



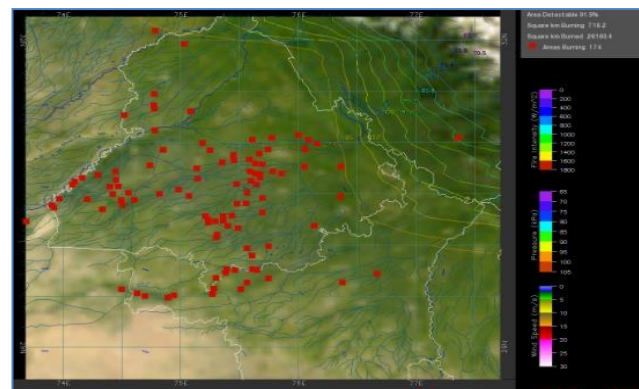
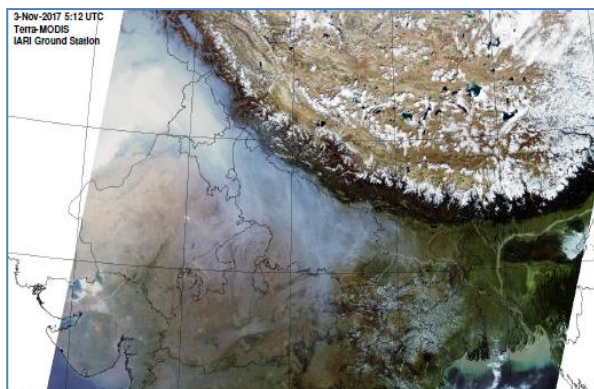
## Bulletin No. 21

Events Date:  
05-Oct-2022

Issued on:  
05-Oct-2022



# MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2022



Prepared by:

