



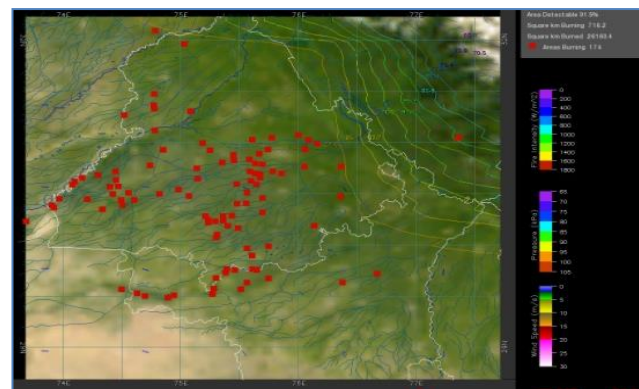
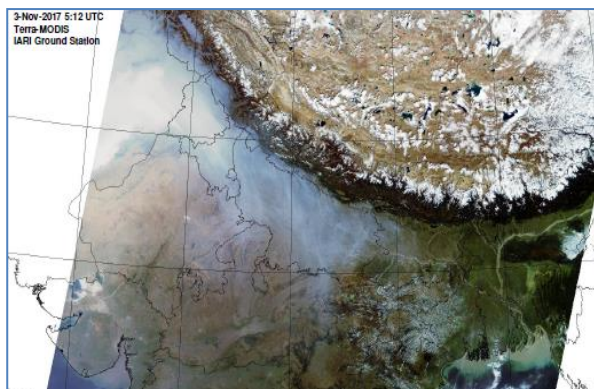
## Bulletin No. 11

Events Date:  
11-Oct-2019

Issued on:  
12-Oct-2019



# MONITORING PADDY RESIDUE BURNING IN NORTH INDIA USING SATELLITE REMOTE SENSING DURING 2019



Prepared by:

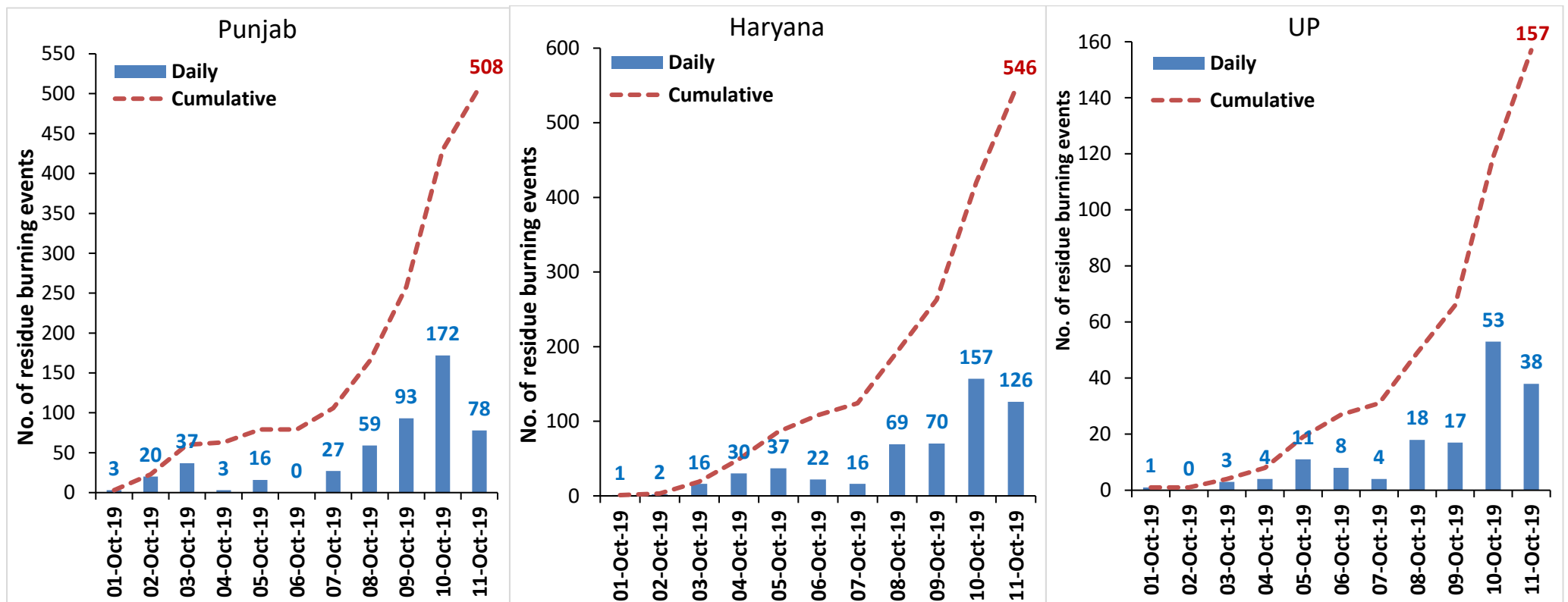
Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012

<http://creams.iari.res.in>

## Highlights for 11-October-2019

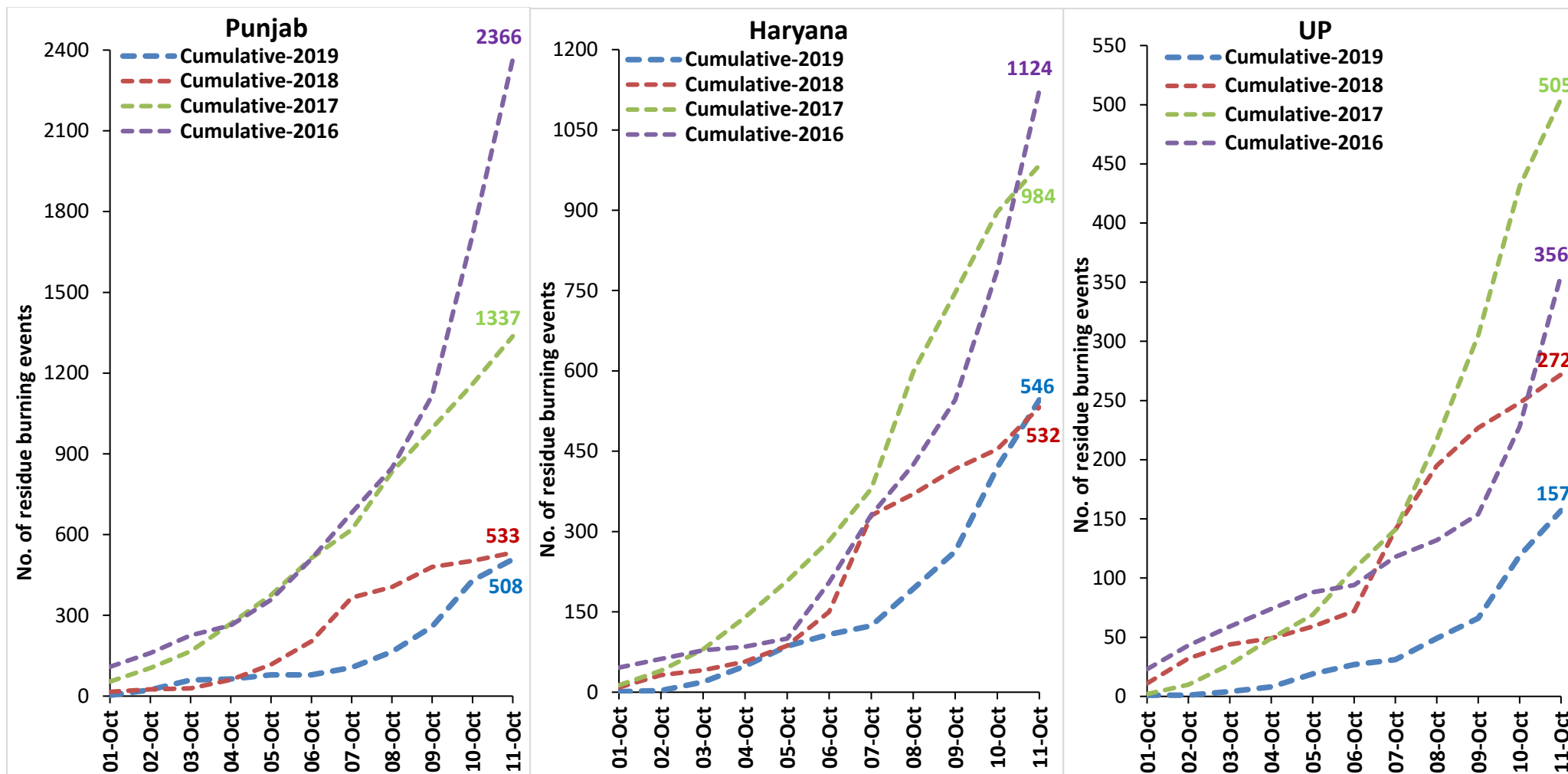
- Satellites detected **242** residue burning events in the three study States on 11-Oct-2019.
- The burning events detected on **11-Oct-2019** are **78**, **126** and **38** in Punjab, Haryana and UP, respectively.
- The number of events has reduced from **382** on **10-Oct-2019** to **242** on **11-Oct-2019** in the three states.
- Total **1211** burning events were detected in the three States between **01-Oct-2019** and **11-Oct-2019**, which are distributed as **508**, **546** and **157** in Punjab, Haryana and UP, respectively.
- Overall, the total burning events recorded in the three states are **09.4%** less than in 2018 till date. This reduction is **4.6%** in Punjab, **2.6%** in Haryana and **42.2%** in UP in the current season as compared to 2018.

