0
Pilibhit	0.8	3.43	0.2	0.0	5.4	0.4
Rampur	0.6	1.20	0.1	0.0	24.0	0.2
Saharanpur	6.9	3.25	11.9	0.2	7.5	2.9
Shahjehanpur	1.5	0.84	0.3	1.7	8.7	0.4
Sambhal	1.4	1.74	0.4	0.0	8.5	4.4
Total	144.1	55.95	42.8	12.8	173.6	91.7

% change in acreage (000ha.) of Basmati & Non-Basmati varieties of rice in 2017 over 2016 in U.P

S.no	Variety	Acreage 2016	Acreage 2017	% Change
1	***Basmati***			
	Pusa Basmati-1121	156.26	144.12	-7.8%
	Pusa Basmati-1 & 6	43.29	42.84	-1.05%
	Pusa Basmati-1509	53.65	55.95	4.3%
	Type 3 & Others	12.97	12.84	-1.0%
	Non-Basmati Long Grain			
2	Sharbati	163.92	173.56	5.6%
	Sugandha	90.86	91.71	0.9%

About 45% Farmers use Basmati seeds purchased from private seed dealers and reliable progressive farmers. Govt. agencies do not contribute significantly in the distribution of seeds of Basmati. Whereas 40-45% farmers use own seed for cultivation. Seeds of Sharbati are procured from private agencies of farmers own sources. The quality seed distributed by various organizations cover 40% of the acreage sown. Remaining 60% is considered to be from farmer's own source.

Seed rate used by most of the farmers is 15- 25 kg / ha for all the varieties, as against the recommended dose of 20 Kg/ha depending on seed quality and method of nursery raising. Nursery sowing of Pusa Basmati-1509, Sugandha, Sharbati and some areas Pusa Basmati-1 from 2nd week of May and transplanting starts June onwards, up to first week of August.

The fertilizer dose does not vary much from one district to the other. General application of fertilizer per ha is 25 kg Zinc Sulphate, 125- 150 kg. DAP and 100-200 kg Urea in Basmati, which varies field to field depending on variety. The application of potash is generally ignored. Major insect pests are Rice Stem Borer, Leaf Folder, Brown Plant Hopper and Gundhi bug. In general the farmers use insecticide whenever the crop suffers severely. But the trend is that many of the farmers use pesticides as recommended by the pesticide dealer.

Major diseases are Bacterial Leaf Blight (BLB), Sheath Blight and Blast. There was no major incidence of disease in Basmati rice this year. Untimely rains in the second fortnight of September and Brown Plant Hopper attack affected rice productivity this year, resulting in>10% lower yields than expected in certain districts

Harvesting of Pusa Basmati-1509, Sugandha and Sharbati starts in September and is completed in the first fortnight of October. In potato growing areas harvesting of Pusa Basmati-1 starts in last week of September. Pusa Basmati-1121 and Traditional Basmati varieties are harvested in late November to 1st week of December. The harvesting is mostly done manually. However, in some Western U.P. districts and Udham Singh Nagar districts, harvesting is also done by Combine Harvester.

In Uttar Pradesh, Crop Cutting Experiments have been conducted over 19 districts. The average productivity of crop has been estimated on the basis of 5 crop cuttings of one sq. m. each in the field with 14% moisture content. Based on the data of crop cutting experiments, the range of productivity of different basmati and non-basmati varieties has been found to be as shown below:

District (tons / ha)	Pusa Basmati- 1121	Pusa Basmati- 1	Pusa Basmati-1509	Basmati-370, Type-3	Sharbati	Sugandha
Agra	2.54	3.13	3.79			2.96
Aligarh	2.70	2.76	3.80		3.40	3.09
Baghpat	2.82	2.93	3.84	1.62	3.58	2.74
Bareilly	2.52	2.89	3.35	1.98	2.91	3.26
Bijnore	2.36	2.89	3.75		3.85	3.61
Budaun	2.50	2.98	2.91	1.54	2.99	3.43
Bulandshahr	2.82	3.34	4.58	0.00	3.41	3.54
Etah+Kasganj	2.41	3.13	3.20		2.85	3.17

District (tons / ha)	Pusa Basmati- 1121	Pusa Basmati- 1	Pusa Basmati-1509	Basmati-370, Type-3	Sharbati	Sugandha
Firozabad	2.64	3.04	3.68		2.55	3.23
Gautam Buddha Nagar	2.92	3.34	4.18	1.93	3.43	3.43
Ghaziabad+Hapur	3.76	3.30	4.42		2.92	3.70
Hathras	2.88	3.22	3.30		3.05	3.28
Mathura	2.98	3.24	3.69		3.42	3.98
Meerut	2.61	3.19	3.98	1.91	3.26	3.78
Moradabad	3.02	3.26	3.62		3.32	3.33
Muzaffarnagar+Shamli	3.45	3.24	4.05	2.16	2.82	4.03
Pilibhit	2.96	2.95	3.80		3.07	3.84
Rampur	2.87	3.33	3.71		2.99	4.02
Saharanpur	2.77	3.08	3.95	2.28	2.97	3.63

In Uttar Pradesh, rainfall which happened during last week of September has flattened the basmati crop and brought average yield losses to the farmers which was ranging from 3-7%. There were certain fields in the districts like Bijnor, Meerut, Moradabad, Bareilly etc reported around 10-12% yield losses due to these late rainfalls. The diseases like neck blast was also reported but all under threshold level and has brought much yield losses. All types of Basmati & non-basmati crop got impacted in this late rainfall happened in September month.

Most of the farmers sell their produce after harvest in nearby primary or secondary markets and 'Mandis'. Most of the farmers market this produce after harvest in local markets (mandis) and since the paddy mandis are not available in most of the districts and the farmers carry their produce to other state mandis as well depending on rates. The cost of cultivation of different varieties of Basmati including evolved and non-notified rice, as reported by farmers were as follows:

Basmati Varieties	Cost of Cultivation (INR / ha)	Avg. yield (ton/ ha)	Avg. Prices (INR / ton)	Net Returns (INR/ha)	Profit (INR/ha)
Pusa Basmati 1121	48500	2.95	31500	92925	44425
Pusa Basmati 1509	42500	3.95	27500	108625	66125
Pusa Basmati 1	49500	3.45	28500	98325	48825
Basmati-370/386					
CSR 30	59280				
Punjab Basmati-3	59280				
Pusa Basmati-1401	54340				
Sharbati	30000	3.1	22500	69750	39750
Sugandha	33500	3.56	23500	83660	50160

Uttar Pradesh **(Production 000 tons)**

District	Total Basmati	Pusa Basmati-1121	Pusa Basmati-1509	Pusa Basmati-1 & 6	Type-3 & Others	Sharbati	Sugandha
Agra	2.9	0.8	1.8	0.2			6.4
Aligarh	76.7	45.4	18.0	13.3		8.4	28.0
Auraiya	4.3	2.5	0.5	0.2	1.2	4.8	0.6
Baghpat	10.9	5.3	2.1	3.5	0.0	0.8	2.3
Bareilly	8.0	3.1	2.2	1.3	1.3	135.2	1.6
Bijnore	20.3	3.5	7.8	9.0		56.0	4.8
Budaun	27.4	4.8	6.0	2.2	14.4	62.0	6.8
Bulandshahr	91.2	53.5	18.4	19.2		15.3	52.3
Etah+Kasganj	23.3	11.7	10.0	1.5		2.5	23.5
Farukhabad	7.2	4.5	2.5	0.2		0.4	6.9

District	Total Basmati	Pusa Basmati-1121	Pusa Basmati-1509	Pusa Basmati-1 & 6	Type-3 & Others	Sharbati	Sugandha
Firozabad	11.5	5.9	4.8	0.7		0.3	17.2
Etawah	26.8	17.6	8.7	0.5		0.2	13.5
Gautam Buddha Nagar	60.7	51.6	3.3	5.9	0.0	4.7	2.9
Ghaziabad+Hapur	34.9	17.6	12.6	4.6		9.0	18.5
Hathras	21.6	11.1	8.0	2.6		2.1	19.3
Mathura	83.8	67.7	12.7	3.4		0.9	13.6
Mainpuri	49.0	40.7	7.6	0.7		0.5	19.8
Meerut	23.4	5.8	10.1	7.4	0.1	2.0	12.1
Moradabad	11.7	2.8	8.0	1.0		30.9	7.9
J. P. Nagar	12.9	3.0	7.0	2.9		23.5	8.9
Kannauj	6.2	1.6	4.2	0.4		0.4	4.3
Muzaffarnagar+Shamli	34.5	11.3	10.3	12.6	0.2	3.6	8.0
Pilibhit	15.9	2.4	13.0	0.5		16.6	1.4
Rampur	6.8	1.9	4.5	0.5		71.7	0.8
Saharanpur	68.6	19.2	12.4	36.6	0.5	22.1	10.5
Shahjehanpur	11.2	4.3	3.2	0.8	2.9	28.8	1.4
Sambhal	11.5	3.6	6.5	1.3	0.0	25.4	15.4
Total	763.2	403.2	206.3	133.0	20.7	528.2	308.8

Expected change in the next year:

- Uttar Pradesh farmers will resume to Basmati crop from HYV and Sharbati as this year prices and returns were good in comparison to last year
- Farmers will also vet the sugarcane prices as crushing is on and sugar prices is expected to come down in near future which might favour Basmati or rice crop in some districts
- However, sowing can be delayed on Basmati front as this year wheat sowing is also delayed so the harvest will be in April-May season
- It is very early days to predict the changes but farmers are quite positive on Basmati crop for the next season

In Uttarakhand, A total of 130,700 ha rice acreage based on first field survey has been estimated as transplanted in the 4 districts as on 10 Sept 2017. Udham Singh Nagar district has the largest area under rice (100,300 ha). The total Basmati area is estimated to be 14,790 ha out of which 2,533 ha. is under Pusa Basmati-1509.

Table: 9 Basmati rice acreages in Uttarakhand Kharif 2017

S. No.	District	Total Rice Acreage			Total Basmati Acreage		
		2016	2017	% Change	2016	2017	% Change
		Acreage in '000 ha					
1	Dehradun	7.4	7.5	1%	3.1	2.98	-4%
2	Haridwar	14.2	14.3	1%	6.7	6.42	-4%
3	Nainital	8.5	8.5	1%	1.5	1.47	-2.0%
4	U S Nagar	99.3	100.3	1%	4.3	3.92	-9%
	Total	**129.4**	**130.7**	1%	**15.6**	**14.79**	**-5%**

District-wise acreage (000ha.) under Basmati rice in U.K during Kharif 2017

District	Type-3 & Others	Pusa Basmati- 1121	Pusa Basmati- 1509	Pusa Basmati- 1	Sharbati	Sugandha
Dehradun	2.45	0.3	0.2		2.475	0.06
Haridwar	2.35	1.4	0.5	2.16	3.590	0.26
Nainital	0.9	0.3	0.3		1.414	
U S Nagar	0.8	1.5	1.5	0.12	7.49	0.17
Total	6.4	3.5	2.5	2.274	14.97	0.49

About 45% Farmers use Basmati seeds purchased from private seed dealers and reliable progressive farmers. Govt. agencies do not contribute significantly in the distribution of seeds of Basmati. Whereas 40-45% farmers use own seed for cultivation. Seeds of Sharbati are procured from private agencies of farmers own sources. The quality seed distributed by various organizations cover 40% of the acreage sown. Remaining 60% is considered to be from farmer's own source.

Seed rate used by most of the farmers is 15- 25 kg / ha for all the varieties, as against the recommended dose of 20 Kg/ha depending on seed quality and method of nursery raising.

Nursery sowing of Pusa Basmati-1509, Sugandha, Sharbati and some areas Pusa Basmati-1 from 2nd week of May and transplanting starts June onwards, up to first week of August.

The fertilizer dose does not vary much from one district to the other. General application of fertilizer per ha is 25 kg Zinc Sulphate, 125- 150 kg. DAP and 100-200 kg Urea in Basmati, which varies field to field depending on variety. The application of potash is generally ignored.

% change in acreage (000ha.) of Basmati & Non-Basmati varieties of rice in 2017 over 2016 in U.K

S.no	Variety	Acreage 2016	Acreage 2017	% Change
1	***Basmati***			
	Pusa Basmati-1121	4.2	3.5	-15.8%
	Pusa Basmati-1	2.32	2.27	-2.0%
	Pusa Basmati-1509	2.5	2.53	1.3%
	Type 3 & Others	6.6	6.44	-2.4%
	Non-Basmati Long Grain			

S.no	Variety	Acreage 2016	Acreage 2017	% Change
2	Sharbati	14.57	14.96	2.7%
	Sugandha	0.49	0.49	0.7%

Major insect pests are Rice Stem Borer, Leaf Folder, Brown Plant Hopper and Gundhi bug. In general the farmers use insecticide whenever the crop suffers severely. But the trend is that many of the farmers use pesticides as recommended by the pesticide dealer.