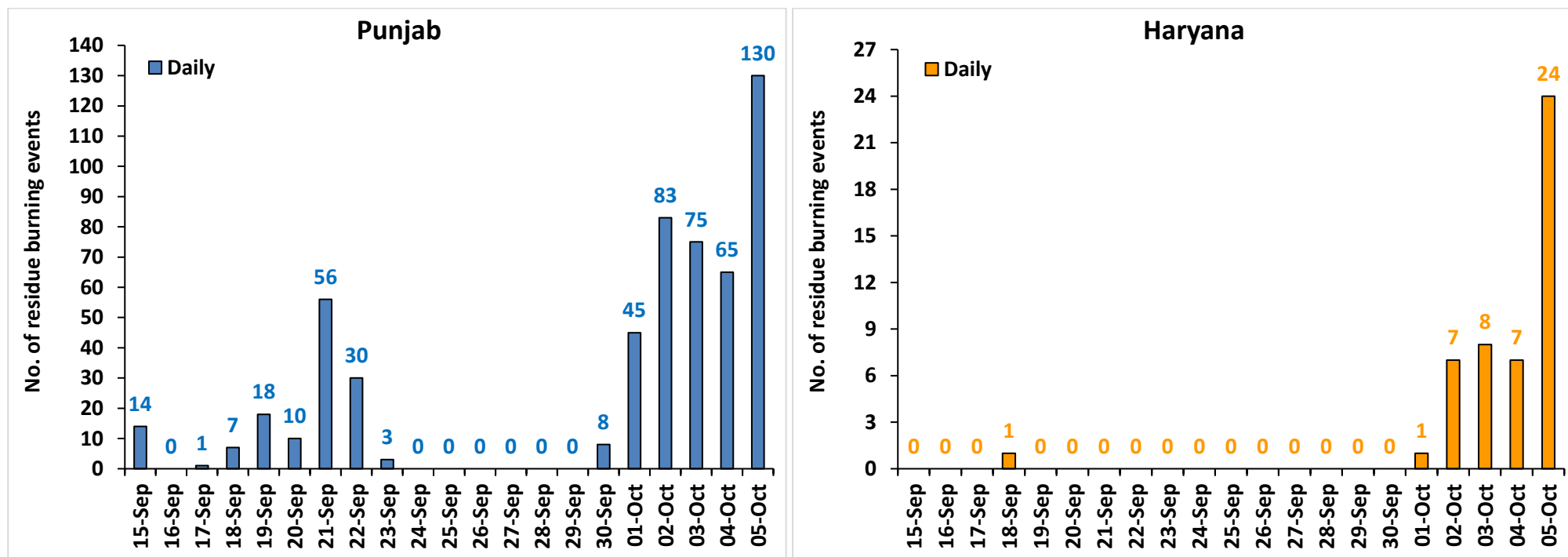
Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012

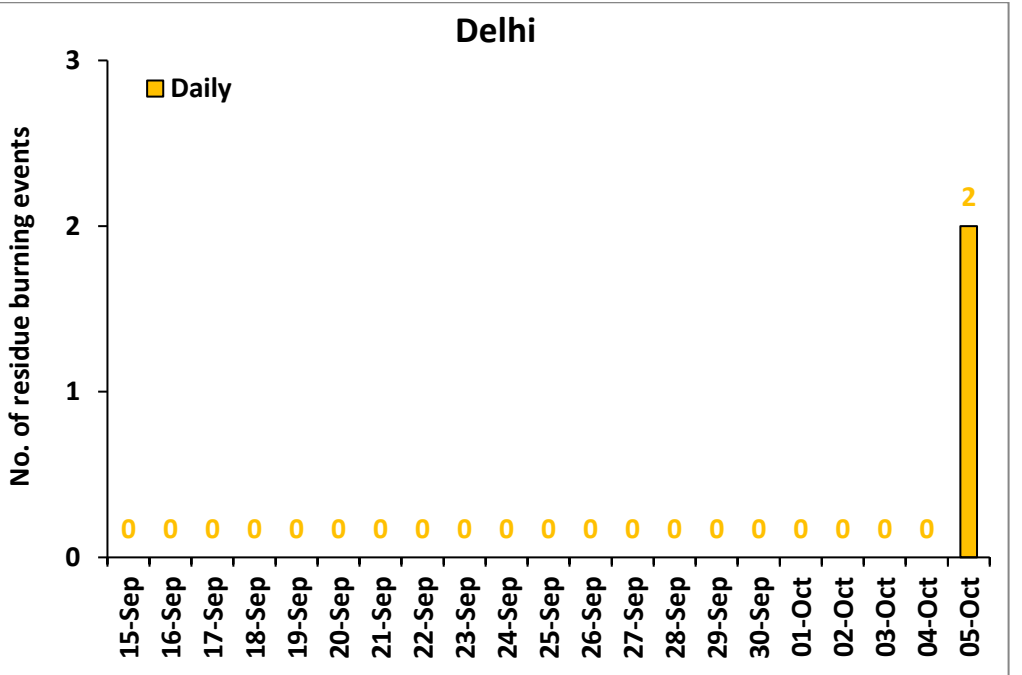
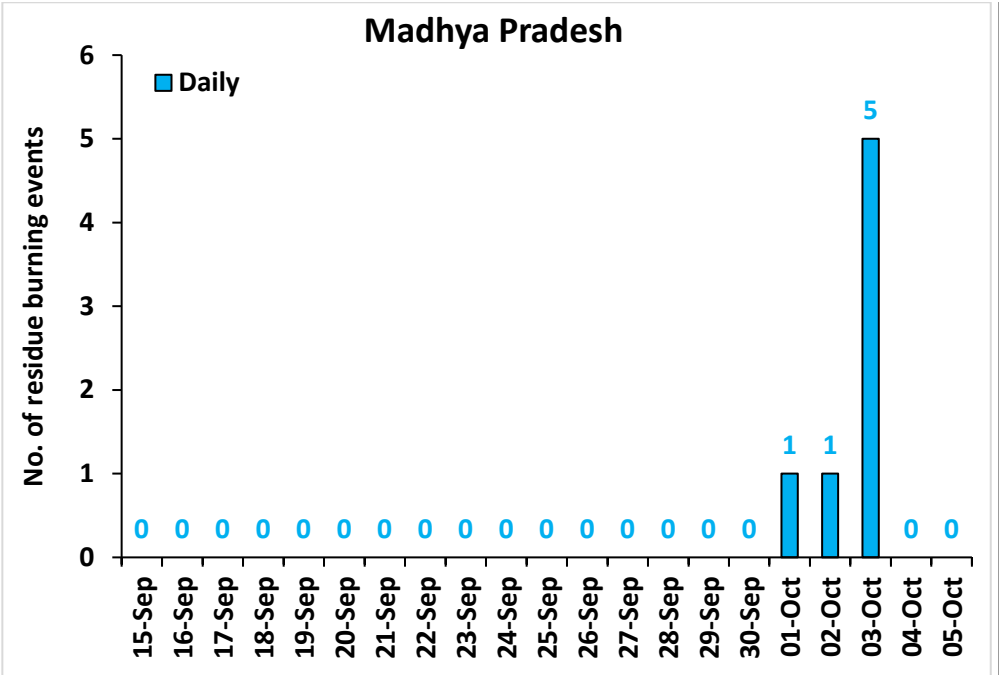
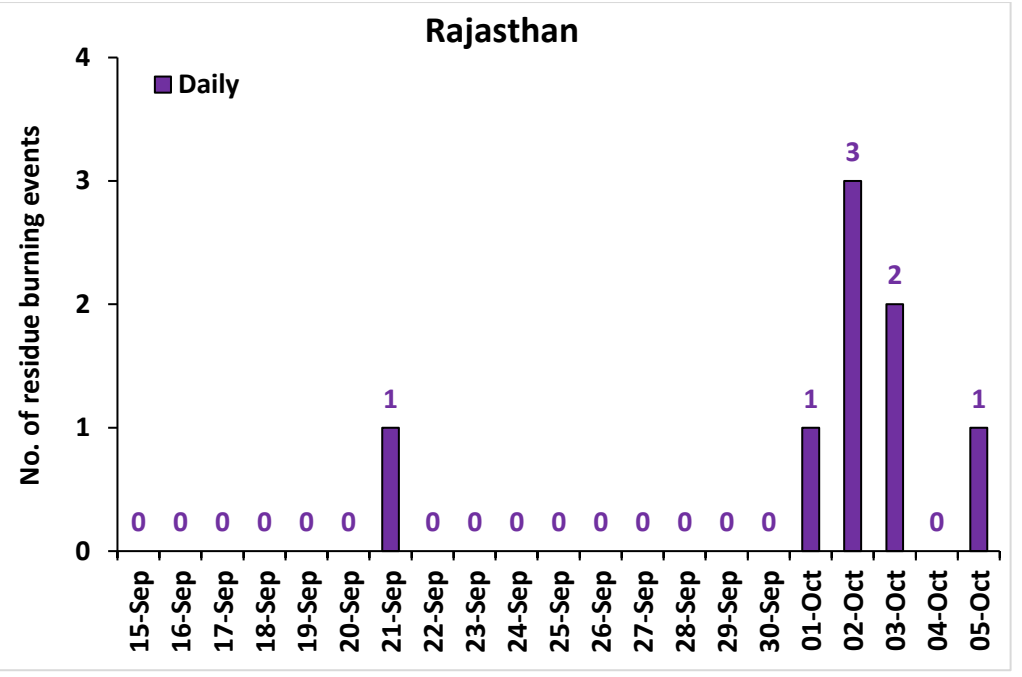