### Temporal distribution of residue burning events for the three study States in 2019

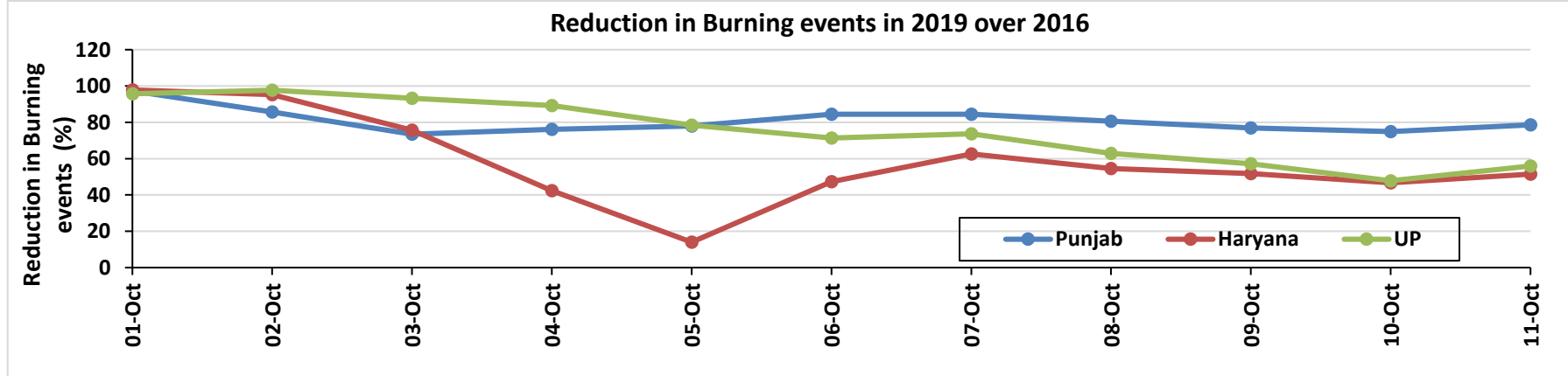
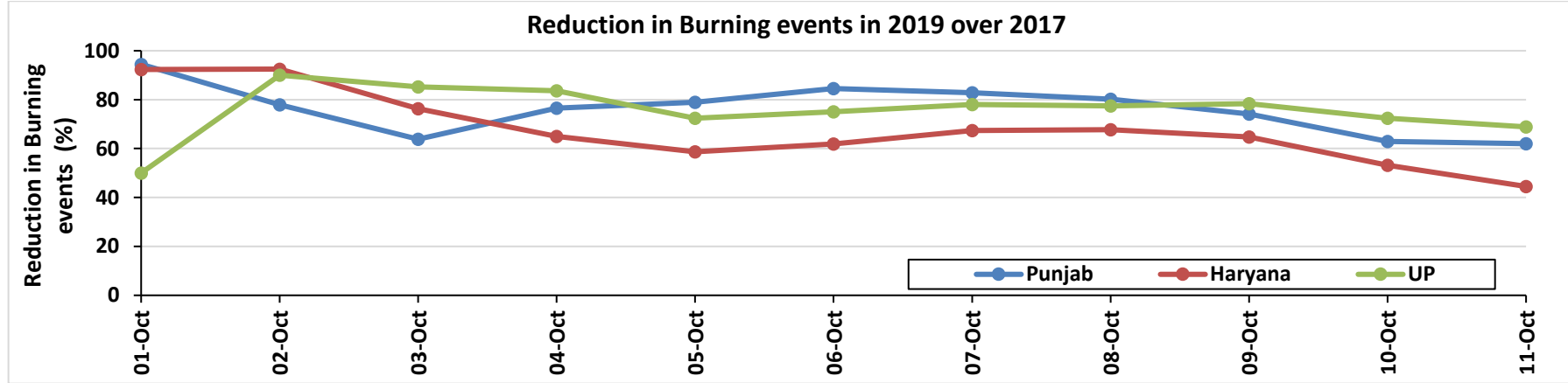
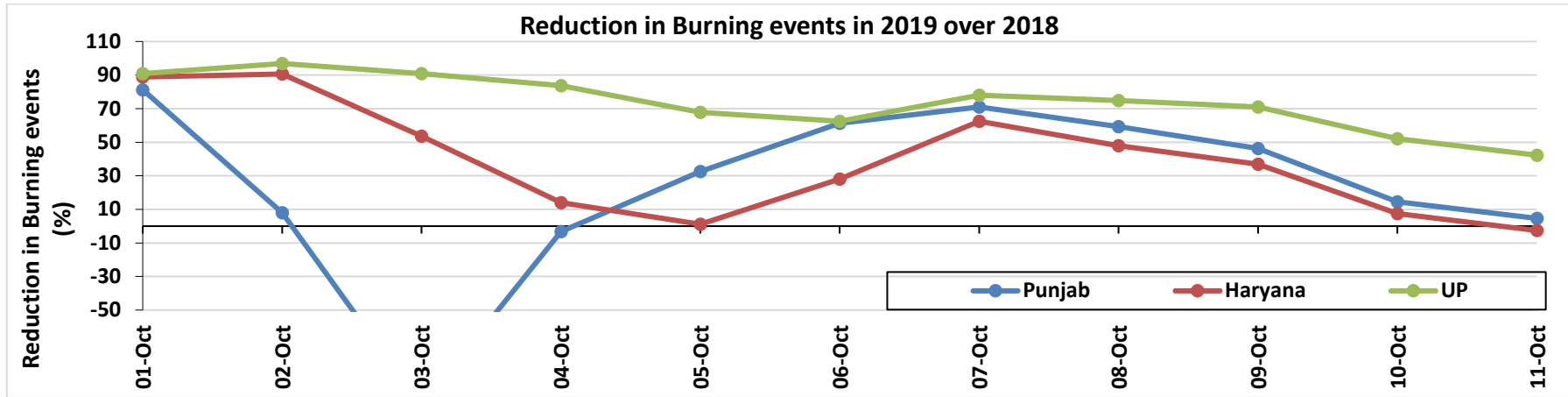


# Comparison of residue burning events in current year (2019) with previous years (2018, 2017 & 2016) for the three study States

(01-Oct to 11-Oct)

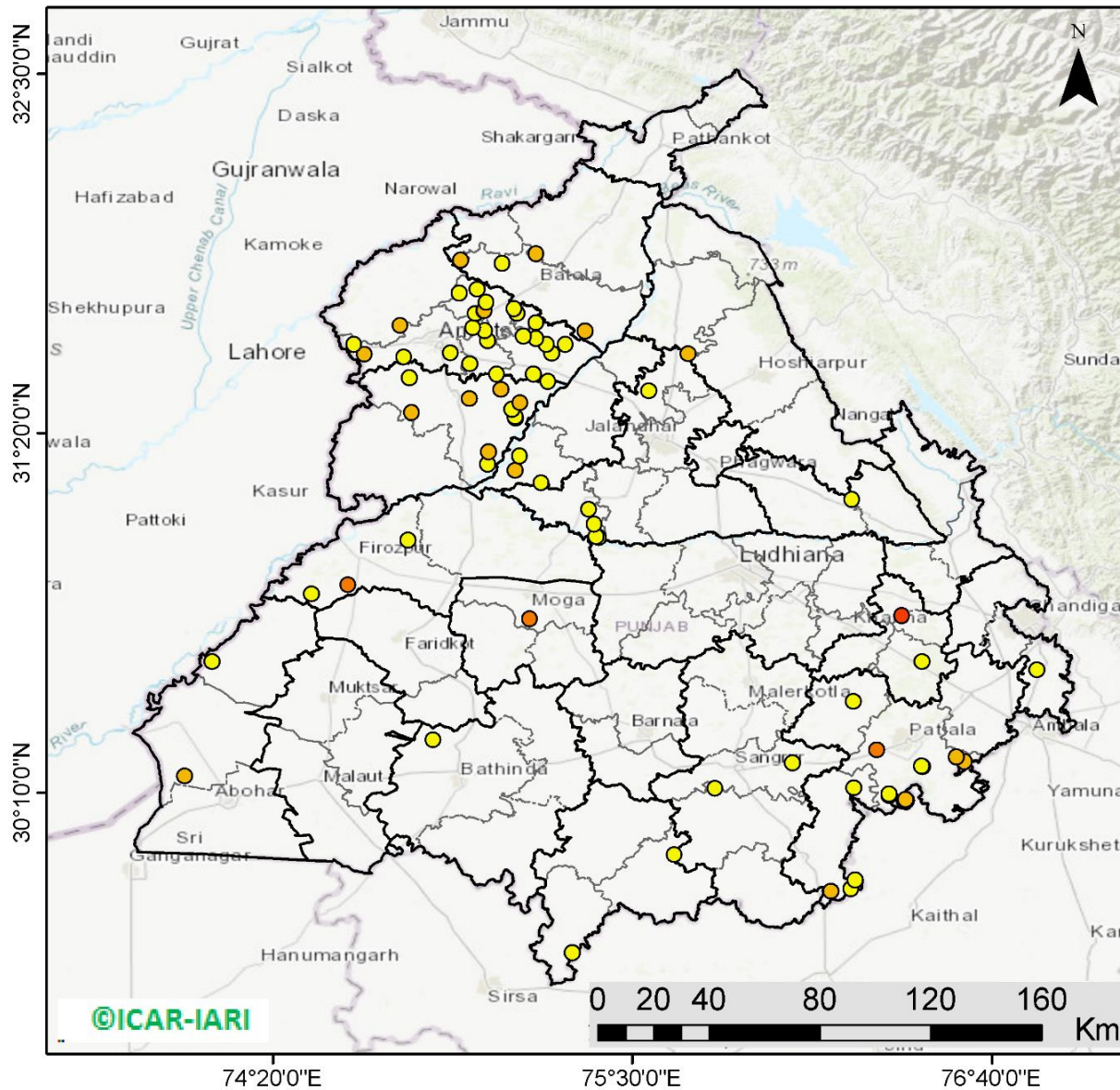


## Percent Reduction in Burning events in 2019 over 2018, 2017 and 2016 (Daily Cumulative)



(a) Punjab

RICE RESIDUE BURNING IN PUNJAB



**78** burning events detected in Punjab on 11th October 2019

Fire Intensity (W/m<sup>2</sup>)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