In Uttarakhand, Crop Cutting Experiments has been conducted in 4 districts. Based on CCE data, the range of productivity of different Basmati and non-Basmati varieties has been found to be as follows:

S. No.	District (tons / ha)	Pusa Basmati-1121	Pusa Basmati-1	Pusa Basmati-1509	Basmati-370, Type-3	Sharbati	Sugandha
1	Dehradun			3.90	1.85		
2	Haridwar	2.65	3.25	3.8		3.75	3.40
3	Nainital				1.80		3.80
4	Udham Singh Nagar	2.30	3.45			3.65	

Major diseases are Bacterial Leaf Blight (BLB), Sheath Blight and Blast. There was no major incidence of disease in Basmati rice this year. Untimely rains in the second fortnight of September and Brown Plant Hopper attack affected rice productivity this year, resulting in>10% lower yields than expected in certain districts

Uttarakhand (Production 000 tons)

District	Total Basmati	Pusa Basmati-1121	Pusa Basmati-1509	Pusa Basmati-1	Type-3 & Others	Sharbati	Sugandha
Dehradun	6.2	0.8	0.7		4.7	7.461	0.24
Haridwar	17.89	3.88	2.3	7.26	4.5	13.4	1.06
Nainital	3.32	0.7	0.9		1.7	4.7	
U S Nagar	11.62	3.74	6.3	0.364	1.4	24.2	0.63
Total	39.05	9.12	10.2	7.62	12.3	49.73	1.93

In Jammu & Kashmir, three districts have been taken up for the study. The total rice area is estimated to be 1,39,000 ha. in these districts. Jammu & Samba have an area of 97,000 ha. and Kathua only 42,000 ha. The state has received excess rainfall this year and the transplanting is complete.

Table: 10 Basmati rice acreages in Jammu & Kashmir Kharif 2017

S.No	District	Total Rice 2017	Total Basmati Rice 2017	% Share of Basmati Rice
1	Jammu	85.0	48.1	57.2%
2	Kathua	42.0	10.2	24.5%
3	Samba	12.0	2.7	22.5%
	Total	**139.0**	**61.0**	**44.3%**

Basmati is cultivated under assured irrigated condition. Main irrigation source is canal, which supplies water to 94% of Basmati growing areas. Wells irrigate the remaining portion. The major cropping pattern in Jammu & Kashmir is Rice-Wheat/Barley. However, some areas are left fallow after rice due to high moisture.

Farmers use either their own seed or seed purchased from private seed dealers. Govt. seed distribution of Basmati rice is also being facilitated to farmers. Seed rate used by most of the farmers is 12 to 15 kg / ha. Nursery raising starts in mid-June and transplanting is done in mid-July.

Weeds are mostly controlled mechanically by use of Khurpi. However, progressive farmers use 'Butachlor', a popular weedicide. Use of Nitrogen at 40 kg N / ha is generally given. Urea is the main source of Nitrogen.

Major insect pests are Rice Stem Borer, Leaf Folder and Plant Hopper. Farmers use insecticide whenever the crop suffers severely. During the current year, no impact incidence was observed above economic threshold limit and hence, no use of insecticide was required.

Harvesting of Traditional Basmati is generally done manually. Harvesting starts during early November and is completed by mid-November. The cost of cultivation of Basmati-370 as reported by farmers was Rs. 35,000/- to Rs.40,000/- per ha.

District-wise acreage (000hac.) under Basmati rice in J.K during Kharif 2017

District	Pusa Basmati- 1121	Pusa Basmati 1509	Basmati 370/ Ranbir	Sharbati
Jammu	1.4	0.0	47.2	9.1
Kathua	6.3	0.2	3.8	0.7
Samba	0.6	0.1	2.1	0.3
Total	8.2	0.3	53.1	10.1

% change in acreage (000hac.) of Basmati & Non-Basmati varieties of rice in 2017 over 2016 in J.K

S.no	Variety	Acreage 2016	Acreage 2017	% Change
1	***Basmati***			
	Pusa Basmati-1121	8.4	8.212	-2.2%
	Pusa Basmati 1509	0.25	0.255	2.0%
	Basmati 370/ Ranbir	53.6	53.064	-1.0%
2	***Non-Basmati Long Grain***			
	Sharbati	9.95	10.149	2.0%

Jammu & Kashmir (Production 000 tons)

District	Pusa Basmati- 1121	Pusa Basmati 1509	Basmati 370/ Ranbir	Sharbati
Jammu	4.4	0.0	94.5	32.3
Kathua	20.6	0.8	7.6	2.6
Samba	0.2	0.3	3.8	1.0
Total	25.1	1.1	105.9	35.9

Expected change in the next year:

Basmati rice acreage in general has stabilized and hence no significant change in the area under Traditional Basmati is expected.

In Himachal Pradesh, A total of 76,550 ha rice acreage based on field survey has been estimated as transplanted in 11 districts. Kangra district has the highest area (60,750 ha). The Basmati varieties are grown mostly in Kangra. The farmers opted Permal varieties including PR-123 in the increased paddy area and the area under Pusa Basmati- 1509.

Table: 11 Basmati rice acreages in Himachal Pradesh Kharif 2017

S.No	District	Total Rice 2017	Total Basmati Rice 2017	% Share of Basmati Rice
1	Kangra	60.8	4.0	6.6%
2	Mandi	-	3.9	-
	Total	**60.8**	**7.9**	**13.0%**

Two major districts, Mandi and Kangra have 70-75% of the total area. Basmati and Sharbati are grown in exclusively few blocks of Kangra. Rice is cultivated as a rainfed irrigated crop in general. The majority of farmers (70-75%) use very less input of fertilizer and pesticide etc. and hence the yield is very less, hardly 20-25 qt/ha of rice.

District-wise acreage (000ha.) under Basmati rice in H.P during Kharif 2017

District	Pusa Basmati 1121	Pusa Basmati 1509
Kangra*	1.9	1.0
Mandi*		4.1
Total	1.9	5.1

Varieties: Farmer prefers to grow the local traditional varieties due to incidence of pest and diseases. Sharbati is preferred. Diseases like Brown spot, Leaf Blast are the major ones and all basmati varieties are very sensitive to these diseases.

% change in acreage (000hac.) of Basmati & Non-Basmati varieties of rice in 2017 over 2016 in H.P

S.no	Variety	Acreage 2016	Acreage 2017	% Change
1	***Basmati***			
	Pusa Basmati 1121	2	1.92	-4.0%
	Pusa Basmati 1509	5	5.1	2.0%

Himachal Pradesh (Production 000 tons)

District	Pusa Basmati 1121	Pusa Basmati 1509
Kangra*	7.2	4.5
Mandi*		17.8
Total	7.2	22.3

There is no established marketing system and mostly products are sold at the farm yard/house. Himachal Pradesh is self- consuming state and very small quantity is being put to market.

Expected Change:

Pusa Basmati-1121 has been introduced only couple of years back but catching up with farmers in very fast way. But farmers mostly prefer to grow Traditional Basmati varieties of their own choice. There is no significant change likely to occur in the Basmati varieties grown in the state during the next year.

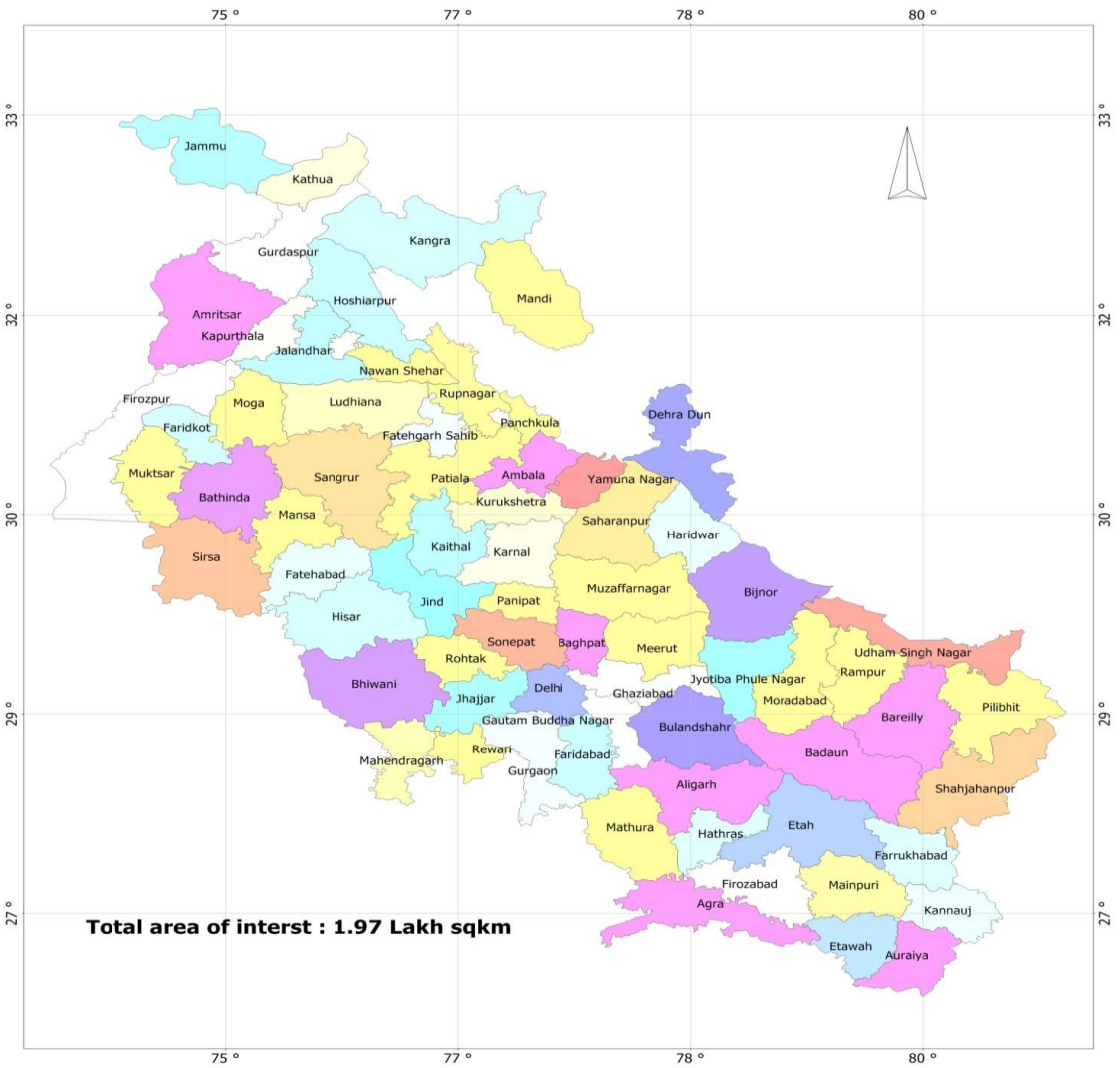
CONCLUSION

- This year overall Basmati production was lowest in last five years
- Basmati crop is about 10% lower than last year on account of lower acreage and yield losses specifically at Uttar Pradesh & Uttaranchal
- This year Agro-climatic conditions were favorable for the crop and no major crop losses has been reported in the states like Punjab & Haryana
- Farmers received about 40% higher price than last year and they are quite upbeat on the next year Basmati crop
- Farmers traction towards Pusa 1509 will increase while little shift could be seen on traditional varieties

Chapter 4

Project Background

Timely information on the area and likely production of the crop before the harvest helps exporters and other decision makers involved in Basmati trade to take decisions about the quantum and time of export. Realizing this potential, the Basmati Export Development Foundation (BEDF), New Delhi contracted M/s Geotrans Technologies Pvt. Ltd to undertake field survey work for acreage estimation for all rice, for Basmati crop for selected other non-notified varieties), crop health monitoring and yield estimation and production for Basmati rice and non-notified varieties and questionnaire based sample survey of farmers, for 88 districts in the selected seven states i.e. Punjab, Haryana, Uttar Pradesh, Uttarakhand, Himachal Pradesh, and Jammu & Kashmir apart from Delhi. The field survey based approach has been being applied to collect the information at block level to improve the accuracy further to a desired level. The Basmati varieties for which information is required 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 Permal).



Study Area Details

Work of field survey validation based acreage estimation for all rice for Basmati crop for selected other non-notified varieties), crop health monitoring and yield estimation and production for Basmati rice and non-notified varieties and 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. The field survey based 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	Firozepur	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 Permal).