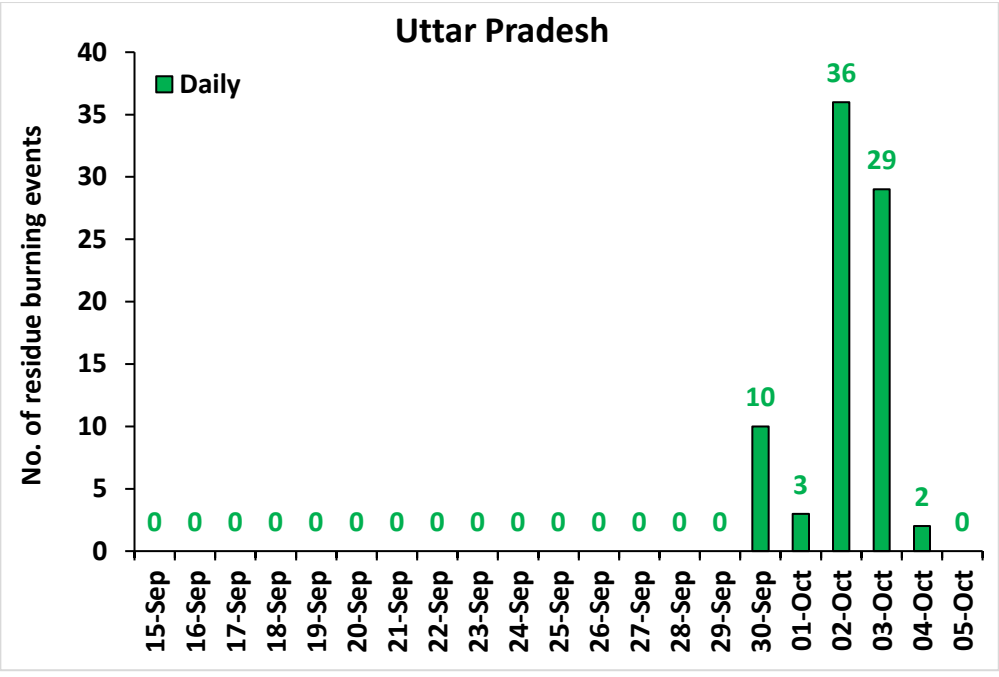
<http://creams.iari.res.in>

## Highlights for 05-Oct-2022

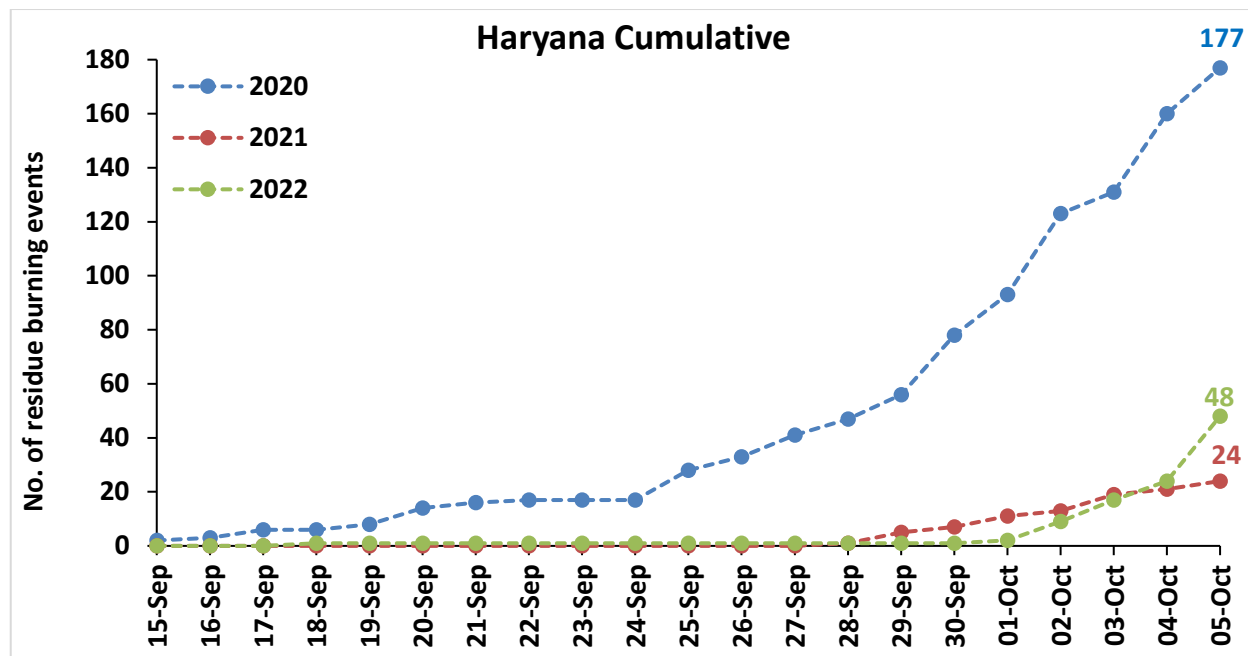
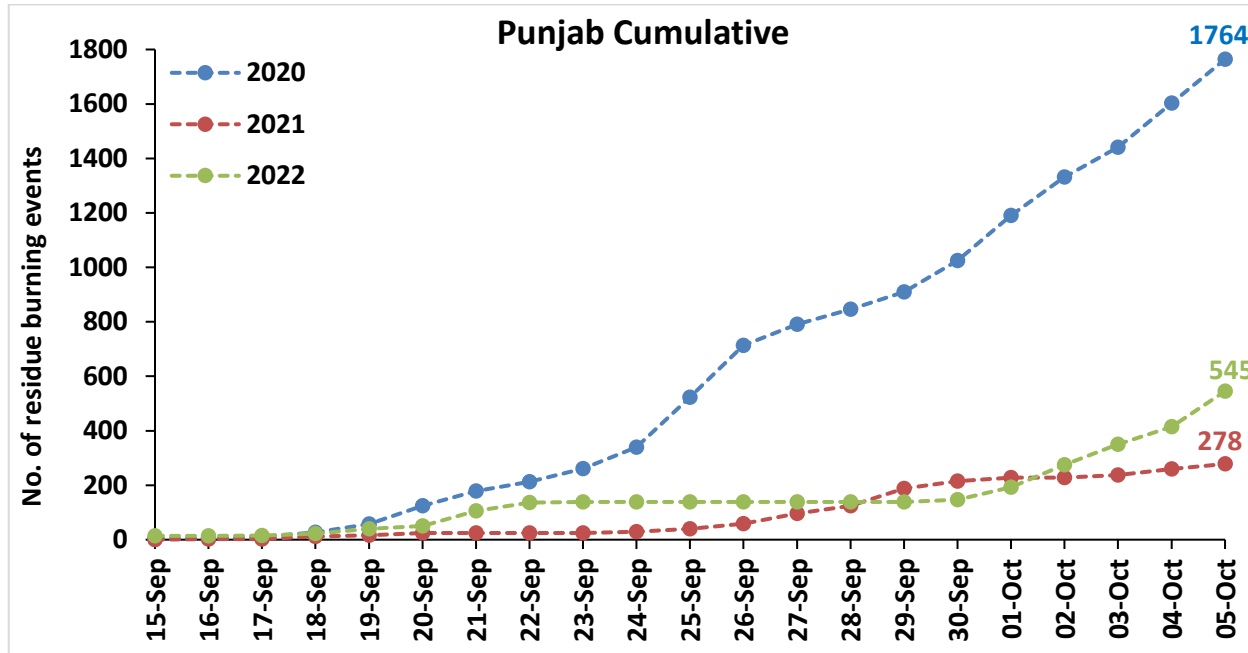
- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **157** residue burning events in the six study States on 05-Oct-2022.
- The state wise events detected on 05-Oct-2022 were **130** in Punjab, **24** in Haryana, **0** in UP, **2** in Delhi, **1** in Rajasthan and **0** in MP.