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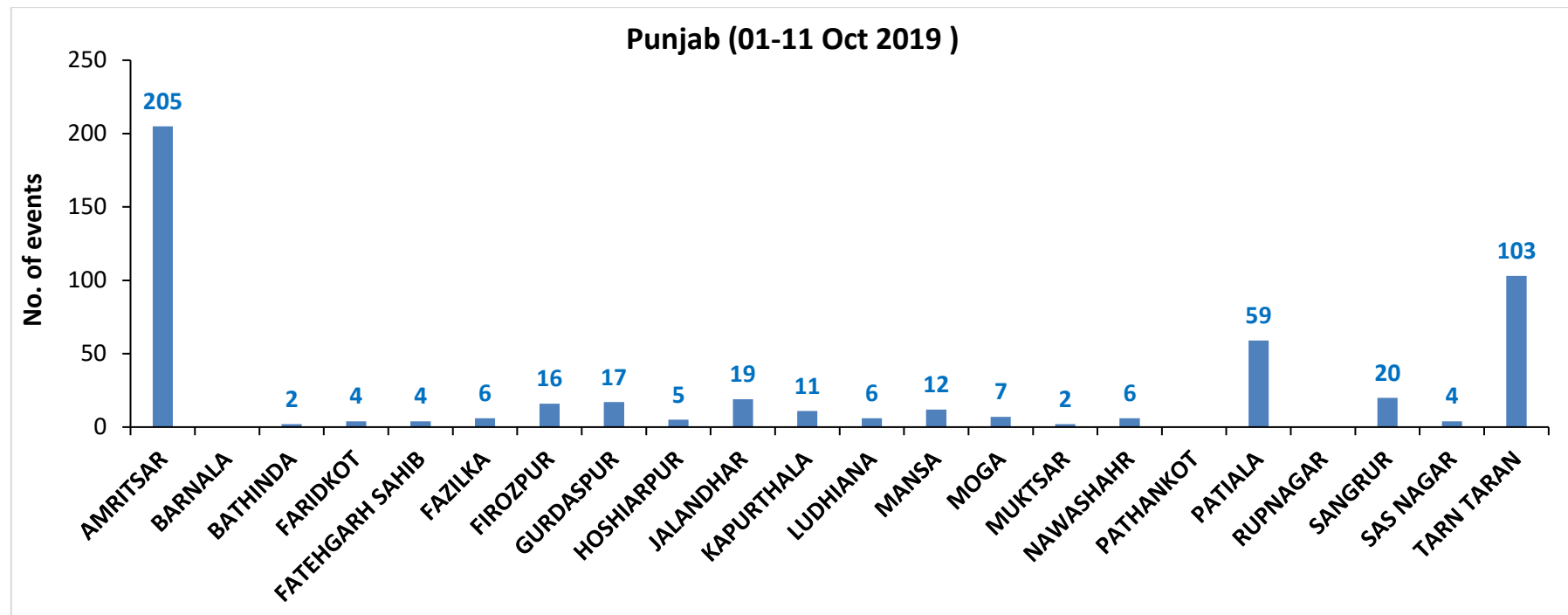
**Details of residue burning events in Punjab on 11-Oct-2019**

S. No.	District	Tehsil / Block	Satellite	Longitude	Latitude	Time (IST)	Day / Night	Fire Power (W/m <sup>2</sup> )
1	AMRITSAR	AJNALA	S-NPP	74.74697	31.68303	13:06:00	D	6.50
2	AMRITSAR	AMRITSAR I	S-NPP	75.06061	31.52469	13:06:00	D	1.80
3	AMRITSAR	AMRITSAR I	S-NPP	74.97225	31.55851	13:06:00	D	3.60
4	AMRITSAR	AMRITSAR I	S-NPP	75.03135	31.63313	13:06:00	D	2.90
5	AMRITSAR	AMRITSAR I	S-NPP	75.02219	31.66591	13:06:00	D	3.80
6	AMRITSAR	AMRITSAR I	S-NPP	74.99024	31.72110	13:06:00	D	2.40
7	AMRITSAR	AMRITSAR I	S-NPP	75.01807	31.73003	13:06:00	D	5.90
8	AMRITSAR	AMRITSAR I	S-NPP	75.01964	31.73159	13:06:00	D	5.10
9	AMRITSAR	AMRITSAR I	S-NPP	75.11699	31.73712	13:06:00	D	2.80
10	AMRITSAR	AMRITSAR I	S-NPP	75.02585	31.75886	13:06:00	D	3.40
11	AMRITSAR	AMRITSAR I	S-NPP	74.93885	31.78859	13:06:00	D	2.50
12	AMRITSAR	AMRITSAR I	S-NPP	74.99580	31.80026	13:06:00	D	5.00
13	AMRITSAR	AMRITSAR II	S-NPP	74.75925	31.58042	13:06:00	D	4.60
14	AMRITSAR	AMRITSAR II	S-NPP	74.63130	31.58891	13:06:00	D	7.90
15	AMRITSAR	AMRITSAR II	S-NPP	74.91084	31.59388	13:06:00	D	2.50
16	AMRITSAR	AMRITSAR II	S-NPP	74.59754	31.62186	13:06:00	D	2.70
17	AMRITSAR	AMRITSAR II	S-NPP	74.98257	31.67509	13:06:00	D	3.00
18	AMRITSAR	BABA BAKALA	S-NPP	75.22660	31.50126	13:06:00	D	2.70
19	AMRITSAR	BABA BAKALA	S-NPP	75.23818	31.59166	13:06:00	D	5.00
20	AMRITSAR	BABA BAKALA	S-NPP	75.28361	31.62235	13:06:00	D	2.30
21	AMRITSAR	BABA BAKALA	S-NPP	75.22066	31.62238	13:06:00	D	1.30
22	AMRITSAR	BABA BAKALA	S-NPP	75.18819	31.64153	13:06:00	D	3.30
23	AMRITSAR	BABA BAKALA	S-NPP	75.14623	31.64843	13:06:00	D	3.60
24	AMRITSAR	BABA BAKALA	S-NPP	75.18869	31.69160	13:06:00	D	1.90
25	AMRITSAR	BABA BAKALA	S-NPP	75.12586	31.72171	13:06:00	D	2.30
26	BATHINDA	BATHINDA	S-NPP	74.85352	30.33739	13:06:00	D	4.00
27	FATEHGARH SAHIB	FATEHGARH SAHIB	S-NPP	76.43936	30.59180	13:06:00	D	3.10
28	FATEHGARH SAHIB	KHAMANOH	S-NPP	76.37413	30.74114	13:06:00	D	17.10
29	FAZILKA	FAZILKA	S-NPP	74.04774	30.21929	13:06:00	D	7.20
30	FAZILKA	JALALABAD	S-NPP	74.13613	30.59184	13:06:00	D	4.20
31	FIROZPUR	FIROZPUR	S-NPP	74.45926	30.81155	13:06:00	D	2.50

32	FIROZPUR	FIROZPUR	S-NPP	74.57789	30.84100	13:06:00	D	11.50
33	FIROZPUR	FIROZPUR	S-NPP	74.77181	30.98658	13:06:00	D	3.60
34	GURDASPUR	BATALA	S-NPP	75.34755	31.66513	13:06:00	D	7.80
35	GURDASPUR	BATALA	S-NPP	75.07880	31.88419	13:06:00	D	2.40
36	GURDASPUR	BATALA	S-NPP	74.94257	31.89500	13:06:00	D	5.20
37	GURDASPUR	GURDASPUR	S-NPP	75.18773	31.91518	13:06:00	D	5.10
38	JALANDHAR	JALANDHAR II	S-NPP	75.55399	31.47036	13:06:00	D	2.40
39	JALANDHAR	JALANDHAR II	TERRA	75.68100	31.59000	11:15:00	D	8.30
40	JALANDHAR	SHAHKOT	S-NPP	75.39202	30.99563	13:06:00	D	3.40
41	JALANDHAR	SHAHKOT	S-NPP	75.38235	30.99796	13:06:00	D	3.00
42	JALANDHAR	SHAHKOT	S-NPP	75.37683	31.03768	13:06:00	D	0.70
43	JALANDHAR	SHAHKOT	S-NPP	75.35924	31.08566	13:06:00	D	2.10
44	JALANDHAR	SHAHKOT	S-NPP	75.20420	31.17171	13:06:00	D	2.50
45	KAPURTHALA	SULTANPUR LODHI	S-NPP	75.12040	31.21222	13:06:00	D	5.90
46	KAPURTHALA	SULTANPUR LODHI	S-NPP	75.13528	31.25876	13:06:00	D	3.10
47	MANSA	BUDHLADA	S-NPP	75.63706	29.96393	13:06:00	D	2.70
48	MANSA	SARDULGARH	S-NPP	75.30546	29.64647	13:06:00	D	4.00
49	MOGA	MOGA	S-NPP	75.16734	30.73077	13:06:00	D	13.50
50	NAWASHAHR	BALACHAUR	S-NPP	76.21286	31.11850	13:06:00	D	3.10
51	PATIALA	NABHA	S-NPP	76.21726	30.46258	13:06:00	D	3.60
52	PATIALA	PATIALA	S-NPP	76.38879	30.14183	13:06:00	D	7.00
53	PATIALA	PATIALA	S-NPP	76.38644	30.14372	13:06:00	D	7.40
54	PATIALA	PATIALA	S-NPP	76.33354	30.15798	13:06:00	D	3.40
55	PATIALA	PATIALA	S-NPP	76.33253	30.16191	13:06:00	D	4.30
56	PATIALA	PATIALA	S-NPP	76.44183	30.25154	13:06:00	D	4.00
57	PATIALA	PATIALA	S-NPP	76.43776	30.25254	13:06:00	D	2.20
58	PATIALA	PATIALA	S-NPP	76.57864	30.26750	13:06:00	D	7.50
59	PATIALA	PATIALA	S-NPP	76.55082	30.28251	13:06:00	D	7.60
60	PATIALA	PATIALA	S-NPP	76.29333	30.30451	13:06:00	D	13.90
61	PATIALA	SAMANA	S-NPP	76.14397	29.84601	13:06:00	D	5.30
62	PATIALA	SAMANA	S-NPP	76.20953	29.85475	13:06:00	D	3.60
63	PATIALA	SAMANA	S-NPP	76.22336	29.88257	13:06:00	D	4.30
64	PATIALA	SAMANA	S-NPP	76.21883	30.18091	13:06:00	D	3.80
65	SANGRUR	SANGRUR	S-NPP	76.02016	30.26321	13:06:00	D	5.00