Sample size selection & methodology

Sample size of farmers interviews

S.No	State	Districts coverage	No. of blocks	No. of farmers targeted	Share of Basmati Acreage
1	Haryana	20	93	3906	42%
2	Punjab	22	143	2860	36%
3	Uttar Pradesh	27	255	2240	19%
4	Uttarakhand	4	27	675	1%
5	Jammu & Kashmir	3	13	60	2%
	Total	79	536	9866	100%

- Four different teams each with four experts have been deputed on field for collecting information from farmers
- Teams not only interviewed farmers but also clicked pictures of their fields along with same day newspaper
- Farmers pictures were geo-tagged for reference purpose
- Tele-callers have been deputed to collect the mandi prices & arrival trend so that seasonal trend can be ascertained.
- Technical team is working on the Agri-dash-boards for quick understanding and analysis.
- The number of farmer interaction may vary from one state to another based on their availability and responses.

The farmers were randomly selected from Basmati growing blocks of prominent districts. The states of Uttarakhand, Jammu & Kashmir and Himachal Pradesh are having very less area, and hence the no. of farmers from these states was small. Moreover, in Jammu, there is no variability in Basmati farming practices and the farmers grow preferably Basmati-370 and the variability in input use is also not significant. But in Kathua, the farmers started growing Pusa Basmati-1121 as they get their produce sold in Punjab markets and get higher returns. And during the last 5 years the acreage under Pusa Basmati-1121 has increased in the area. Since the % Basmati rice area in different districts is variable, the no. of farmers in each district was also variable.

Annexure 1

Block-level details

Block wise and Variety wise acreage under total rice and Basmati + Scented varieties in Haryana (2017)

Sl. No.	District	Block	Pusa Basmati-1121	CSR30	Pusa Basmati-1509	Pusa Basmati - 1	Punjab Basmati-3	Taraori (HBC-19)	Pusa 1401	Sharbati
1	**Kaithal**		**34875**	**23094**	**3404**	**93**				**276**
		Pundri	3650	14242	812	24				0
		Seevan	725	312	512	15				0
		Gulha	5450	650	483	8				0
		Rajond	5580	1035	775	22				0
		Kaithal	8630	4760	410	12				0
		Kalayat	10840	2095	412	12				0
2	**Karnal**		**36395**	**28370**	**9884**	**235**				**138**
		Nissang	6980	6615	1312	35				0
		Assandh	10840	2305	815	22				0
		Nilokheri	2245	12195	1750	38				0
		Gharunda	5025	1150	3180	75				138
		Indri	5225	3720						0
		Karnal	6080	2385	2827	65				0
3	**Kurukshetra**		**9990**	**13730**	**3045**	**2344**				**302**
		KRK	5150	2756	1260	65				0
		Babain	125	127	340	285				16
		Ladwa	590		765	1832				0
		Pehowa	2875	8525	680					286
		Sahabad	1250	2322		162				0
4	**Rohtak**		**30727**	**58**	**60**					**1050**
		Rohtak	10180							0
		Lakhanmajra	3257	28	60					0
		Sampla	3725							0
		Meham	9340	8						1050
		Kalanaur	4225	22						0
5	**Faridabad**		**7090**			**276**				**276**
		Faridabad	1560			140				
		Ballabhgarh	5530			136				
6	**Palwal**		**14945**		**225**	**2913**				**265**
		Palwal	8325		225	1278				0
		Hodal	1610			178				0
		Hathin	2245			375				159
		Hassanpur	2765			1082				106
7	**Fatehabad**	**Hassanpur**	**23350**	**990**	**1519**	**11932**			**6853**	**72.1**
		Tohana	3960	45	625	876	0	0	345	72
		Fatehabad	9385	150	25	4568	0	0	948	0
		Bhuna	2455	148	222	735	0	0	50	0
		Ratia	5340	612	105	5465	0	0	3875	0
		Jakhal	1125	35	527	240	0	0	1170	0
		Bhattukalan	1085		15	48	0	0	465	0
8	**Sirsa**		10089.5	312	3437	6109			37481	**504.7**
		Ellanbad	1910		1125	1275			11025	0
		Sirsa	7310		1175	2654			10235	505
		Rania	390	312	1085	1648			12774	0
		Baragua								0
		Dabwali								0
		Odhan								0
		Natusari	480		52	532			3447	0
9	**Jhajjar**		**37375**	**258**	**1030**					**275.625**
		Jajhhar	9115	140	585					0
		Beri	15815							0
		Sahlwas	525							0
		Matnhill	4875							0
		B/Garh	7045	118	445					0
10	**Bhiwani**		**17785**							**275.625**
		Bhiwani	4554							
		Bhiwani Khera	4321							
		Dadri	4525							

Sl. No.	District	Block	Pusa Basmati-1121	CSR30	Pusa Basmati-1509	Pusa Basmati - 1	Punjab Basmati-3	Taraori (HBC-19)	Pusa 1401	Sharbati
		Dadri II	4385							
11	**Yamunanagar**		**738**	**399**	**680**	**6895**				**275.625**
		Radore	255	245	395	4632				0
		Mustfabad		94		225				0
		Jagadhari		60		1986				0
		Bilaspur	58							0
		Chachhroli	425		285	52				0
		Sadhora								0
12	**Panipat**		**51317**	**7420**	**2490**	**2137**				**307.4**
		Panipat	7330	1615	625					0
		Israna	11222	2020	295					193
		Matloda	12160	1995	775	2137				115
		Samalkha	9480	1312	795					0
		Bapoli	11125	478						0
13	**Jind**		**55289**	**5798**	**2137**	**7165**				**275.625**
		Narwana	5940	886	340	3515				0
		Jind	8545	815	325	336				0
		Julana	7612	555						0
		safidon	12745		442	814				0
		Pilukhera	8500	1762		350				0
		Alewa	7285	815	1030	2150				0
		Uchana	4662	965						0
14	**Ambala**		**6711**	**8823**	**137**	**235**				**84**
		Naraingarh				135				53
		Ambala-I	5150	8530	85					0
		Ambala-II	652	75						0
		Baraar	606	218	10	90				32
		Saha	326		42					0
		Sahzadpur				9				0
15	**Sonepat**		**61018**	**2810**	**1412**					**275.625**
		Gohana	8140	450	130					0
		Mundana	11127	75						0
		Kharkhoda	4889	170	310					0
		Sonipat	13717	1240	155					0
		Kathura	4505		142					0
		GANOUR	12895	875	675					0
		Rai	5745							0
16	**Hisar**	**Rai**	**36047**	**1010**	**548**	**984**				**275.625**
		Hisar 1	1825							0
		Bas	10545	928	358	248				0
		Hansi	11866							0
		Narnaud	9152		65	68				0
		Agroha	90							0
		Uklana	1642	82	125	450				0
		Barwala	927			218				0
17	**Mewat**		**6441**							**275.625**
		Nuh	2025							
		Punana	1995							
		Nagina	2421							
18	**Rewari**		**1100**							**275.625**
19	**Gurgaon**		**2045**			**150**				**275.625**
20	**Panchkula**									**276**
	Total		**443503**	**93070**	**30008**	**41400**	**0**	**0**	**44100**	**6030**

Block wise and Variety wise acreage under total rice and Basmati + Scented varieties in Punjab (2017)

Sl. No.	District	Block	Total Basmati	Pusa-1121	Pusa-1509	Basmati-386/ CSR 30	PB-1	Sharbati
1	**AMRITSAR**		**104116**	**72662**	**31102**	**352**		**367.2**
		Ajnala	24890	10612	1852			
		Chogawan	20735	8127	1822			
		Harsha Chhina	15594	14287	3117			
		Jandiala Guru	2388	3756	6846			
		Majitha	8443	14427	8360			

Sl. No.	District	Block	Total Basmati	Pusa-1121	Pusa-1509	Basmati-386/ CSR 30	PB-1	Sharbati
		Rayya	2875	3137	1730			
		Tarsikka	4849	986	1150			
		Verka	11976	11207	3050			
		Attari	12366	6123	3175			
2	**BARNALA**		**2381**	**1806**	**0**		**575**	
		Barnala	1066	466			25	
		Sehna	770	648				
		Mehal Kalan	545	692			550	
3	**BATHINDA**		**9599**	**9599**	**0**			
		Rampura Phul	2109	1567	0			
		Nathana	2449	3112	0			
		Bathinda	1632	1767	0			
		Maur	1131	1341	0			
		Sangat	893	603	0			
		Talwandi	510	471	0			
		Sabo	493	222	0			
		Bhagta Bhai Ka	383	516	0			
4	**FARIDKOT**		**20520**	**20520**				
		Faridkot	9540	9562				
		Kotkapura	10980	10958				
5	**FATEHGARH SAHIB**		**9463**	**7558**			**1905**	
		Khera	1802	1355			25	
		Bassi pathana	1048	1537			30	
		Khamano	1622	423			25	
		Sirhind	2321	2075			1825	
		Amloh / Gobindgarh	2670	2168				
6	**FAZILKA**		**66811**	**66811**				
		Fazilka	34645	28922				
		Abohar	5434	1413				
		Jalalabad	24091	35764				
		Khuyian Sarvar	2641	712				
7	**FEROZEPUR**		**48339**	**48339**				
		Ferozepur	6509	5885				
		Ghall Khurd	3706	7244				
		Guru Har Sahai	25448	19855				
		Makhu	3155	3675				
		Mamdot	6272	7958				
		Zira	3250	3722				
8	**GURDASPUR**		**42028**	**41878**	**150**			**3594.7**
		Gurdaspur	3482	5391				
		Dhariwal	4035	4365				
		Khanuwan	2814	4112	150			
		Kalanaur	4378	4205				
		Dinanagar	3663	3135				
		Batala	3320	3110				
		Sh Hargobindpur	3758	2948				
		Fatehgarh Churian	3281	3752				
		Quadian	4111	3075				
		Dera Baba Nanak	4893	3795				
		Dorangla	4292	3990				
9	**HOSHIARPUR**		**6610**	**6610**				
		Hoshiarpur-I	425					
		Hoshiarpur-II	298					
		Bhunga	416					
		Tanda	1555	1887				
		Dasuya	199	1728				
		Mukerian	1836	1938				
		Hajipur	181	812				
		Talwara	271					
		Mahilpur	534					
		Garhshankar	895	245				
10	**JALANDHAR**		**10480**	**9645**	**835**			
		Jalandhar East	859	1552				
		Jalandhar West	654	1274				
		Adampur	1279	775	60			
		Bhogpur	1260	1015	250			
		Philour	1992	835				
		Rurka Kalan	508	728				
		Noor Mahal	752	1135				
		Nakodar	1133	1255	50			
		Shahkot	850	550	25			
		Lohian	1192	526	450			
11	**KAPURTHALA**		**7731**	**7731**				
		Kapurthala	987	1365				
		Sultanpur Lodhi	444	1618				
		Phagwara	1503	2248				

Sl. No.	District	Block	Total Basmati	Pusa-1121	Pusa-1509	Basmati-386/ CSR 30	PB-1	Sharbati
		Dhilwan	2263	1612				
		Nadala	2535	888				
12	**LUDHIANA**		**23077**	**17517**	**2265**		**3295**	
		Ludhiana-I	1614	1120				
		Ludhiana-II	1794	1087				
		Machiwara	1853	1066	550		175	
		Samrala	1698	548	1550		160	
		Khanna	1554	2705	35		75	
		Doraha	2212	811				
		Dehlon	3228	778				
		Pakhowal	1961	1365			1025	
		Sudhar	1638	1260	58		1175	
		Jagraon	2284	1375	50			
		Sidhwan Bet	1841	4060			685	
		Rai Kot	1399	1342	25			
13	**MANSA**		**862**	**862**				
		Mansa	181	175				
		Bhikhi	181	320				
		Bhudhalada	284	305				
		Jhunir	198	30				
		sardulgarh	17	32				
14	**MOGA**		**18319**	**18159**			**160**	
		Moga-I	2519	4852				
		Moga-II	1002	1625				
		Bagha Purana	2316	6620			35	
		Nihal Singh wala	7905	2580			125	
		Kot Ise khan	4577	2482				
15	**MOHALI**		**3900**	**3900**				
		Kharar	1633	1125				
		Majri	1814	1265				
		Derabassi	453	1510				
16	**MUKATSAR**		**50785**	**42500**			**8285**	
		Muktsar	10302	13345			125	
		Malout	14333	10421			60	
		Giddarbaha	10617	10405			2250	
		Lambi	15534	8329			5850	
17	**NAWANSHAHR**		**4947**	**4717**	**230**			
		Nawanshahr	646	1225	100			
		Banga	1472	1185	105			
		Aur	2051	531	25			
		Balachaur	551	1160				
		Saroya	228	616				
18	**PATHANKOT**		**2839**	**2769**	**70**			**1938**
		Pathankot	971	715	35			
		N.J. Singh	849	1307				
		Bamial	377	355				
		Dhar	0					
		Kalan			35			
		Sujanpur	311	392				
19	**PATIALA**		**20213**	**16215**	**1285**		**2713**	
		Patiala	2250	2120	25			
		Nabha	3923	2583	25		70	
		Saman	1424	1340	65		1368	
		Patran	3098	1077	450		1250	
		Bhunerheri	124	3375				
		Sanour	3459	2640	245			
		Rajpura	3109	1295	475			
		Ghanour	2826	1785			25	
20	**RUPNAGAR**		**2878**	**2868**	**10**			
		Rupnagar	475	1475				
		Chamkaur Sahib	1291	450				
		Nurpur Bedi	188	248				
		Morinda	762	580	10			
		Anandpur Sahib	161	115				
21	**SANGRUR**		**31439**	**25314**			**6125**	
		Sangrur	2341	3092				
		Bhawanigarh	2299	2745				
		Ahmedgarh	1014	2725				
		Malerkotla	847	2515				
		Dhuri	1777	1980				
		Sherpur	1965	2725			225	
		Sunam	1819	3440				
		Lehragaga	9720	2950			4750	
		Andana	9657	3142			1150	
22	**TARN TARAN**		**75640**	**72080**	**3560**			
		TarnTaran	9737	9512	175			