- Total **690** burning events were detected in the six states between 15-Sept-2022 and 05-Oct-2022, which are distributed as **545**, **48**, **80**, **2**, **8** and **7** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of residue burning events was hampered by the presence of clouds over Uttar Pradesh and Madhya Pradesh.

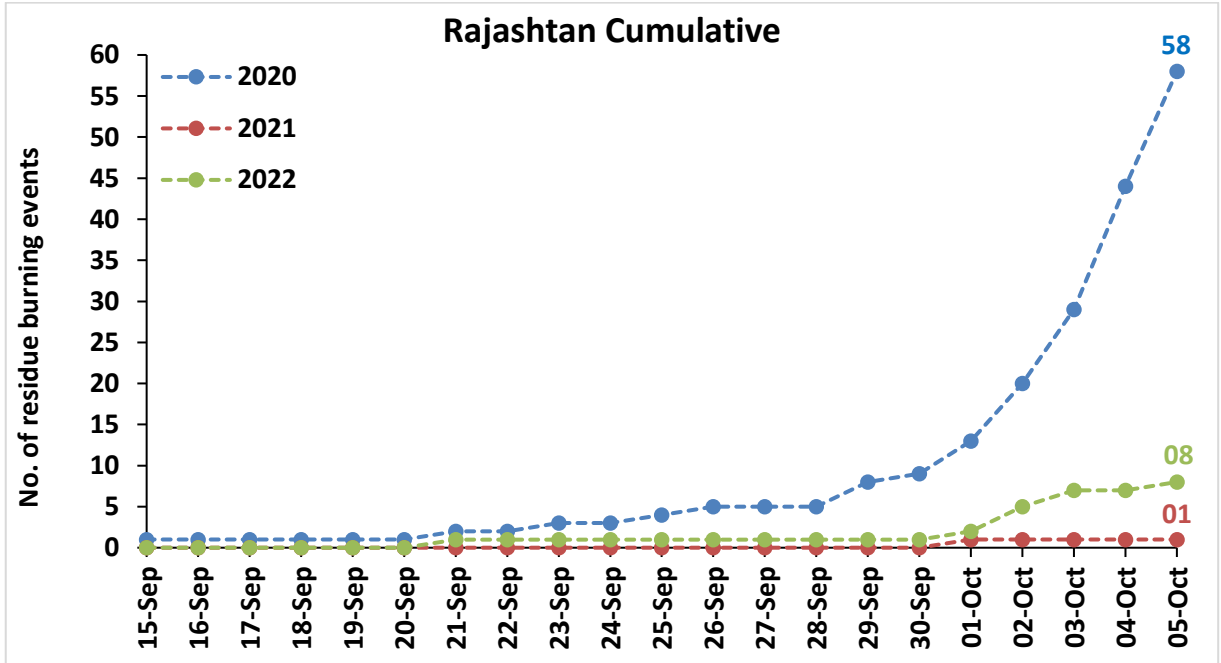
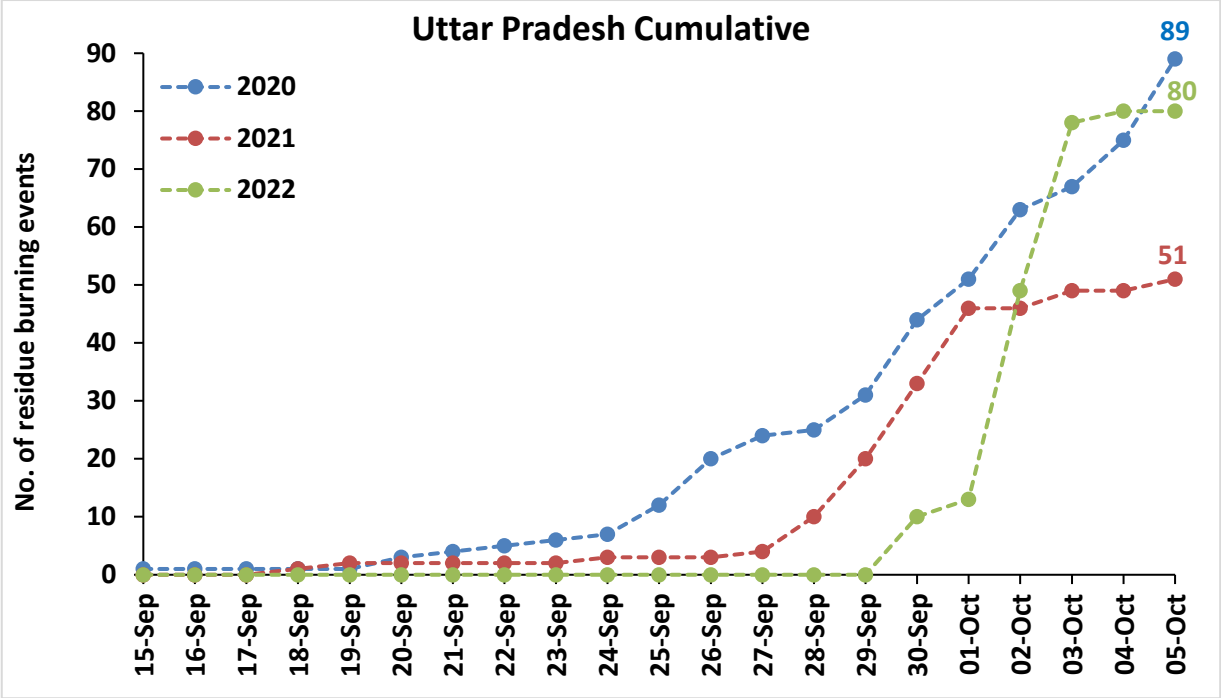