66	SANGRUR	SUNAM	S-NPP	75.76902	30.17914	13:06:00	D	3.00
67	SAS NAGAR	DERABASSI	S-NPP	76.81283	30.56373	13:06:00	D	2.50
68	TARN TARAN	KHADOOR SAHIB	S-NPP	75.03099	31.23288	13:06:00	D	2.10
69	TARN TARAN	KHADOOR SAHIB	S-NPP	75.03393	31.27279	13:06:00	D	6.20
70	TARN TARAN	KHADOOR SAHIB	S-NPP	75.12157	31.38268	13:06:00	D	3.00
71	TARN TARAN	KHADOOR SAHIB	S-NPP	75.12043	31.38678	13:06:00	D	3.00
72	TARN TARAN	KHADOOR SAHIB	S-NPP	74.78355	31.40103	13:06:00	D	8.00
73	TARN TARAN	KHADOOR SAHIB	S-NPP	75.10923	31.41049	13:06:00	D	2.50
74	TARN TARAN	KHADOOR SAHIB	S-NPP	75.13668	31.43097	13:06:00	D	6.80
75	TARN TARAN	KHADOOR SAHIB	S-NPP	74.97070	31.44432	13:06:00	D	5.70
76	TARN TARAN	KHADOOR SAHIB	S-NPP	75.07400	31.47431	13:06:00	D	7.20
77	TARN TARAN	KHADOOR SAHIB	S-NPP	74.77681	31.51359	13:06:00	D	2.80
78	TARN TARAN	KHADOOR SAHIB	S-NPP	75.17888	31.52595	13:06:00	D	3.30

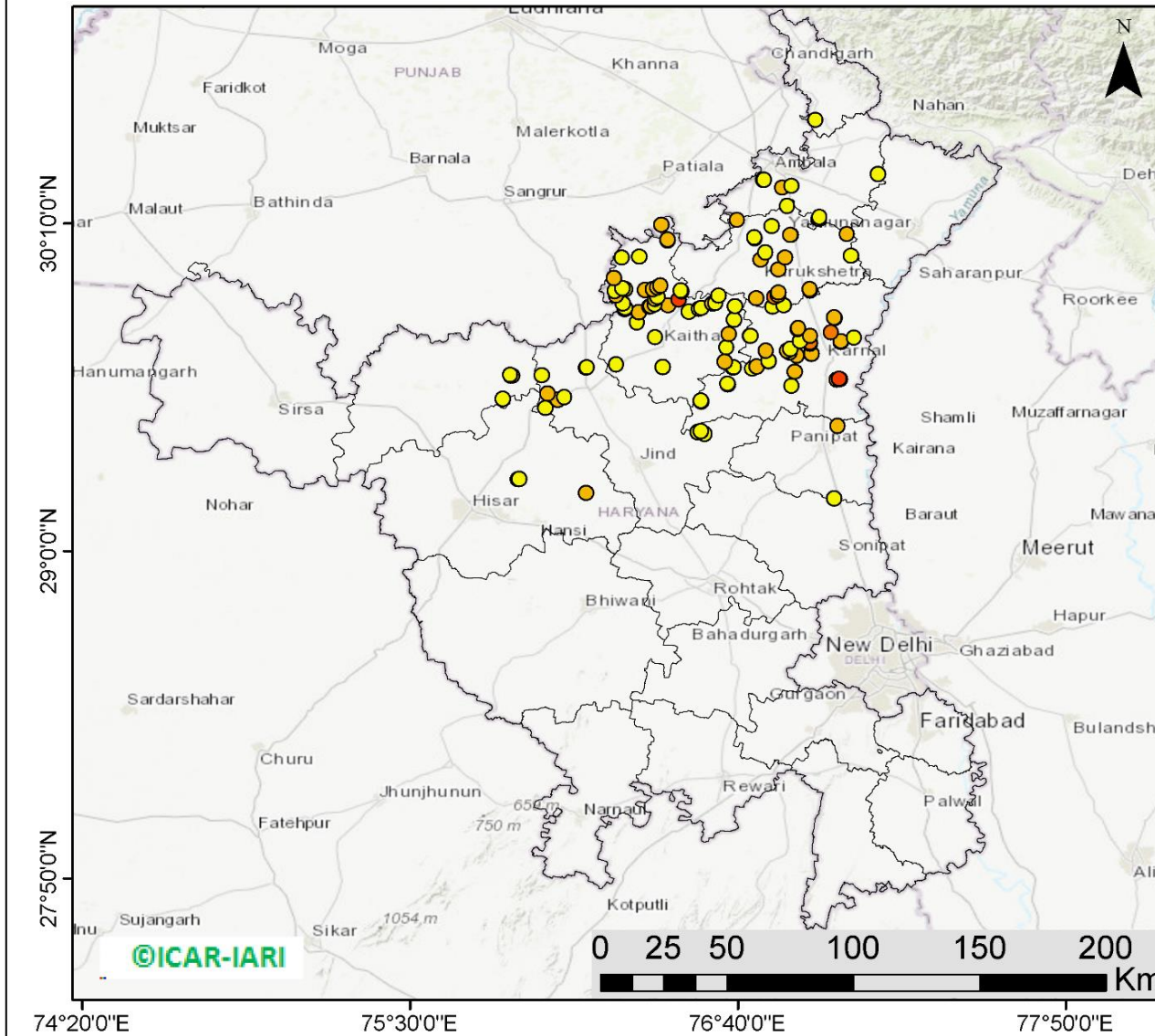
**District-wise cumulative number of residue burning events in Punjab (01 to 11-Oct 2019)**





(b) Haryana

RICE RESIDUE BURNING IN HARYANA



**126** burning events detected in Haryana on 11th October 2019

Fire Intensity (W/m<sup>2</sup>)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