Sl. No.	District	Block	Total Basmati	Pusa-1121	Pusa-1509	Basmati-386/ CSR 30	PB-1	Sharbati
		Chohla Sahib	3783	11835				
		Naushera Pannuan	13511	10715	1125			
		Gandiwind	8123	7745	1210			
		Khadaur Sahib	4482	5326	1050			
		Patti	12030	8845				
		Valtoha	11973	8912				

Block wise and Variety wise acreage under total rice and Basmati + Scented varieties in U.P (2017)

S. No.	District	Block	Total Rice	Pusa-1121	Pusa Basmati -1	Type –3	HBC-19	Basmati-370	Pusa-1509	CSR-30	Sugandha 2,3&5	Sharbati	Sugandha
1	**Aligarh**		**58300.0**	16907.8	4806.8				4336.8			2475.2	9059.7
		Dhanipur	6200.4	3017.5	339.8				265.5			224.1	197.1
		Lodha	3744.8	1105.9	226.6				223.9			203.2	358.7
		Jawan	7551.0	2516.8	418.6				369.6			317.9	864.0
		Akrabad	6227.7	2617.0	305.4				338.4			218.9	217.3
		Atroli	4815.7	923.9	201.9				359.2			218.9	1389.5
		Bijoli	4208.6	896.6	128.1				468.6			119.9	1086.4
		Gangiri	4065.4	687.2	113.3				359.2			177.2	1056.0
		Khair	4836.2	1137.8	1516.9				218.7			135.5	318.3
		Chandous	3540.2	896.6	477.7				328.0			93.8	656.9
		Tappal	4577.0	1451.8	704.3				442.5			99.0	490.1
		Iglas	4283.7	723.6	93.6				536.2			411.7	1298.6
		Gonda	4249.5	933.0	280.7				426.9			255.3	1126.8
2	**Hathras**		**13561.0**	3873.2	792.0				2412.8			695.5	5898.4
		Hasain	3948.6	1054.7	237.6				562.8			204.9	1559.4
		Sikandraraoo	4505.0	1552.0	242.6				469.0			275.0	2004.9
		Sapau	2904.8	695.4	153.5				646.2			80.9	1265.8
		Mursan	548.7	198.0	59.4				151.1			43.1	146.8
		Hathras	648.5	152.0	44.6				198.0			21.6	420.2
		Sasani	663.9	170.4	39.6				182.4			32.3	389.9
		Sadabad	341.5	50.7	14.9				203.2			37.7	111.4
3	**Etah +Kasganj**		**33150.0**	4878.6	485.1				3135.1			882.0	7413.4
		Sheetalpur	3646.5	540.5	55.0				379.9			89.8	717.3
		Sakeet	6287.6	911.8	80.0				374.5			68.7	974.9
		Nindholikala	2554.2	427.7	35.0				155.2			42.3	207.1
		Marehara	1592.3	361.9	10.0				198.0			42.3	394.0
		Aliganj	554.3	65.8	20.0				128.4			21.1	106.1
		Jaithra	277.2	37.6	15.0				58.9			15.8	60.6
		Jalesar	2407.5	361.9	35.0				294.3			37.0	767.8
		Awagarh	2374.8	488.8	40.0				208.7			37.0	656.7
		Soron	1673.8	202.1	15.0				155.2			42.3	495.0
		Kasganj	1624.9	253.8	15.0				187.3			31.7	343.5
		Tilpura	2662.9	371.3	55.0				230.1			89.8	540.5
		Ganjdudwara	1831.4	103.4	20.0				208.7			68.7	500.1
		Patiyali	2548.7	427.7	60.0				224.7			163.7	666.8
		Amapur	1690.1	216.2	20.0				208.7			100.3	666.8
		Sawat	1423.8	108.1	10.0				123.1			31.7	316.2
4	**G.B. Nagar**		**26829.0**	17728.4	1762.2				782.8	8.8		1375.5	852.6
		Bisrakh	3550.6	2392.9	341.7				56.7			152.3	24.6
		Dadri	6330.2	3422.5	251.6				437.8	8.8		719.3	537.2
		Dankour	7298.1	5035.0	549.8				97.9			246.8	197.1
		Jebar	9650.1	6877.9	619.1				190.6			257.3	93.6
5	**Baghpat**		**4921.5**	1895.7	1178.1				535.5	21.9		235.4	850.0
		Chhaproli	702.4	263.2	134.2				68.3	21.9		23.3	155.0
		Barot	682.7	281.0	124.3				89.3			47.7	110.0
		Bagpat	859.5	352.4	183.9				84.0			37.1	165.0
		Kirana	967.6	307.8	298.3				110.3			42.4	185.0
		Khekhda	972.5	419.3	253.5				99.8			47.7	110.0
		Binoli	736.8	272.1	183.9				84.0			37.1	125.0
6	**Bulandshahr**		**51975.0**	19080.8	5760.0				4473.2	17.5		4483.8	14776.3
		Sikandrabad	5711.8	2976.2	867.8				291.8			249.4	793.1
		Gulavati	3191.4	1090.2	786.9				228.2			408.6	419.3
		Lakhawati	4564.3	2074.6	984.7				281.2	13.1		228.2	570.8
		Bulandshahar	3539.8	1817.0	283.3				222.9	4.4		260.0	671.9
		Shikarpur	3611.5	1320.2	188.9				217.6			222.9	1470.1
		B.B. Nagar	1388.3	220.8	76.4				206.9			37.1	793.1
		Sayana	1485.6	262.2	89.9				222.9			164.5	702.2
		Jahangirabad	2607.5	501.4	287.8				307.8			100.8	1298.3
		Khurja	4108.4	1812.4	548.6				313.1			334.3	823.4
		Arnia	3196.6	1205.2	238.3				286.5			652.7	646.6
		Pahasu	5245.7	1968.8	472.1				482.9			541.2	1470.1
		Unchagaon	1342.1	340.4	76.4				148.6			100.8	621.4

S. No.	District	Block	Total Rice	Pusa-1121	Pusa Basmati-1	Type –3	HBC-19	Basmati-370	Pusa-1509	CSR-30	Sugandha 2,3&5	Sharbati	Sugandha
		Danpur	3596.1	1246.6	211.3				435.1			408.6	1050.8
		Dibai	3048.0	906.2	143.9				254.7			334.3	1227.6
		Anoopshahar	4041.8	943.0	278.8				429.8			334.3	1874.2
		Agota	1296.0	395.6	224.8				143.3			106.1	343.5
7	**Gaziabad + Hapur**		**26966.0**	5431.2	1400.0				2860.0			3092.3	4999.5
		Rajapura	3324.4	1391.5	205.0				46.9			315.7	197.0
		Loni	1291.2	451.4	90.0				67.7			80.3	146.5
		Muradnagar	2396.8	888.9	145.0				114.6			165.9	217.2
		Bhojpur	2092.6	316.5	70.0				151.1			155.2	702.0
		Hapur	5253.7	926.1	95.0				1172.1			48.2	1267.6
		Dholana	4830.7	861.0	215.0				234.4			1524.8	449.5
		Garh	4979.1	367.7	535.0				432.4			700.9	1136.3
		Simbhawali	2797.5	228.0	45.0				640.8			101.7	883.8
8	**Meerut**		**16280.0**	**2244.0**	**2332.4**				**2522.8**	**17.5**		**625.4**	**3192.6**
		Hastinapur	1937.2	66.1	497.8				90.1	4.4		270.3	46.0
		Jani	1084.1	246.9	191.1				153.7	0.0		10.6	214.5
		Mavana	1776.8	330.6	164.6				291.5			68.9	454.6
		Paricshitgarh	2161.7	127.9	299.9				259.7	13.1		121.9	628.3
		Meerut	724.8	154.3	76.4				100.7			10.6	168.6
		Kharkhonda	1257.2	158.7	44.1				392.2			26.5	352.5
		Machhara	1404.8	136.7	83.3				376.3			26.5	475.1
		Rohta	1007.1	189.6	191.1				206.7			37.1	137.9
		Sardana	1276.5	123.4	272.4				116.6			15.9	76.6
		Rajpura	1122.5	171.9	63.7				227.9			10.6	393.3
		Dorala	1225.2	260.1	240.1				132.5			10.6	97.1
		Saroorpur	1302.1	277.7	207.8				174.9			15.9	148.1
9	**Muzzfarnagar + Shamili**		**29785.0**	**4250.4**	**3900.4**				**2541.0**	**56.9**		**1263.6**	**1989.7**
		M. Nagar	2169.6	197.8	201.2				299.9			21.6	191.9
		Bagra	1705.3	179.4	260.0				184.1			70.2	146.5
		Sardhawan	2401.7	299.0	460.2				226.2	8.8		75.6	60.6
		Purkaji	3598.1	427.8	513.2				131.5	48.2		437.4	75.8
		Jansath	1803.5	197.8	363.1				178.9			75.6	166.7
		Khatoli	2544.6	299.0	289.5				205.2			48.6	217.2
		Borda	1526.7	225.4	122.7				131.5			48.6	96.0
		Shahpur	2008.9	391.0	202.1				115.7			37.8	156.6
		Udana	1776.7	262.2	217.8				152.6			21.6	126.3
		Kandla	1758.9	197.8	230.6				210.4			59.4	186.9
		Shamli	1982.1	418.6	279.7				184.1			43.2	96.0
		Udon	2044.6	418.6	230.6				121.0			64.8	176.8
		Kerana	1830.3	170.2	309.1				205.2			167.4	146.5
		Thanabhawan	2633.9	565.8	220.8				194.7			91.8	146.5
10	**Saharanpur**		**50504.0**	**6942.0**	**11889.9**	**1692.9**			**3254.2**	**21.9**		**7455.0**	**2878.5**
		Baliakheri	5283.8	692.4	1569.8	148.3			254.8	8.8		824.3	156.6
		Punwarka	5932.1	638.8	1495.5	123.6			223.0	13.1		834.8	3528.5
		Nakur	6016.4	853.2	1857.0	123.6			329.1			750.8	6211.5
		Sarsawan	5278.0	889.0	2084.8	0.0			254.8			887.3	2176.4
		Gangoh	5751.0	750.5	1931.3	185.4			127.4			540.8	1021.4
		Rampur Maniharan	5549.1	701.3	1005.3	370.7			329.1			1060.5	6672.9
		Nanota	6172.1	670.1	906.2	370.7			615.8			687.8	3217.1
		Devband	2272.7	402.0	168.4	0.0			366.3			57.8	4191.5
		Nagal	3455.2	625.4	564.5	247.1			366.3			624.8	2358.3
		Sadholikalan	2324.6	348.4	133.7	0.0			196.4			645.8	1650.9
		Muzzafarabad	2468.8	370.8	173.3	123.6			191.1			540.8	2730.9
11	**Moradabad**		**66504.0**	**931.2**	**297.0**				**2204.8**			**9298.8**	**2375.1**
		Billari	3436.6	158.7	63.9				468.0			1313.0	573.5
		Moradabad	4760.8	187.6	39.3				400.4			1340.0	390.8
		Chhajlet	3042.6	149.1	39.3				369.2			189.1	289.3
		Mudapanday	7923.8	62.5	31.5				145.6			1350.8	197.9
		Kundarki	8159.1	187.6	44.3				265.2			1566.9	664.8
		Thakurdwar	15300.4	94.3	44.3				223.6			1096.8	147.2
		Bhagatpur Tandan	12017.0	52.9	19.7				156.0			1096.8	45.7
		Dillari	11863.8	38.5	14.8				176.8			1345.4	66.0
12	**Bijnore**		**43714.5**	**1474.2**	**3118.5**				**2268.0**			**18072.3**	**1340.0**
		Mohamadpur	3001.0	68.5	207.8				215.3			1193.8	120.0
		Devmal Haldore	3208.2	100.4	242.5				110.3			1514.9	110.0
		Nurpur	3508.3	105.0	272.2				120.8			1729.1	110.0
		Jalilpur	4308.6	59.3	282.1				204.8			1771.9	125.0
		Dhampur	2679.5	100.4	183.1				147.0			1204.5	105.0
		Chuhara	2922.4	77.6	196.0				120.8			1557.8	75.0