### Temporal distribution of rice residue burning events for the study States in 2022

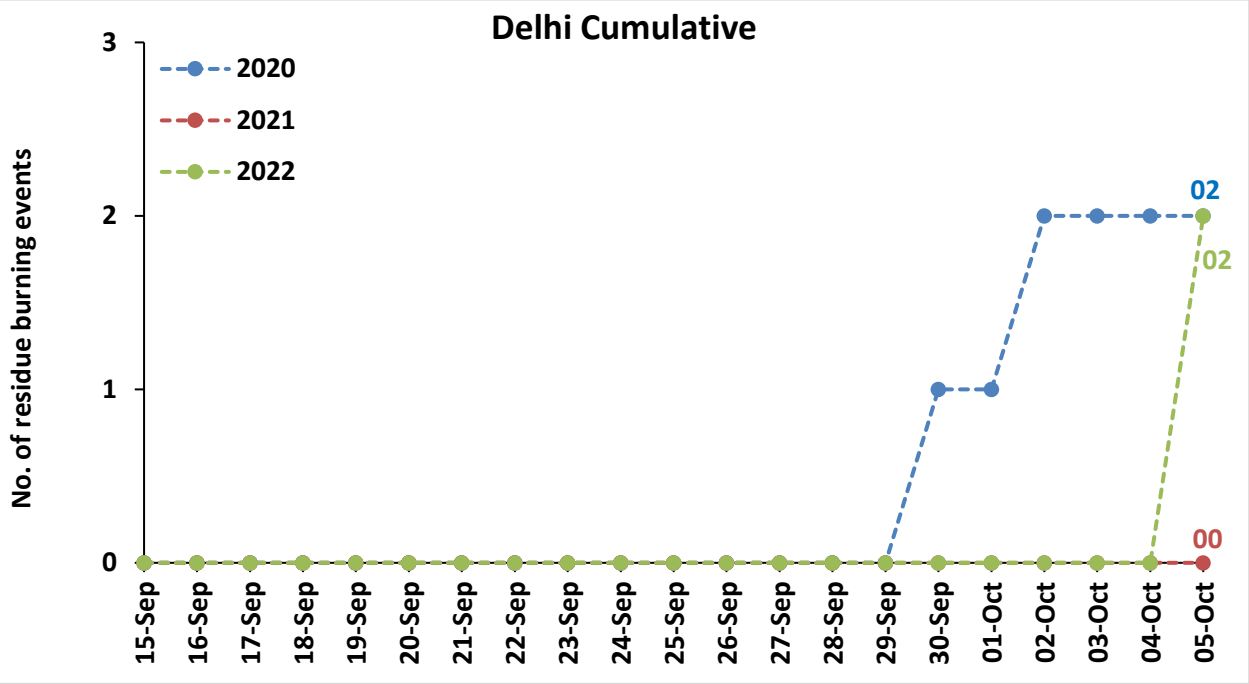
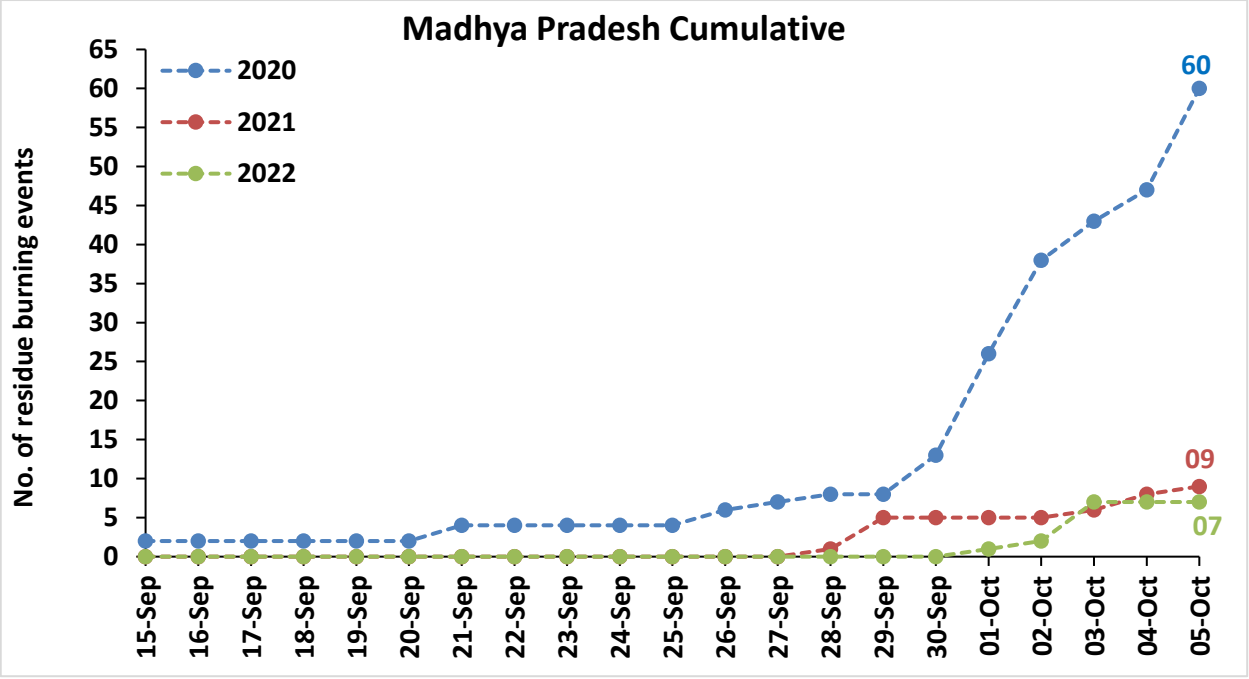




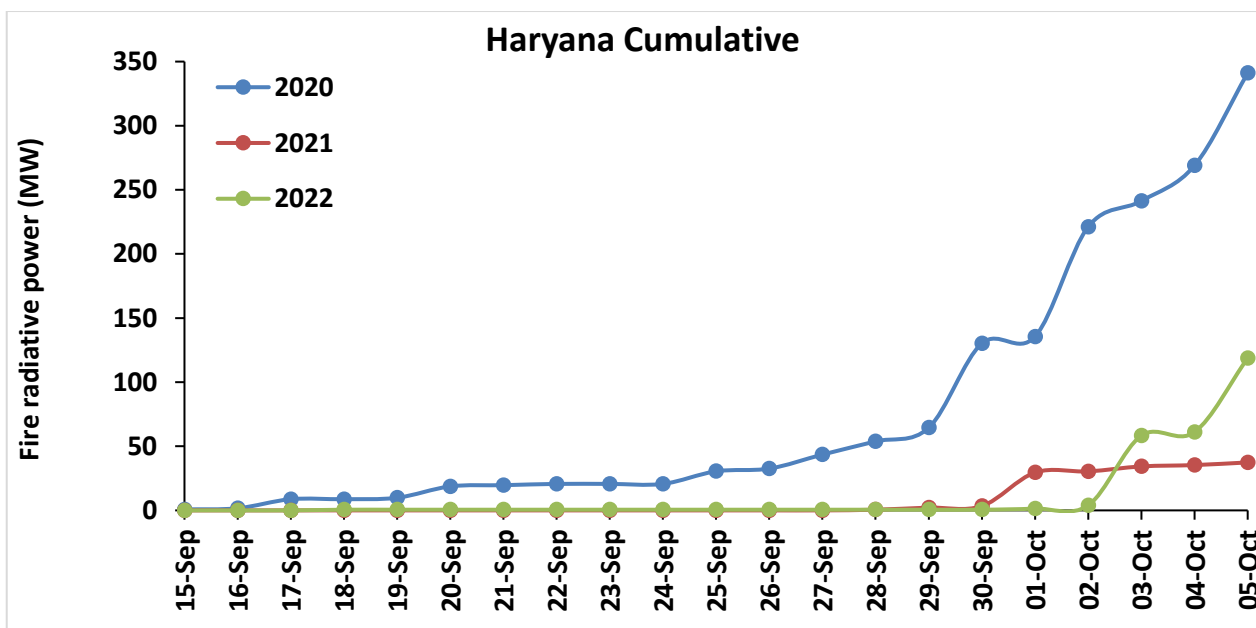