**Details of residue burning events in Haryana on 11-Oct-2019**

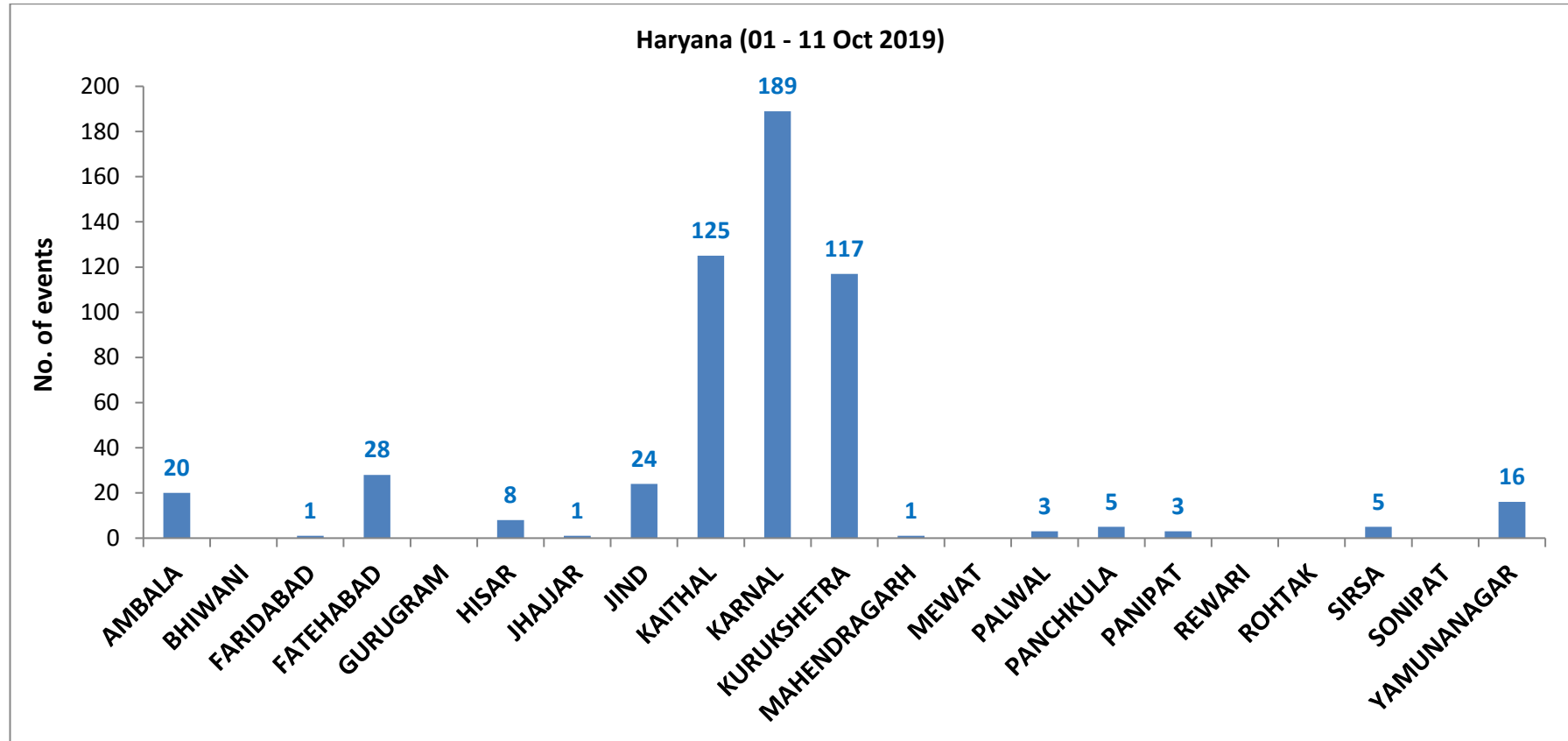
S. No.	District	Tehsil / Block	Satellite	Longitude	Latitude	Time (IST)	Day / Night	Fire Power (W/m <sup>2</sup> )
1	AMBALA	AMBALA	S-NPP	76.66306	30.17835	13:06:00	D	5.80
2	AMBALA	AMBALA	S-NPP	76.82491	30.29470	13:06:00	D	5.20
3	AMBALA	AMBALA	S-NPP	76.85803	30.30106	13:06:00	D	3.70
4	AMBALA	AMBALA	S-NPP	76.75719	30.32217	13:06:00	D	5.30
5	AMBALA	AMBALA	S-NPP	76.75961	30.32240	13:06:00	D	3.60
6	AMBALA	BARARA	S-NPP	77.05441	30.12801	13:06:00	D	7.00
7	AMBALA	BARARA	S-NPP	76.95368	30.18196	13:06:00	D	3.30
8	AMBALA	BARARA	S-NPP	77.16495	30.34377	13:06:00	D	3.60
9	FATEHABAD	TOHANA	S-NPP	75.82997	29.54284	13:06:00	D	3.60
10	FATEHABAD	TOHANA	S-NPP	75.85837	29.62417	13:06:00	D	9.10
11	FATEHABAD	TOHANA	S-NPP	75.86259	29.62502	13:06:00	D	9.60
12	FATEHABAD	TOHANA	S-NPP	75.85729	29.62824	13:06:00	D	2.80
13	HISAR	HANSI	S-NPP	75.88383	29.25595	13:06:00	D	4.00
14	HISAR	HANSI	S-NPP	75.88808	29.25680	13:06:00	D	4.00
15	HISAR	NARNAUND	S-NPP	76.12555	29.20718	13:06:00	D	5.80
16	JIND	JIND	S-NPP	76.52275	29.42457	13:06:00	D	1.40
17	JIND	NARWANA	S-NPP	75.98052	29.50906	13:06:00	D	3.50
18	JIND	NARWANA	S-NPP	76.02511	29.53947	13:06:00	D	5.70
19	JIND	NARWANA	S-NPP	76.04886	29.54854	13:06:00	D	2.70
20	JIND	NARWANA	S-NPP	75.98867	29.56196	13:06:00	D	5.80
21	JIND	NARWANA	S-NPP	75.96835	29.62516	13:06:00	D	2.20
22	JIND	NARWANA	S-NPP	76.12576	29.65291	13:06:00	D	3.40
23	JIND	NARWANA	S-NPP	76.12951	29.65358	13:06:00	D	3.80
24	JIND	SAFIDON	S-NPP	76.54920	29.41740	13:06:00	D	3.10
25	JIND	SAFIDON	S-NPP	76.53448	29.42690	13:06:00	D	3.60
26	KAITHAL	GUHLA	TERRA	76.23400	29.90900	11:15:00	D	5.90
27	KAITHAL	GUHLA	S-NPP	76.22898	29.92662	13:06:00	D	2.50
28	KAITHAL	GUHLA	TERRA	76.33500	29.93000	11:15:00	D	5.20
29	KAITHAL	GUHLA	S-NPP	76.26485	29.93377	13:06:00	D	2.10
30	KAITHAL	GUHLA	S-NPP	76.25586	29.93615	13:06:00	D	2.20

31	KAITHAL	GUHLA	S-NPP	76.38039	29.94014	13:06:00	D	6.10
32	KAITHAL	GUHLA	S-NPP	76.39112	29.94642	13:06:00	D	7.00
33	KAITHAL	GUHLA	S-NPP	76.22562	29.97189	13:06:00	D	6.40
34	KAITHAL	GUHLA	S-NPP	76.25380	30.04495	13:06:00	D	4.50
35	KAITHAL	GUHLA	S-NPP	76.31511	30.04883	13:06:00	D	3.40
36	KAITHAL	GUHLA	S-NPP	76.41646	30.10601	13:06:00	D	21.70
37	KAITHAL	GUHLA	S-NPP	76.41544	30.10994	13:06:00	D	9.90
38	KAITHAL	GUHLA	S-NPP	76.39405	30.16174	13:06:00	D	7.00
39	KAITHAL	KAITHAL	S-NPP	76.39876	29.65622	13:06:00	D	4.40
40	KAITHAL	KAITHAL	S-NPP	76.23297	29.66544	13:06:00	D	2.00
41	KAITHAL	KAITHAL	S-NPP	76.61988	29.67495	13:06:00	D	6.80
42	KAITHAL	KAITHAL	S-NPP	76.62522	29.72521	13:06:00	D	3.50
43	KAITHAL	KAITHAL	S-NPP	76.37200	29.76079	13:06:00	D	3.20
44	KAITHAL	KAITHAL	TERRA	76.63400	29.77200	11:15:00	D	5.60
45	KAITHAL	KAITHAL	S-NPP	76.30772	29.81575	13:06:00	D	2.20
46	KAITHAL	KAITHAL	S-NPP	76.65215	29.82382	13:06:00	D	3.50
47	KAITHAL	KAITHAL	TERRA	76.31300	29.85100	11:15:00	D	7.70
48	KAITHAL	KAITHAL	S-NPP	76.49107	29.85226	13:06:00	D	2.80
49	KAITHAL	KAITHAL	S-NPP	76.26257	29.86102	13:06:00	D	3.30
50	KAITHAL	KAITHAL	TERRA	76.52800	29.86300	11:15:00	D	4.70
51	KAITHAL	KAITHAL	S-NPP	76.53645	29.86536	13:06:00	D	2.60
52	KAITHAL	KAITHAL	S-NPP	76.26553	29.86577	13:06:00	D	4.90
53	KAITHAL	KAITHAL	S-NPP	76.35187	29.87028	13:06:00	D	8.60
54	KAITHAL	KAITHAL	S-NPP	76.35580	29.87105	13:06:00	D	6.90
55	KAITHAL	KAITHAL	S-NPP	76.65526	29.87245	13:06:00	D	3.90
56	KAITHAL	KAITHAL	S-NPP	76.41772	29.87494	13:06:00	D	6.60
57	KAITHAL	KAITHAL	S-NPP	76.37054	29.87810	13:06:00	D	3.40
58	KAITHAL	KAITHAL	S-NPP	76.25743	29.88088	13:06:00	D	4.40
59	KAITHAL	KAITHAL	S-NPP	76.57484	29.88115	13:06:00	D	5.40
60	KAITHAL	KAITHAL	S-NPP	76.58633	29.88341	13:06:00	D	3.90
61	KAITHAL	KAITHAL	S-NPP	76.45567	29.89478	13:06:00	D	18.30
62	KAITHAL	KAITHAL	TERRA	76.37200	29.89700	11:15:00	D	8.20
63	KAITHAL	KAITHAL	S-NPP	76.38016	29.90484	13:06:00	D	4.90
64	KAITHAL	KAITHAL	S-NPP	76.59759	29.91018	13:06:00	D	3.80