S. No.	District	Block	Total Rice	Pusa-1121	Pusa Basmati -1	Type –3	HBC-19	Basmati-370	Pusa-1509	CSR-30	Sugandha 2,3&5	Sharbati	Sugandha
		Mehtore	2829.5	82.2	193.0				110.3			1482.8	105.0
		Afjalgarh	4265.7	141.5	351.3				535.5			1761.2	85.0
		Kotwali	6830.8	260.2	572.0				357.0			1697.0	205.0
		Najibabad	7223.8	314.9	579.0				225.8			2719.4	105.0
		Keeratpur	2936.7	164.3	39.6				120.8			1440.0	195.0
13	**Rampur**		**112404.0**	**652.8**	**138.6**				**1203.6**			**23971.5**	**191.9**
		Subar	20199.2	91.9	34.7				158.1			4332.2	40.4
		Vilaspur	20098.7	140.2	39.6				219.3			3313.5	30.3
		Shayatnagar	17765.1	53.2	9.9				198.9			2326.3	25.3
		Chabraoa	16034.2	82.2	14.9				219.3			3628.5	40.4
		Shahabad	17312.9	149.9	14.9				188.7			4468.7	40.4
		Milakh	20993.8	135.4	24.8				219.3			5902.3	15.2
14	**J.P. Nagar**		**15974.0**	**1152.0**	**960.3**				**1998.2**			**7233.2**	**2757.3**
		Amroha	2728.4	183.2	108.9				365.7			626.0	439.4
		Joya	2518.9	159.1	64.4				561.4			1086.1	570.7
		Dhanora	2869.6	245.8	311.9				360.5			1203.8	459.6
		Gajrola	2924.2	269.9	138.6				273.0			1342.9	580.8
		Hasanpur	2313.9	106.0	183.2				221.5			1278.7	444.4
		Gangeshwani	2619.1	188.0	153.5				216.3			1696.0	262.6
15	**Pilibhit**		**152500.0**	**827.2**	**158.4**				**3429.9**			**5406.0**	**377.4**
		Nurori	15849.4	115.1	13.2				237.3			578.8	43.5
		Lalorikhera	8834.4	107.9	33.0				204.9			782.3	21.8
		Amaria	22348.8	115.1	13.2				399.1			305.3	58.1
		Badkhera	12205.6	79.1	39.6				420.6			540.6	58.1
		Beejalpur	13633.3	57.5	33.0				399.1			833.2	79.8
		Bilsanda	18298.4	129.5	13.2				593.2			941.3	58.1
		Puranpur	61330.2	223.0	13.2				1175.7			1424.6	58.1
16	**Agra**		**3956.5**	**319.2**	**72.0**				**483.0**			**0.0**	**2181.6**
		Achhnera	2314.8	123.4	31.5				228.2			0.0	1331.2
		Atmadpur	311.9	46.8	18.0				47.8			0.0	156.9
		Fetehpur Sikri	1329.8	149.0	22.5				207.0			0.0	693.5
17	**Bareilly**		**150084.0**	**1244.5**	**465.3**				**665.6**	**595.7**		**46375.0**	**494.9**
		Khyora	5186.4	85.8	29.6				10.4	8.8		1669.5	45.5
		Bitlichainpur	11742.3	57.2	29.6				57.4	21.9		2082.9	40.4
		Bhojipur	9082.4	42.9	9.9				46.9	35.0		2920.3	35.4
		Fatehganj	5913.2	23.8	14.8				88.7	48.2		768.5	25.3
		Meerganj	6501.5	81.1	14.8				46.9	8.8		2098.8	25.3
		Fareedpur	11327.0	57.2	54.2				67.8	21.9		2268.4	35.4
		Bhutha	12315.8	76.3	44.4				57.4	48.2		2453.9	40.4
		Nababganj	13799.1	71.5	34.5				62.6	74.5		4372.5	25.3
		Bhairpura	9675.7	166.9	34.5				57.4	35.0		4086.3	25.3
		Bahedi	13957.3	66.8	39.4				26.1	35.0		4218.8	30.3
		Damekhoda	10634.8	90.6	41.4				36.5	65.7		3662.3	45.5
		SeeshGarh	9438.3	109.7	54.2				26.1	48.2		4086.3	40.4
		Alampur	12711.4	147.8	24.6				20.9	74.5		4467.9	10.1
		Jafrabad	9141.7	104.9	14.8				57.4	39.4		4192.3	35.4
		Majhagwa	8657.2	62.0	24.6				3.1	30.7		3026.3	35.4
18	**Badaun**		**47800.0**	**1919.0**	**742.5**				**2069.6**	**8301.9**		**20753.7**	**1969.5**
		Badaun	2077.0	61.9	39.6				36.1	48.2		935.7	65.7
		Asabpur	1868.2	185.7	9.9				56.8	83.2		1040.3	111.1
		Islamnagar Bisoli	2139.1	61.9	39.6				191.0	131.4		1301.7	75.8
		Bajirganj	1721.5	52.4	24.8				113.5	188.3		893.9	55.6
		Dangawan	1602.9	47.6	24.8				87.7	162.1		1029.8	75.8
		Sahswan	3335.7	61.9	24.8				160.0	275.9		1615.3	156.6
		Auiyapur	2771.3	42.9	24.8				113.5	188.3		1552.6	65.7
		Salarpur	3623.5	147.6	29.7				263.2	834.0		1301.7	247.5
		Jagat	3211.5	90.5	34.7				160.0	337.3		1610.1	156.6
		Ujhiani	2872.9	176.2	54.5				180.6	275.9		1343.5	146.5
		Kodarchock	3109.9	176.2	44.6				144.5	661.4		1301.7	141.4
		Samred	5655.4	323.8	108.9				113.5	1940.3		1730.3	217.2
		Dataganj	5367.6	147.6	89.1				263.2	1738.9		1678.1	272.7
		Mayaoo	5107.9	176.2	54.5				87.7	862.9		2075.4	85.9
		Usava	3335.7	166.7	138.6				98.1	573.8		1343.5	96.0
19	**Kannauj**		**12322.0**	**630.5**	**158.4**				**1407.6**			**136.5**	**1424.1**
		Chhibramau	1933.6	53.4	12.7				87.0			10.5	116.6
		Talgram	1532.1	87.3	12.7				153.6			31.5	248.3
		Sorikh	2143.1	38.8	57.0				220.1			15.8	446.0
		Haseran	2256.6	189.2	19.0				363.4			10.5	288.9
		Jalalabad	336.1	72.8	6.3				56.3			15.8	40.5
		Kakor	1728.5	63.1	25.3				179.1			31.5	187.5
		Umardha	2029.7	82.5	12.7				250.8			10.5	55.7
		Jugrajpur	362.3	43.7	12.7				97.3			10.5	40.5
20	**Firozabad**		**12524.0**	**2260.1**	**237.6**				**1305.6**			**124.2**	**5322.7**
		Tundla	219.6	43.7	10.1				87.0			10.4	70.7
		Narkhi	358.3	43.7	10.1				66.6			10.4	141.4

S. No.	District	Block	Total Rice	Pusa-1121	Pusa Basmati -1	Type –3	HBC-19	Basmati-370	Pusa-1509	CSR-30	Sugandha 2,3&5	Sharbati	Sugandha
		Shikohobad	2045.6	345.1	15.2				189.4			20.7	1065.6
		Madanpur	2045.6	306.2	15.2				112.6			25.9	1136.3
		Araon	1348.3	179.8	50.6				291.8			15.5	661.6
		Jasrana	4719.1	1093.6	70.8				363.5			25.9	1429.2
		Hathbant	150.2	19.4	5.1				46.1			15.5	45.5
		Eka	1637.3	228.4	60.7				148.5			0.0	772.7
21	**Mathura**		**35717.0**	**22831.9**	**1049.4**				**3433.5**			**275.6**	**3423.9**
		Mathura	3988.4	3044.6	39.6				330.8			42.9	156.8
		Govardhan	4471.9	3172.0	212.9				225.8			12.2	187.1
		Nand Gaon	4979.5	3172.0	94.1				472.5			24.5	101.1
		Chhata	7870.5	4742.0	306.9				787.5			12.2	242.8
		Chomuha	3824.1	2716.9	123.8				456.8			6.1	202.3
		Farah	1469.7	468.7	24.8				299.3			49.0	576.6
		Baldev	981.4	350.4	34.7				141.8			49.0	343.9
		Raya	1049.1	277.6	39.6				204.8			18.4	531.0
		Manth	3007.0	1597.4	84.2				367.5			12.2	763.7
		Navjhil	4075.5	3290.3	89.1				147.0			49.0	318.6
22	**Mainpuri**		**48042.0**	**15475.2**	**202.0**				**2464.8**			**156.0**	**5970.0**
		Kurawali	2372.9	686.4	5.1				203.2			5.2	415.3
		Ghiroor	6899.2	1872.0	15.2				364.8			20.8	985.8
		Sultanganj	3344.5	1396.8	40.4				401.2			31.2	640.5
		Bebar	3036.2	763.2	20.2				255.3			36.4	525.4
		Kishani	8179.1	1454.4	40.4				469.0			20.8	955.8
		Mainpuri	11168.5	3988.8	60.6				359.6			10.4	1256.1
		Jageer	11350.7	4656.0	10.1				255.3			20.8	765.6
		Karahal Barnahal	1690.9	657.6	10.1				156.3			10.4	425.4
23	**Etawah**		**40602.0**	**6203.4**	**158.4**				**2565.4**			**62.1**	**4585.4**
		Saifai	7537.5	877.1	13.8				247.9			11.3	545.4
		Jaswantnagar	5025.0	553.7	41.3				592.0			22.6	681.8
		Badpura	1036.7	289.1	34.4				141.7			5.6	136.4
		Basrehar	6712.3	994.7	27.5				349.1			0.0	489.9
		Bhartana	9034.4	935.9	13.8				354.2			0.0	772.7
		Takha	6950.4	1519.0	13.8				546.5			11.3	1252.4
		Maheva	4189.3	1019.2	6.9				318.8			5.6	691.9
		Chakarnagar	116.4	14.7	6.9				15.2			5.6	15.2
24	**Farrukhabad**		**11322.0**	**1748.0**	**59.4**				**854.9**			**136.5**	**2385.3**
		Badpura	1269.9	14.3	0.0				36.4			15.8	177.6
		Rajepur	1328.8	38.1	10.8				57.3			36.8	314.7
		Kamalganj	1805.7	33.3	5.4				130.2			42.0	421.2
		Mohamdabad	1591.4	28.6	21.6				223.9			5.3	603.9
		Nababganj	1875.4	23.8	16.2				203.1			31.5	360.3
		Shamshabad	1655.7	14.3	0.0				192.6			0.0	319.7
		Kayamganj	1795.0	1595.6	5.4				11.5			5.3	187.8
25	**Auriya**		**44945.0**	**1030.4**	**49.5**				**164.8**	**586.9**		**1754.4**	**190.0**
		Auriya	6004.7	138.0	0.0				15.9	4.4		168.8	35.0
		Ajitmal	6103.0	78.2	11.0				21.3	13.1		393.8	40.0
		Bhagwantnagar	7665.7	165.6	22.0				53.2	258.4		526.8	35.0
		Bidhuna	7884.2	193.2	0.0				26.6	249.7		301.8	25.0
		Achalda	4868.2	78.2	5.5				42.5	26.3		102.3	0.0
		Sahar	5698.7	289.8	0.0				5.3	21.9		92.1	15.0
		Aerwakatra	6720.4	87.4	11.0				0.0	13.1		168.8	40.0
26	**Shahjahanpur**		**197051.0**	**1532.2**	**267.3**				**840.0**	**1493.6**		**8688.4**	**426.3**
		Banda	20387.9	94.3	24.8				58.1	65.7		766.5	0.0
		Khutar	10909.6	89.6	0.0				52.8	26.3		664.6	0.0
		Puvahya	17150.9	174.4	24.8				42.3	83.2		873.7	20.2
		Sindholi	18465.9	94.3	39.6				37.0	83.2		873.7	55.6
		Khudaganj	14824.3	75.4	9.9				58.1	118.3		670.0	20.2
		Jaitipur	10646.6	80.1	0.0				42.3	118.3		852.2	10.1
		Tilhar	9898.1	33.0	9.9				37.0	48.2		305.5	30.3
		Nigohi	11496.3	141.4	9.9				37.0	74.5		380.6	20.2
		Kanth	11243.4	51.9	5.0				42.3	74.5		32.2	35.4
		Dadrol	11142.3	61.3	19.8				58.1	52.6		519.9	32.3
		Bhaavalkheda	10459.5	61.3	14.9				89.8	109.5		487.8	40.4
		Clan	13307.0	231.0	19.8				110.9	249.7		734.3	40.4
		Mirjapur	9898.1	132.0	29.7				47.5	184.0		455.6	50.5
		Jalalabad	11688.5	108.4	29.7				100.4	61.3		766.5	30.3
		Madanpur	15532.4	103.7	29.7				26.4	144.5		305.5	40.4
27	**Sambhal**		**28458.0**	**1444.4**	**396.0**				**1736.8**	**17.5**		**8533.0**	**4393.5**
		Junamai	2184.0	170.2	34.7				88.4			832.1	419.6
		Gunnour	1959.7	115.0	19.8				88.4			784.4	389.3
		Rajpura	1788.1	151.8	29.7				98.8			726.1	268.0
		Baniakhera	5212.6	170.2	64.4				244.4			1605.9	399.4

S. No.	District	Block	Total Rice	Pusa-1121	Pusa Basmati -1	Type –3	HBC-19	Basmati-370	Pusa-1509	CSR-30	Sugandha 2,3&5	Sharbati	Sugandha
		Bahjoi	3107.7	142.6	39.6				327.6			620.1	328.6
		Sambhal	5615.1	262.2	79.2				327.6			1653.6	1264.0
		Pawansa	2316.0	105.8	29.7				192.4			768.5	359.0
		Asmoli	6274.9	326.6	99.0				369.2			1542.3	965.7
	Total		**1336190**	**144127**	**42840**	**12840**	**0.0**	**0.0**	**55950.3**	**11140.1**	**0.0**	**173560**	**91720**

Block wise and Variety wise acreage under total rice and Basmati + Scented varieties in U.K (2017)

Sl. No.	District	Block	Total Rice	Basmati varieties							Long Grain Non-Basmati
				Pusa Basmati-1121	Pusa Basmati-1	Type–3	HBC-19	CSR-30	Basmati-370	Pusa Basmati-1509	Sharbati
1	**Haridwar**		14342	1408	2156.00	176	428	907	799	505	3731.476
		Bahadurabad	3650	416	456	53.9	259.7	249.9	225.4	101	906
		Narsan	1871	174	316	0	39.2	122.5	34.3	83	297
		Rurki	2490	255	286	24.5	31.36	151.9	63.7	64	609
		Lakshar	1768	264	356	58.8	34.3	39.2	63.7	64	432
		Khanpur	2284	107	356	9.8	39.2	308.7	377.3	101	422
		Bhagwanpur	2279	192	386	29.4	24.5	34.3	34.3	92	1067
2	**Dehradun**		7474	328	0	1725	0	519	402	202	2474.5
		Doibala	1796	127	0	387	0	83	0	84	731
		Raypur	519	0	0	132	0	183	0	51	66
		Sahjpur	1769	87	0	348	0	1818	0	34	721
		Vikash Nagar	1833	100	0	534	0	519	0	34	711
		Kalasi	831	13	0	162	0	470	0	0	156
		Chackrata	726	0	0	162	0	601	0	0	91
3	**U S Nagar**		100293	1520	117.6	62	353	152	146	1522.5	7486.5
		Khatima Sitar	15546	94	0	0	14	0	0	111	588
		Ganj	17366	59	0	10	10	0	0	121	467
		Bajpur	15006	195	0	0	0	0	24	329	1028
		Rudrapur	14378	400	26	11	11	109	13	253	1338
		Jaspur	12884	176	46	24	48	43	33	268	1521
		Kashipur	11321	269	0	10	33	0	76	313	1102
		Gadarpur	13792	328	46	8	238	0	0	127	1443
4	**Nainital**		8585	282	0.00	573	0	245	39	303	1414
		Betalghat	358	0	0	0	0	0	0	0	116
		Bhimtal	307	0	0	0	0	0	0	0	70
		Dhari	40	0	0	0	0	0	0	0	0
		Ramgarh	199	0	0	0	0	0	0	0	0
		Okhalgola	358	0	0	0	0	0	0	0	0
		Haldwani	2728	108	0	294	0	147	25	135	556
		Ram Nagar	2465	145	0	279	0	98	15	168	672
		Kotabag	2130	29	0	0	0	0	0	0	0
	Total		**130700**	**3538**	**2274**	**6444**	**782**	**1823**	**1386**	**2533**	**14970**

Block wise and Variety wise acreage under total rice and Basmati + Scented varieties in J.K (2017)

Sl. No.	District	Block	Total Rice	Pusa Basmati-1121	Basmati-370	Sharbati
1	**Jammu**		**85000**	**1358**	47203	9129
		Akhnoor	0	0	9257	3060
		Balwal	0	0	1114	153
		Bishnah	0	1314	2129	1938
		Marh	0	0	4208	255
		R.S. Pura	0	44	21782	2856
		Satwari	0	0	8713	867
2	**Kathua**		42000	6272	3762	744.6
		Kathua	0	2744	1485	230
		Hiranagar	0	2303	1634	357
		Barnoti	0	1225	644	158
3	**Samba**		12000	582	2099	275
		Samba & Rehian	0	340	495	68

Sl. No.	District	Block	Total Rice	Pusa Basmati-1121	Basmati-370	Sharbati
		Vijaypur & Ramgarh	0	243	1139	104
		Purumandal & Yakh	0	0	119	0
		Gaghwal	0	0	347	104
	Total		**139000**	**8212**	**53064**	**10149**

Annexure 2

State-Mandi wise arrival / prices

HARYANA

Basmati & Non-Basmati Long Grain Rice Area during Kharif 2017

Basmati 1121 Arrival & Prices Haryana (INR / Qtl)

APMC	01/09/2017-13/12/2017	13-Dec	06-Dec	30-Nov	23-Nov
	Commodity Arrivals(Quintal)	Prices (INR /Qtl)			
AMBALA	62111.68	3204	3204	3300	3500
BARWALA HISAR	354372.26	3100	3100	3321	3000
CHEEKA	69125.26	3300	3300	3300	3300
DHAND	8152				
GANAUR	351790.5	2931	2931	3171	3181
GHARAUNDA	254434	3280	3280	3000	3201
GOHANA	1314444.38	3070	3070	2931	3071
HANSI	346751	2911	2911	3331	3300
HODAL	8464				
INDRI	94094.8	3285	3285	3211	3280
ISMAILABAD	51051.9	3325	3325	3350	3231
JAKHAL	12225.64	2824	2824	2824	2824
JIND	633563.5	3250	3250	3361	2750
JULLANA	796180.45	3261	3261	3225	3230
KALAYAT	325747.2	3351	3351	2951	2951
KARNAL	144210.5	3200	3200	3200	2700
LADWA	23020	3370	3370	3225	3340
MADLAUDA	496783.5	3340	3340	4011	3141
NARNAUND	172125.13	3361	3361	3300	3121
NARWANA	207225.53	2911	2911	3000	3231
NISSING	93246.2	3955	3955		
PALWAL	136951.25	3261	3261	3261	3051
PANIPAT	415038.51	3321	3321	3321	3271
PEHOWA	34722				
PILLUKHERA	326283.75	3321	3321	3361	3191
PUNDRI	67662.63	3161	3161	3100	2995
RANIA	560	3100	3100	2670	2670
RATIA	14220	3000	3000	2960	2600
REWARI	27440.5	3375	3375	3231	3025
ROHTAK	432177.5	3261	3261	3261	3261
SAFIDON	410651.51	3225	3225	3321	3251
SAMALKHA	550343.59	3811	3811	3301	3081
SHAHBAD	14049.75	3182	3182		
SIRSA	30	2700	2700	2700	2700
SONEPAT	261479.83	3371	3371	3231	2751
TARAORI	79398	3330	3330	3300	3300

THANESAR	10898.7	2325	2325	2325	2325
TOHANA	151891.75	3210	3210	3210	3080
UCHANA	135055.85	3360	3360	3151	2950

Basmati & Non-Basmati Long Grain Rice Area during Kharif 2017

Basmati 1509 Arrival & Prices (INR / Qtl)

APMC	**01/09/2017-13/12/2017**	**13-Dec**	**06-Dec**	**30-Nov**	**23-Nov**
	Commodity Arrivals(Quintal)	***Prices (INR /Qtl)***			
AMBALA	4108.75	2651	2651	2651	2928
ASANDH	35827.72	2600	2600	2600	2450
BARWALA HISAR	18442.88	3310	3310	3000	2700
CHEEKA	92612.13	2625	2625	2625	2625
DHAND	19538.75	2641	2641	2641	2641
ELLANABAD	35284.2	2795	2795	2675	2661
FATEHABAD	45080	2700	2700	2700	2230
GANAUR	106457.75	2786	2786	2401	2401
GHARAUNDA	272052	2891	2891	2790	2711
GOHANA	176914.2	3200	3200	2800	2800
HANSI	62812	2931	2931	2825	2825
HODAL	2746				
INDRI	159541	2480	2480	2480	2465
ISMAILABAD	18272	2681	2681	2681	2681
JAKHAL	7066.5	2800	2800	2800	2800
JIND	55951.48	2595	2595	2690	2701
JULLANA	45412	3381	3381	2201	2351
KAITHAL	38490.25	2340	2340	2340	2340
KALAYAT	24784.6	2805	2805	2805	2805
KARNAL	272126	2750	2750	2550	1800
LADWA	77269	2600	2600	2500	2505
MADLAUDA	55002	3260	3260	3260	2681
NARNAUND	6233	2181	2181	2161	1825
NARWANA	20557.25	2701	2701	2701	2701
NISSING	121143	2574	2574	2574	2574
PALWAL	29827				
PANIPAT	134390.3	3900	3900	2791	2571
PEHOWA	28986	2265	2265	2265	2265
PILLUKHERA	52320.75	2751	2751	3500	3500
PUNDRI	72170.39	2931	2931	2931	2850
RANIA	65416.25	2700	2700	2621	2551
RATIA	11821	2550	2550	1590	1590
REWARI	2480	2751	2751	2751	2743
ROHTAK	26269.5	2331	2331	2331	2331
SAFIDON	104633.85	3100	3100	2650	3110
SAMALKHA	204714.89	2805	2805	2805	2581
SHAHBAD	13230.38				
SIRSA	124523.1	2741	2741	2750	2850
SONEPAT	73330.03	2800	2800	2651	2801

TARAORI	223322	2921	2921	2881	2881
THANESAR	62113.49	2545	2545	2545	2545
TOHANA	217869.62	2760	2760	2760	2350
UCHANA	11575.48	3181	3181	3181	3181

UTTAR PRADESH

Basmati & Non-Basmati Long Grain Rice Area during Kharif 2017

Basmati 1121 Arrival & Prices U.P

APMC	01/09/2017-13/12/2017	13-Dec	06-Dec	30-Nov	23-Nov
	Arrivals(Quintal)	***Prices (INR /Qtl)***			
ETAWAH	47	2661	2661	2661	2661
MATHURA	1203.5	2971	2971	3111	3111
SAHARANPUR	4981	2920	2920	2900	2680