65	KAITHAL	KAITHAL	S-NPP	76.46612	29.92567	13:06:00	D	4.80
66	KAITHAL	KAITHAL	S-NPP	76.46348	29.92780	13:06:00	D	3.80
67	KAITHAL	KAITHAL	S-NPP	76.36473	29.93288	13:06:00	D	8.30
68	KARNAL	ASSANDH	S-NPP	76.53540	29.53260	13:06:00	D	33.80
69	KARNAL	ASSANDH	S-NPP	76.53439	29.53654	13:06:00	D	4.10
70	KARNAL	ASSANDH	S-NPP	76.62991	29.59242	13:06:00	D	3.30
71	KARNAL	ASSANDH	S-NPP	76.62891	29.59633	13:06:00	D	4.00
72	KARNAL	ASSANDH	S-NPP	76.71666	29.64900	13:06:00	D	4.80
73	KARNAL	ASSANDH	S-NPP	76.64983	29.65213	13:06:00	D	5.10
74	KARNAL	ASSANDH	S-NPP	76.65057	29.65384	13:06:00	D	3.30
75	KARNAL	GHARAUNDA	S-NPP	76.85800	29.58805	13:06:00	D	2.40
76	KARNAL	INDRI	S-NPP	77.01080	29.83126	13:06:00	D	5.70
77	KARNAL	INDRI	S-NPP	77.00816	29.83233	13:06:00	D	6.70
78	KARNAL	KARNAL	S-NPP	77.01796	29.61025	13:06:00	D	8.50
79	KARNAL	KARNAL	S-NPP	77.02899	29.61234	13:06:00	D	14.50
80	KARNAL	KARNAL	S-NPP	77.02661	29.61296	13:06:00	D	17.80
81	KARNAL	KARNAL	S-NPP	76.86879	29.63879	13:06:00	D	6.10
82	KARNAL	KARNAL	S-NPP	76.73370	29.65751	13:06:00	D	5.20
83	KARNAL	KARNAL	S-NPP	76.77515	29.67688	13:06:00	D	3.50
84	KARNAL	KARNAL	S-NPP	76.77620	29.67784	13:06:00	D	4.70
85	KARNAL	KARNAL	S-NPP	76.87629	29.69675	13:06:00	D	5.50
86	KARNAL	KARNAL	S-NPP	76.92737	29.70272	13:06:00	D	3.20
87	KARNAL	KARNAL	S-NPP	76.92876	29.70278	13:06:00	D	5.20
88	KARNAL	KARNAL	S-NPP	76.85003	29.70781	13:06:00	D	7.40
89	KARNAL	KARNAL	TERRA	76.76600	29.71400	11:15:00	D	6.80
90	KARNAL	KARNAL	S-NPP	76.84248	29.71443	13:06:00	D	6.40
91	KARNAL	KARNAL	S-NPP	76.85271	29.72048	13:06:00	D	2.40
92	KARNAL	KARNAL	S-NPP	77.03282	29.74336	13:06:00	D	9.50
93	KARNAL	KARNAL	S-NPP	77.03186	29.74718	13:06:00	D	9.50
94	KARNAL	KARNAL	S-NPP	76.88698	29.74733	13:06:00	D	3.70
95	KARNAL	KARNAL	S-NPP	77.08009	29.76049	13:06:00	D	3.10
96	KARNAL	KARNAL	S-NPP	76.70885	29.76552	13:06:00	D	4.10
97	KARNAL	KARNAL	S-NPP	76.71087	29.76621	13:06:00	D	3.90
98	KARNAL	KARNAL	TERRA	76.99800	29.77800	11:15:00	D	11.00

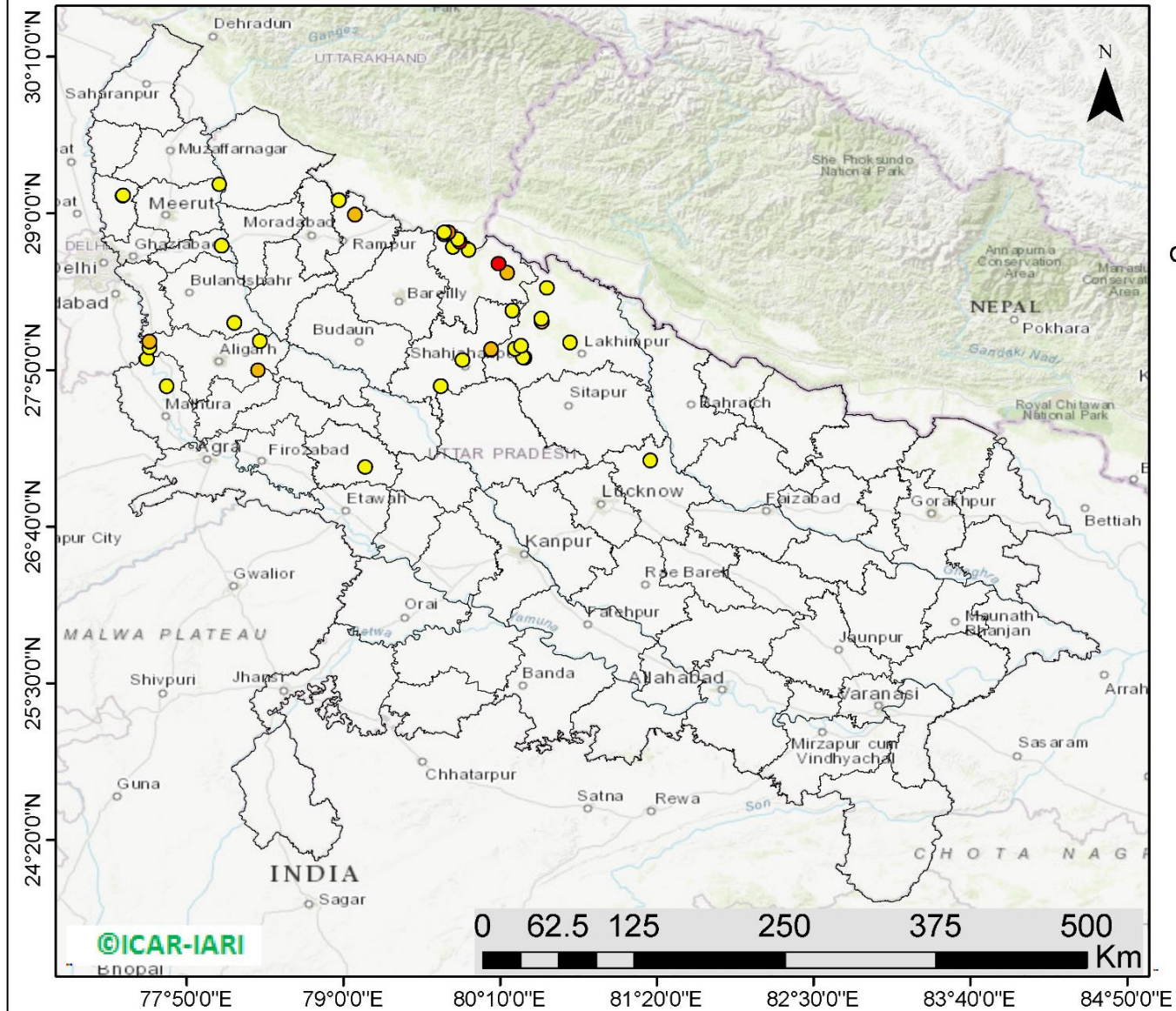
99	KARNAL	NILOKHERI	S-NPP	76.92423	29.73840	13:06:00	D	10.40
100	KARNAL	NILOKHERI	S-NPP	76.92326	29.74224	13:06:00	D	10.40
101	KARNAL	NILOKHERI	S-NPP	76.92300	29.76637	13:06:00	D	6.70
102	KARNAL	NILOKHERI	S-NPP	76.87947	29.79106	13:06:00	D	6.50
103	KARNAL	NILOKHERI	S-NPP	76.88091	29.79460	13:06:00	D	5.90
104	KARNAL	NILOKHERI	S-NPP	76.78899	29.87055	13:06:00	D	3.40
105	KARNAL	NILOKHERI	S-NPP	76.82921	29.87422	13:06:00	D	1.50
106	KURUKSHETRA	PEHOWA	S-NPP	76.72687	30.11373	13:06:00	D	3.50
107	KURUKSHETRA	PEHOWA	S-NPP	76.72589	30.11759	13:06:00	D	3.50
108	KURUKSHETRA	SHAHABAD	S-NPP	76.78618	30.15761	13:06:00	D	2.80
109	KURUKSHETRA	SHAHABAD	S-NPP	76.95724	30.19063	13:06:00	D	3.70
110	KURUKSHETRA	SHAHABAD	S-NPP	76.84140	30.22965	13:06:00	D	3.80
111	KURUKSHETRA	THANESAR	S-NPP	76.73172	29.89972	13:06:00	D	5.80
112	KURUKSHETRA	THANESAR	S-NPP	76.79555	29.90413	13:06:00	D	11.50
113	KURUKSHETRA	THANESAR	TERRA	76.80800	29.91100	11:15:00	D	7.50
114	KURUKSHETRA	THANESAR	TERRA	76.81000	29.92000	11:15:00	D	6.60
115	KURUKSHETRA	THANESAR	S-NPP	76.92344	29.92914	13:06:00	D	5.80
116	KURUKSHETRA	THANESAR	S-NPP	76.92248	29.93297	13:06:00	D	6.70
117	KURUKSHETRA	THANESAR	TERRA	76.81100	30.00300	11:15:00	D	5.60
118	KURUKSHETRA	THANESAR	S-NPP	76.74777	30.03699	13:06:00	D	6.70
119	KURUKSHETRA	THANESAR	S-NPP	76.83355	30.04558	13:06:00	D	6.00
120	KURUKSHETRA	THANESAR	S-NPP	77.06800	30.05108	13:06:00	D	2.90
121	KURUKSHETRA	THANESAR	S-NPP	76.76434	30.06448	13:06:00	D	1.70
122	KURUKSHETRA	THANESAR	S-NPP	76.85394	30.12593	13:06:00	D	7.50
123	KURUKSHETRA	THANESAR	S-NPP	76.85239	30.12622	13:06:00	D	7.00
124	PANCHKULA	PANCHKULA	S-NPP	76.94272	30.53561	13:06:00	D	3.60
125	PANIPAT	PANIPAT	S-NPP	77.02107	29.44560	13:06:00	D	5.10
126	PANIPAT	SAMALKHA	S-NPP	77.00832	29.18817	13:06:00	D	5.00

**District-wise cumulative number of residue burning events in Haryana (01 to 11-Oct 2019)**



(c) UP

RICE RESIDUE BURNING IN UTTAR PRADESH



**38** burning events detected in Uttar Pradesh on 11th October 2019

Fire Intensity (W/m<sup>2</sup>)

- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



<http://geoportal.icar.gov.in:8080/geoplorer/composer/>

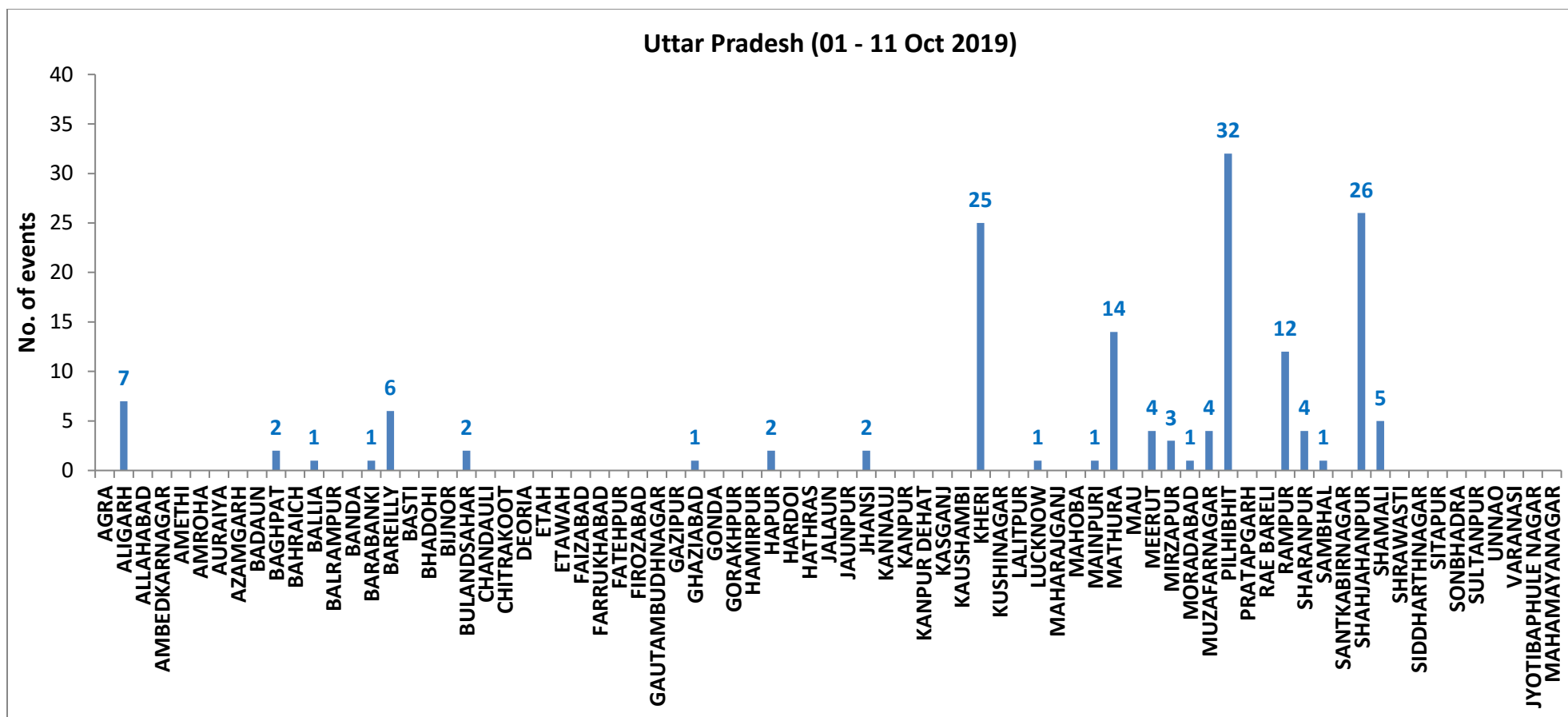
**Details of residue burning events in Uttar Pradesh on 11-Oct-2019**

S. No.	District	Tehsil / Block	Satellite	Longitude	Latitude	Time (IST)	Day / Night	Fire Power (W/m <sup>2</sup> )
1	ALIGARH	ATRAULI	S-NPP	78.37733	28.04754	13:06:00	D	3.10
2	ALIGARH	KHAIR	S-NPP	77.55488	27.99867	13:06:00	D	4.40
3	ALIGARH	KHAIR	S-NPP	77.55561	28.04290	13:06:00	D	5.40
4	ALIGARH	KOL	TERRA	78.36500	27.82800	11:15:00	D	9.30
5	BAGHPAT	BARAUT	S-NPP	77.35667	29.13003	13:06:00	D	1.80
6	BAGHPAT	BARAUT	S-NPP	77.35870	29.13269	13:06:00	D	4.30
7	BARABANKI	RAMNAGAR	S-NPP	81.28672	27.15834	13:06:00	D	2.50
8	BULANDSAHAR	DIBAI	S-NPP	78.18689	28.18348	13:06:00	D	3.30
9	HAPUR	GARHMUKTESAR	S-NPP	78.09308	28.75844	13:06:00	D	2.50
10	KHERI	GOLA	S-NPP	80.34821	27.92457	13:06:00	D	5.40
11	KHERI	GOLA	S-NPP	80.33913	27.92656	13:06:00	D	3.20
12	KHERI	GOLA	S-NPP	80.47765	28.19198	13:06:00	D	6.00
13	KHERI	GOLA	S-NPP	80.47263	28.21570	13:06:00	D	3.20
14	KHERI	LAKHIMPUR	S-NPP	80.68804	28.03770	13:06:00	D	2.70
15	KHERI	MOHMADI	S-NPP	80.27779	27.99044	13:06:00	D	2.30
16	KHERI	MOHMADI	S-NPP	80.32099	28.01180	13:06:00	D	4.20
17	KHERI	PALIA KALAN	S-NPP	80.51594	28.44369	13:06:00	D	3.40
18	MAINPURI	BHOGAON	S-NPP	79.16340	27.10781	13:06:00	D	3.00
19	MATHURA	CHHATA	S-NPP	77.68594	27.71206	13:06:00	D	3.50
20	MATHURA	MAT	S-NPP	77.53769	27.91409	13:06:00	D	2.70
21	MEERUT	MAWANA	S-NPP	78.07773	29.21526	13:06:00	D	4.00
22	PILHIBHIT	PILHIBHIT	S-NPP	79.93265	28.72729	13:06:00	D	3.90
23	PILHIBHIT	PILHIBHIT	S-NPP	79.81670	28.75013	13:06:00	D	3.30
24	PILHIBHIT	PILHIBHIT	S-NPP	79.86643	28.78713	13:06:00	D	22.10
25	PILHIBHIT	PILHIBHIT	S-NPP	79.85335	28.80627	13:06:00	D	2.20
26	PILHIBHIT	PILHIBHIT	S-NPP	79.74886	28.84391	13:06:00	D	4.70
27	PILHIBHIT	PILHIBHIT	S-NPP	79.78178	28.85669	13:06:00	D	10.20
28	PILHIBHIT	PILHIBHIT	S-NPP	79.78608	28.85743	13:06:00	D	10.20
29	PILHIBHIT	PILHIBHIT	S-NPP	79.75013	28.85842	13:06:00	D	4.00
30	PILHIBHIT	PURANPUR	S-NPP	80.22226	28.55564	13:06:00	D	6.10



31	PILHIBHIT	PURANPUR	AQUA	80.15500	28.62400	12:50:00	D	20.60
32	RAMPUR	SUAR	TERRA	79.08700	28.98900	11:15:00	D	6.50
33	RAMPUR	TANDA	S-NPP	78.96440	29.09815	13:06:00	D	1.70
34	SHAHJAHANPUR	JALALABAD	S-NPP	79.72298	27.71170	13:06:00	D	2.30
35	SHAHJAHANPUR	PUWANYA	S-NPP	80.09949	27.98531	13:06:00	D	1.70
36	SHAHJAHANPUR	PUWANYA	S-NPP	80.09981	27.98755	13:06:00	D	5.90
37	SHAHJAHANPUR	PUWANYA	S-NPP	80.25826	28.27452	13:06:00	D	2.20
38	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	79.88558	27.90610	13:06:00	D	4.50

**District-wise cumulative number of residue burning events in Haryana (01 to 11-Oct 2019)**



**State-wise, date-wise and district-wise number of residue burning events detected in 2016, 2017, 2018 and 2019**  
**(Period: 01-Oct to 11-Oct)**

Date	Punjab				Haryana				UP				Total			
	2019	2018	2017	2016	2019	2018	2017	2016	2019	2018	2017	2016	2019	2018	2017	2016
01-Oct	3	16	54	109	1	9	13	46	1	11	2	23	5	36	69	178
02-Oct	20	9	50	51	2	23	27	16	0	21	8	20	23	53	85	87
03-Oct	37	4	62	66	16	9	40	16	3	12	17	16	56	25	119	98
04-Oct	3	32	103	37	30	16	60	7	4	5	22	15	37	53	185	59
05-Oct	16	56	106	95	37	30	68	15	11	10	20	14	64	96	194	124
06-Oct	0	87	138	152	22	63	75	105	8	13	39	6	30	163	252	263
07-Oct	27	162	105	171	16	180	97	126	4	69	33	24	47	411	235	321
08-Oct	59	39	215	166	69	40	218	94	18	54	76	14	146	133	509	274
09-Oct	93	75	163	270	70	47	148	121	17	32	88	22	180	154	399	413
10-Oct	172	23	164	597	157	37	151	242	53	21	126	74	382	81	441	913
11-Oct	78	30	177	652	126	78	87	336	38	24	74	128	242	131	338	1116
<b>Total</b>	<b>508</b>	<b>533</b>	<b>1337</b>	<b>2366</b>	<b>546</b>	<b>532</b>	<b>984</b>	<b>1124</b>	<b>157</b>	<b>272</b>	<b>505</b>	<b>356</b>	<b>1211</b>	<b>1337</b>	<b>2826</b>	<b>3846</b>