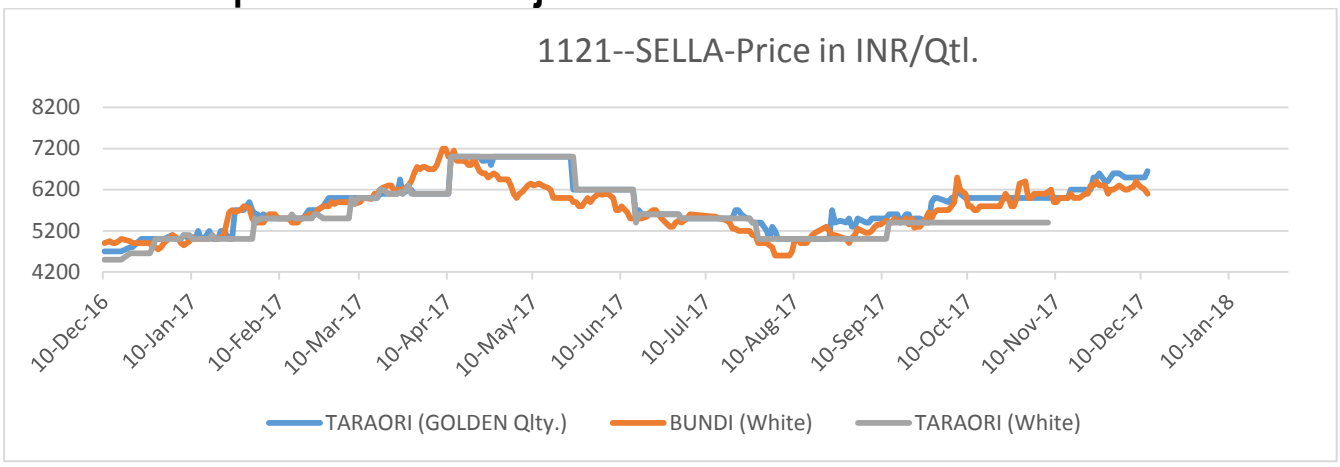
Basmati & Non-Basmati Long Grain Rice Area during Kharif 2017
Basmati 1509 Arrival & Prices U.P

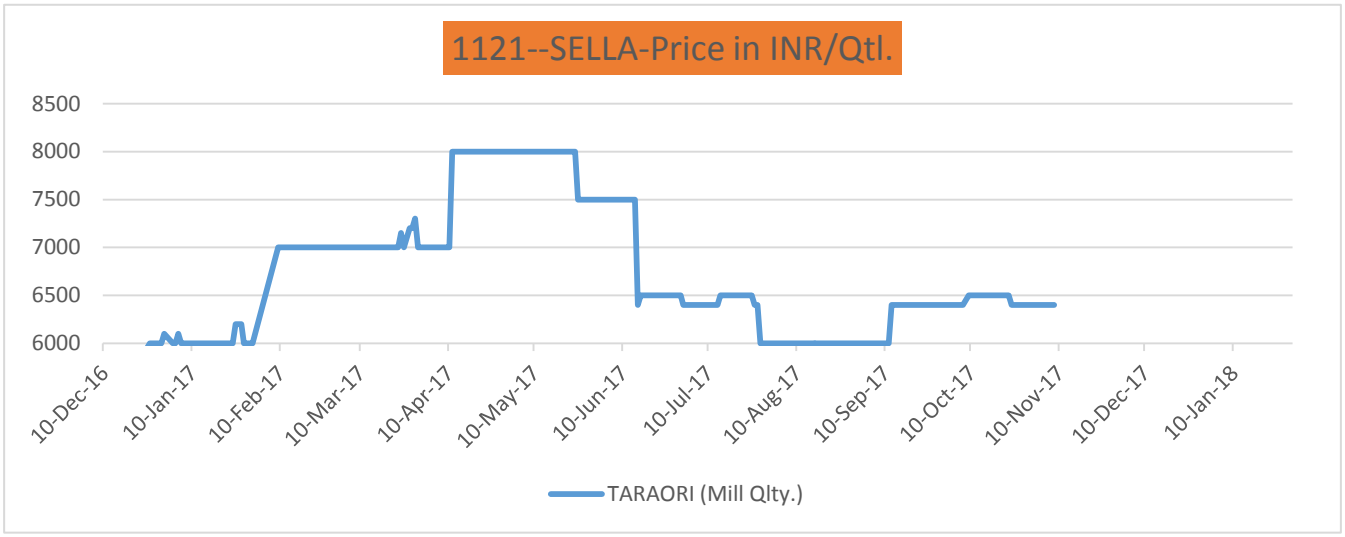
APMC	**01/09/2017-13/12/2017**	**13-Dec**	**06-Dec**	**30-Nov**	**23-Nov**
	Arrivals(Quintal)	***Prices (INR /Qtl)***			
ALIGARH	996	2600	2600	2600	2600
DADRI UP	186	2650	2650	2650	2650
ETAWAH	35	2250	2250	2250	2250
KHAIR	48424	2691	2691	2650	2701
MAINPURI	88100.6	2350	2350	2300	2205
MATHURA	567	3001	3001	3001	3001
MILAK	24	1750	1750	1750	1750
RAMPUR BILASPUR	5025	2140	2140	2131	2005
SAHARANPUR	7683.4	2625	2625	2625	2625

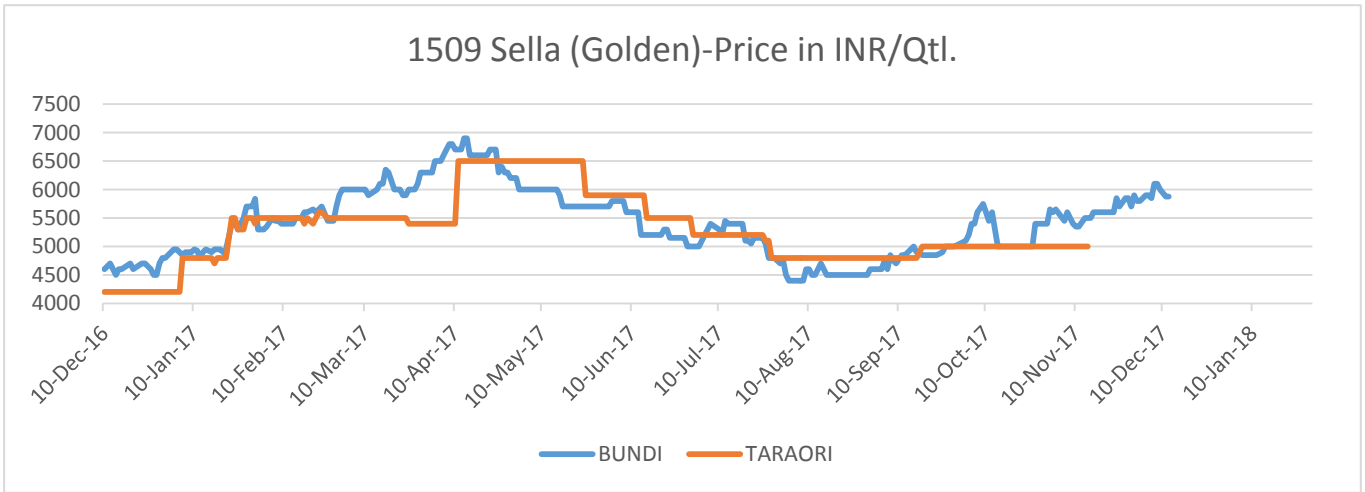
Mandi Arrival are only indicative figures which is indicated on e-NAM platform. The price levels are also indicative and not on the overall arrivals which have been traded in the market place. Any discrepancy, if any in the prices/ mandi arrivals can be re-validated further if required

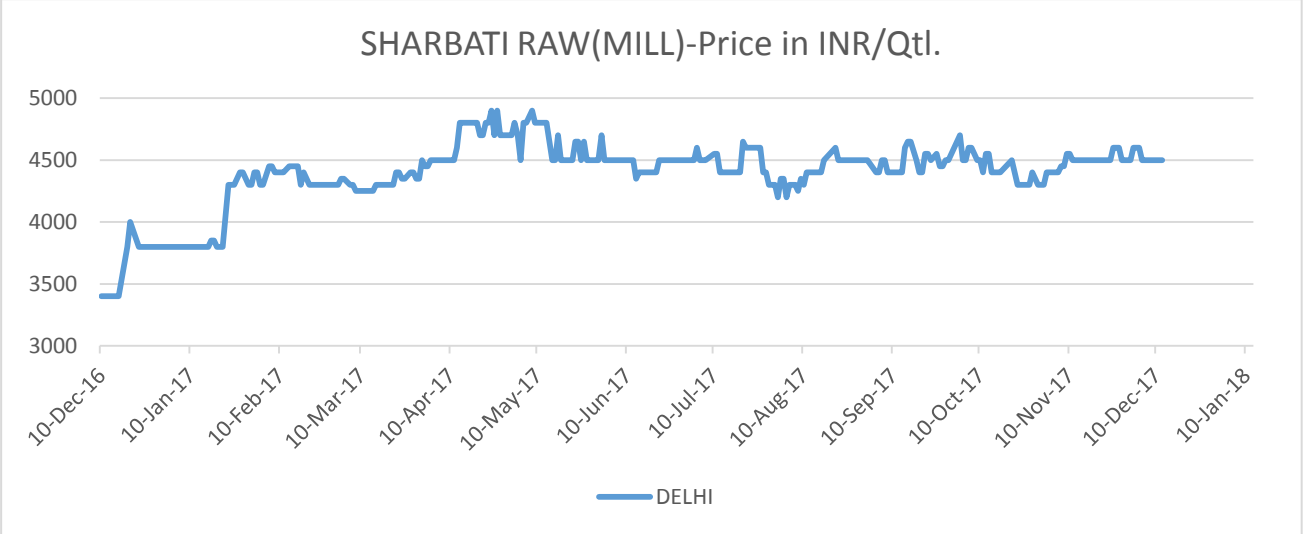
Annexure 3

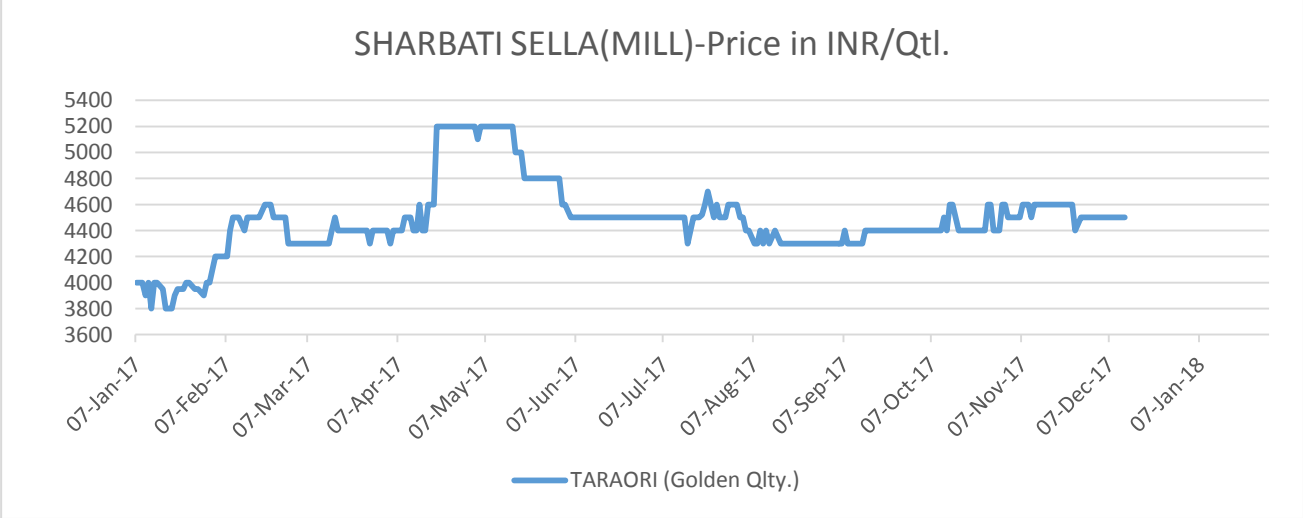
All India Rice price trends in major markets

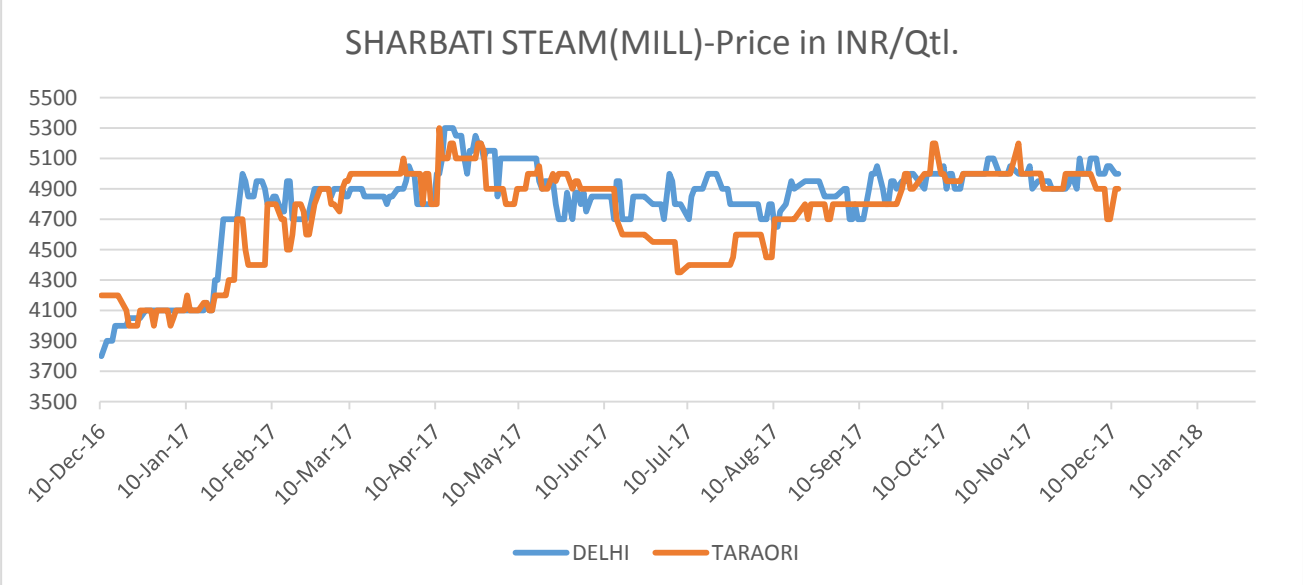







SHARBATI RAW(MILL)-Price in INR/Qtl.
5000
4500
4000
3500
3000
10-Dec-16
10-Jan-17
10-Feb-17
10-Mar-17
10-Apr-17
10-May-17
10-Jun-17
10-Jul-17
10-Aug-17
10-Sep-17
10-Oct-17
10-Nov-17
10-Dec-17
10-Jan-18
DELHI


SHARBATI SELLA(MILL)-Price in INR/Qtl.
5400
5200
5000
4800
4600
4400
4200
4000
3800
3600
07-Jan-17
07-Feb-17
07-Mar-17
07-Apr-17
07-May-17
07-Jun-17
07-Jul-17
07-Aug-17
07-Sep-17
07-Oct-17
07-Nov-17
07-Dec-17
07-Jan-18
TARAORI (Golden Qlty.)