**(a) Punjab**

Districts	01-11 Oct			
	2016	2017	2018	2019
AMRITSAR	503	324	288	205
BARNALA	8	4	1	0
BATHINDA	89	44	12	2
FARIDKOT	130	151	1	4
FATEHGARH SAHIB	130	38	9	4
FAZILKA	0	0	0	6
FIROZPUR	172	131	22	16
GURDASPUR	107	31	26	17
HOSHIARPUR	16	4	3	5
JALANDHAR	153	49	0	19
KAPURTHALA	127	15	2	11
LUDHIANA	95	85	17	6
MANSA	10	17	1	12
MOGA	27	8	0	7
MUKTSAR	136	17	3	2
NAWASHAHR (SBS Nagar)	28	15	6	6
PATHANKOT	0	0	0	0
PATIALA	196	149	35	59
RUPNAGAR	15	2	0	0
SANGRUR	40	64	23	20
SAS NAGAR	20	22	16	4
TARN TARAN	364	167	68	103
<b>Total</b>	<b>2366</b>	<b>1337</b>	<b>533</b>	<b>508</b>

**(b) Haryana**

Districts	01-11 Oct			
	2016	2017	2018	2019
AMBALA	70	74	35	20
BHIWANI	0	2	0	0
FARIDABAD	3	8	19	1
FATEHABAD	19	41	10	28
GURUGRAM	0	0	0	0
HISAR	7	6	6	8
JHAJJAR	1	0	3	1
JIND	22	43	24	24
KAITHAL	315	185	84	125
KARNAL	416	341	157	189
KURUKSHETRA	220	221	136	117
MAHENDRAGARH	0	0	0	1
MEWAT	0	0	0	0
PALWAL	0	0	0	3
PANCHKULA	0	0	3	5
PANIPAT	11	18	25	3
REWARI	0	0	0	0
ROHTAK	0	1	0	0
SIRSA	21	9	7	5
SONIPAT	0	7	4	0
YAMUNANAGAR	19	28	19	16
<b>Total</b>	<b>1124</b>	<b>984</b>	<b>532</b>	<b>546</b>

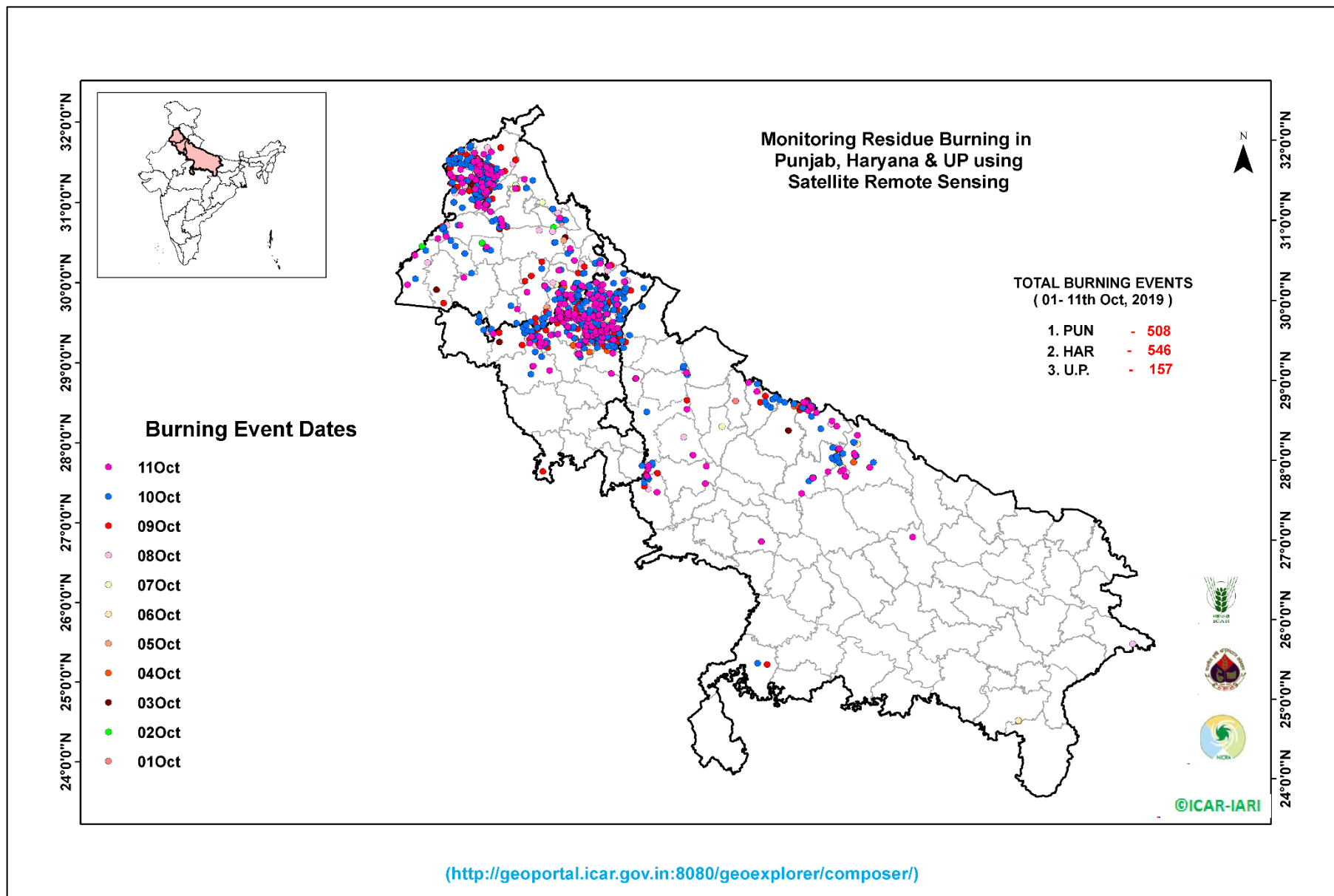
(c) Uttar Pradesh

Districts	01-11 Oct			
	2016	2017	2018	2019
AGRA	0	0	0	0
ALIGARH	0	8	6	7
ALLAHABAD	0	0	3	0
AMBEDKARNAGAR	0	1	0	0
AMETHI	0	0	0	0
AMROHA	0	0	0	0
AURAIYA	31	29	14	0
AZAMGARH	0	0	0	0
BADAUN	0	0	0	0
BAGHPAT	0	0	0	2
BAHRAICH	0	0	2	0
BALLIA	0	0	0	1
BALRAMPUR	0	0	0	0
BANDA	0	0	1	0
BARABANKI	7	13	24	1
BAREILLY	20	11	4	6
BASTI	0	0	0	0
BHADOHI	0	0	0	0
BIJNOR	0	0	1	0
BULANDSAHAR	0	2	2	2
CHANDAULI	0	0	0	0
CHITRAKOOT	0	0	0	0
DEORIA	0	0	0	0
ETAH	0	1	2	0
ETAWAH	0	2	0	0
FAIZABAD	0	1	0	0
FARRUKHABAD	0	0	0	0
FATEHPUR	0	2	2	0
FIROZABAD	0	0	0	0

GAUTAMBUDHNAGAR	1	0	1	0
GAZIPUR	0	0	0	0
GHAZIABAD	1	1	2	1
GONDA	0	0	0	0
GORAKHPUR	0	0	3	0
HAMIRPUR	0	0	1	0
HAPUR	0	0	0	2
HARDOI	0	2	2	0
HATHRAS	0	0	0	0
JALAUN	0	0	0	0
JAUNPUR	0	0	2	0
JHANSI	0	0	0	2
KANNAUJ	0	0	1	0
KANPUR	0	0	0	0
KANPUR DEHAT	0	1	0	0
KASGANJ	0	0	0	0
KAUSHAMBI	0	2	6	0
KHERI	30	55	21	25
KUSHINAGAR	0	1	0	0
LALITPUR	0	0	0	0
LUCKNOW	2	4	0	1
MAHARAJGANJ	0	1	1	0
MAHOBA	0	0	0	0
MAINPURI	0	2	2	1
MATHURA	7	9	27	14
MAU	0	0	0	0
MEERUT	2	2	0	4
MIRZAPUR	0	1	1	3
MORADABAD	1	3	1	1
MUZAFARNAGAR	5	27	5	4
PILHIBHIT	42	76	28	32
PRATAPGARH	0	0	0	0

RAE BARELI	0	0	0	0
RAMPUR	94	64	31	12
SHARANPUR	6	6	5	4
SAMBHAL	0	0	0	1
SANTKABIRNAGAR	0	0	0	0
SHAHJAHANPUR	101	173	67	26
SHAMALI	0	0	0	5
SHRAWASTI	0	0	0	0
SIDDHARTHANAGAR	0	0	0	0
SITAPUR	3	4	1	0
SONBHADRA	3	1	3	0
SULTANPUR	0	0	0	0
UNNAO	0	0	0	0
VARANASI	0	0	0	0
JYOTIBAPHULE NAGAR	0	0	0	0
MAHAMAYANAGAR	0	0	0	0
<b>Total</b>	<b>356</b>	<b>505</b>	<b>272</b>	<b>157</b>

### Map of Cummulative Burning Events (01 – 11 Oct 2019)



## The study used images received from following Satellites at IARI Satellite Ground Station

S. No.	Satellite Name	Sensor	Resolution (meter)	Day / Night Passes
1.	Suomi NPP	VIIRS	375 / 1000	Both
2.	Terra	MODIS	1000	Both
3.	Aqua	MODIS	1000	Both
4.	NOAA – 18	AVHRR	1000	Night
5.	NOAA – 19	AVHRR	1000	Night
6.	Metop - 1	AVHRR	1000	Night
7.	Metop - 2	AVHRR	1000	Night

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GIS Maps of fire events can be visualized online on ICAR KRISHI Geoportal website: <http://geoportal.icar.gov.in:8080/geoexplorer/composer/>  
(Part of KRISHI Portal: <https://krishi.icar.gov.in> initiative)

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