SHARBATI STEAM(MILL)-Price in INR/Qtl.
5500
5300
5100
4900
4700
4500
4300
4100
3900
3700
3500
10-Dec-16
10-Jan-17
10-Feb-17
10-Mar-17
10-Apr-17
10-May-17
10-Jun-17
10-Jul-17
10-Aug-17
10-Sep-17
10-Oct-17
10-Nov-17
10-Dec-17
10-Jan-18
DELHI
TARAORI

Annexure 4

Monsoon Report

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. The new variety Pusa Basmati-1509 has reduced to very less area due to very low returns last year. The rainfall during 1-06-2017 to 30 -09-2017 in meteorological divisions under study area is given in below table and the rainfall in prominent districts (Haryana, Punjab, U.P, U.K, J & K, H.P, Delhi)

Haryana/Districts	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
AMBALA	553.9	916.6	-40%	Deficient
BHIWANI	227.0	348.5	-35%	Deficient
FARIDABAD	577.8	600.2	-4%	Normal
FATEHABAD	137.8	283.0	-51%	Deficient
GURGAON	243.0	472.3	-49%	Deficient
HISAR	247.9	325.1	-24%	Deficient
JHAJJAR	385.7	417.3	-8%	Normal
JIND	327.9	415.6	-21%	Deficient
KAITHAL	375.5	384.0	-2%	Normal
KARNAL	557.3	577.0	-3%	Normal
KURUKSHETRA	410.7	563.0	-27%	Deficient
MAHENDRAGARH	310.3	395.4	-22%	Deficient
MEWAT	404.2	501.8	-19%	Normal
PALWAL	284.9	446.9	-36%	Deficient
PANCHKULA	405.3	950.4	-57%	Deficient
PANIPAT	311.7	521.7	-40%	Deficient
REWARI	364.5	435.8	-16%	Normal
ROHTAK	255.1	508.0	-50%	Deficient
SIRSA	152.9	242.1	-37%	Deficient
SONIPAT	380.2	534.3	-29%	Deficient
YAMUNANAGAR	813.8	892.1	-9%	Normal
TOTAL HARYANA	**341.9**	**459.8**	**-26%**	**Deficient**

Punjab/Districts	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
AMRITSAR	444.3	537.6	-17%	Normal
BARNALA	276.3	355.6	-22%	Deficient
BATHINDA	310.7	321.0	-3%	Normal
FARIDKOT	273.6	325.1	-16%	Normal
FATEHGARH SAHIB	379.9	547.1	-31%	Deficient
FIROZPUR	59.8	352.3	-83%	Large Deficient
GURDASPUR	1009.3	827.8	22%	Excess
HOSHIARPUR	390.9	717.9	-46%	Deficient
JALANDHAR	337.8	551.5	-39%	Deficient
KAPURTHALA	600.5	422.6	42%	Excess
LUDHIANA	461.9	534.2	-14%	Normal
MANSA	220.7	334.8	-34%	Deficient
MOGA	476.6	354.0	35%	Excess
MUKTSAR	286.0	311.8	-8%	Normal
NAWASHAHR	793.8	788.6	1%	Normal

Punjab/Districts	Period:01-06-2017 To 30-09-2017			
PATIALA	432.0	615.2	-30%	Deficient
RUPNAGAR	773.0	728.5	6%	Normal
SANGRUR	209.6	436.8	-52%	Deficient
SAS NAGAR	493.9	644.5	-23%	Deficient
TARN TARAN	167.0	336.8	-50%	Deficient
Punjab Total	**384.9**	**491.9**	**-22%**	**Deficient**

Uttar Pradesh/District	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	**NORMAL (mm)**	**% DEP.**	**Rainfall Status**
Agra	273.7	687.2	-60%	Large Deficient
Aligarh	558.3	655.7	-15%	Normal
Auraiya	309.5	700.0	-56%	Deficient
Baghpat	553.5	545.3	2%	Normal
Bareilly	895.8	853.8	5%	Normal
Bijnore	938.6	914.2	3%	Normal
Budaun	552.4	758.0	-27%	Deficient
Bulandshahr	503.6	670.7	-25%	Deficient
Etah	478.6	615.3	-22%	Deficient
Farukhabad	604.5	743.4	-19%	Normal
Firozabad	618.1	676.3	-9%	Normal
Etawah	377.7	728.0	-48%	Deficient
Gautam Buddha Nagar	618.1	676.3	-9%	Normal
Ghaziabad+Hapur	290.1	572.8	-49%	Deficient
Mathura	260.7	579.9	-55%	Deficient
Mainpuri	562.1	655.3	-14%	Normal
Meerut	507.7	778.5	-35%	Deficient
Moradabad	892.2	855.2	4%	Normal
J.P.Nagar	723.5	783.0	-8%	Normal
Kannauj	649.7	776.7	-16%	Normal
Muzaffarnagar+Shamli	477.3	736.8	-35%	Deficient
Pilibhit	446.7	988.6	-55%	Deficient
Rampur	484.9	915.5	-47%	Deficient
Saharanpur	690.4	804.6	-14%	Normal
Shahjehanpur	508.1	859.2	-41%	Deficient
UP Total	**602.5**	**846.1**	**-29%**	**Deficient**

Uttarakhand/District	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
ALMORA	997.5	858.4	16%	Normal
BAGESHWAR	1129.2	858.4	32%	Excess
CHAMOLI	1242.1	859.3	45%	Excess
CHAMPAWAT	1270.9	1319.7	-4%	Normal
DEHRADUN	1718.6	1802.1	-5%	Normal
HARIDWAR	927.1	961.9	-4%	Normal
NANITAL	1750.8	1439.1	22%	Excess
PAURI GARHWAL	898.3	1213.5	-26%	Deficient
PITHORAGARH	1488.3	1687.9	-12%	Normal
RUDRAPRAYAG	1492.0	1671.1	-11%	Normal
TEHRI GARWAL	787.9	1047.1	-25%	Deficient
UDHAM SINGH NAGAR	946.7	1119.9	-15%	Normal
UTTARKASHI	951.5	1148.6	-17%	Normal
Uttarakhand Total	**1199.0**	**1229.1**	**-2%**	**Normal**

J & K/District	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
Jammu	819.5	860.5	-5%	Normal
Kathua	1105.2	982.0	13%	Normal
Samba	581.8	860.5	-32%	Deficient
J & K Total	**545.4**	**534.6**	**2%**	**Normal**

HP/District	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
BILASPUR	953.9	877.0	9%	Normal
CHAMBA	708.0	1406.4	-50%	Deficient
HAMIRPUR	1077.8	1078.9	0%	Normal
KANGRA	1631.6	1582.1	3%	Normal
KINNAUR	180.1	264.2	-32%	Deficient
KULLU	593.1	519.7	14%	Normal
Mandi	1195.8	1093.4	9%	Normal
Simla	640.1	633.9	1%	Normal
Sirmaur	1213.1	1324.6	-8%	Normal
Solan	839.6	1000.1	-16%	Normal
Una	1019.2	862.7	18%	Normal
HP Total	**720.7**	**825.3**	**-13%**	**Normal**

Delhi/District	Period:01-06-2017 To 30-09-2017			
	ACTUAL (mm)	NORMAL (mm)	% DEP.	Rainfall Status
CENTRAL DELHI	584.8	636.2	-8%	Normal
NEW DELHI	700.5	636.2	10%	Normal
NORTH DELHI	519.5	636.2	-18%	Normal
NORTH EAST DELHI	259.5	636.2	-59%	Deficient
NORTH WEST DELHI	419.0	636.2	-34%	Deficient
SOUTH DELHI	460.1	636.2	-28%	Deficient
SOUTH WEST DELHI	424.4	636.2	-33%	Deficient
WEST DELHI	500.5	636.2	-21%	Deficient
Delhi Total	**442.6**	**636.2**	**-30%**	**Deficient**

Annexure 4

Basmati crop diseases & commonly used pesticides/ chemicals in 7 studied area

S.No.	Crop Stages	Diseases & Pests	Pesticides
1	Milking stage	Brown plant Hopper	Buprofezin 25 % SC - 330 ml/Acre
2	Tillering to heading stage	Sheath blight	Hexaconazole 5 % SC or Vaalidamycin 3 % L- 400 ml/ Acre
3	After flowering only	False smut	Propiconazole 1ml/litr water/acre
4	Late booting stage	Sheath Rot	Lamdacyclothrin 5 % - 250 ml/Acre
5	mid-tillering stage	Stem Rot	mancozeb or carbendazim @ 1.5–2.5g/litre
6	Observed 1-3 weeks after transplanting	Bacterial Leaf Blight	copper oxychloride 500 g + streptocycline 7.5 g in 500 litre/ha or Bectra - 20 gm
7	Seedling and adult stage	Blast	Tebuconazole - 200 ml /Acre
8	Appears in nursery & may also appear after 10–15 days of transplanting	Khaira	zinc sulphate (5 kg) and lime (2.5 kg) in 500 litres of waters after 10 days of sowing
9	15 - 25 Days after transplanting	Stem Borer, Leaf Folder	Cartap hydrochloride 4% Gr 7.5 to 10 Kg Per Acre

Note

1. This year no major occurrence of infestation happened in basmati growing areas
2. Current rainfall actually brings some chances of BPH but farmers applied Buprofezin for crop protection
3. This past two-three days rainfall was actually beneficial for the crop as it was anticipated by farmers at this basmati grain filling stage
4. No damage seen due to these shows as it was without any heavy winds

Our field team is on ground, monitoring the crop progress & its development. We will keep you posted on all the events which might impact the overall crop throughput

Annexure 5

Export of basmati varieties to EU markets

Varieties acceptable in EU are:-

- Basmati 386
- Pusa Basmati -1
- Taraori (HBC-19)
- Super (Shabnam)
- Basmati 370
- Basmati 217
- Type 3 (Dehradun)
- Ranbir

Basmati (Notified varieties only)	Acreage (000 hac)					Production (000 tons)				
	2013	2014	2015	2016	2017 (E)	2013	2014	2015	2016	2017 (E)
Haryana	110	102	42	91	86	362	336	138	299	282
Punjab	17	23	10	25	23	55	76	34	81	76
U.P	57	44	47	43	43	188	146	156	143	142
U.K	2	2	0	2	2	8	6	0	8	8
J & K	36	60	52	54	53	118	198	171	177	173
H.P	0	0	0	0	0	0	0	0	0	0
Delhi	0	0	0	0	0	0	0	0	0	0
Varieties acceptable in EU (A)	222	231	151	215	206	731	763	499	708	681
Other varieties (B)	1456	1903	1967	1474	1349	1349	5714	5906	4426	4049
Total	1677	2135	2119	1689	1555	6667	8774	8058	6154	5656
% share of A in the total	**13.20%**	**10.80%**	**7.10%**	**12.70%**	**13.30%**	**11.00%**	**8.70%**	**6.20%**	**11.50%**	**12.00%**