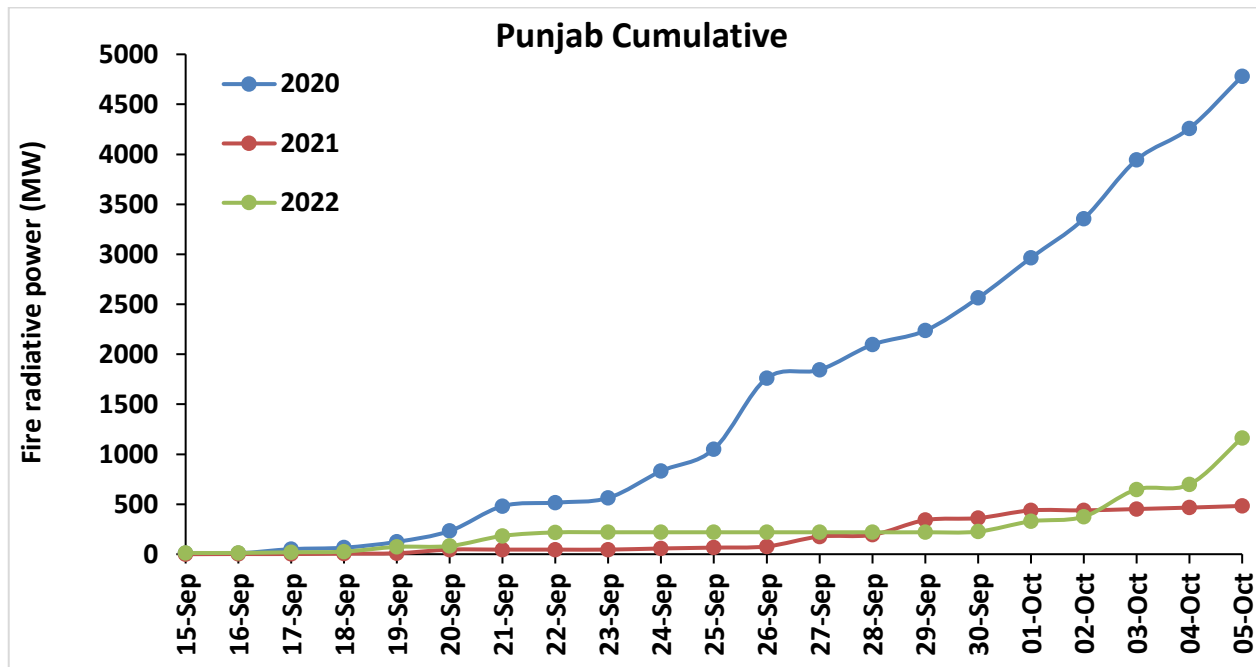
**Comparison of residue burning events in current year (2022) with previous years (2020 and 2021) for the study States**

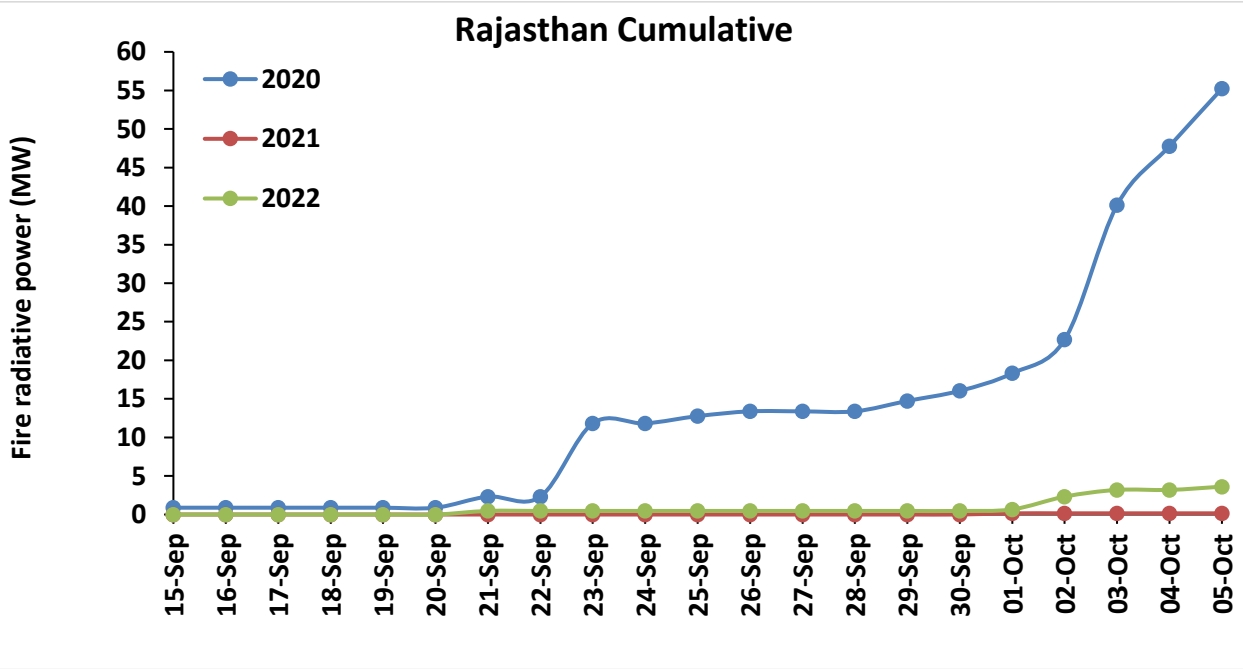
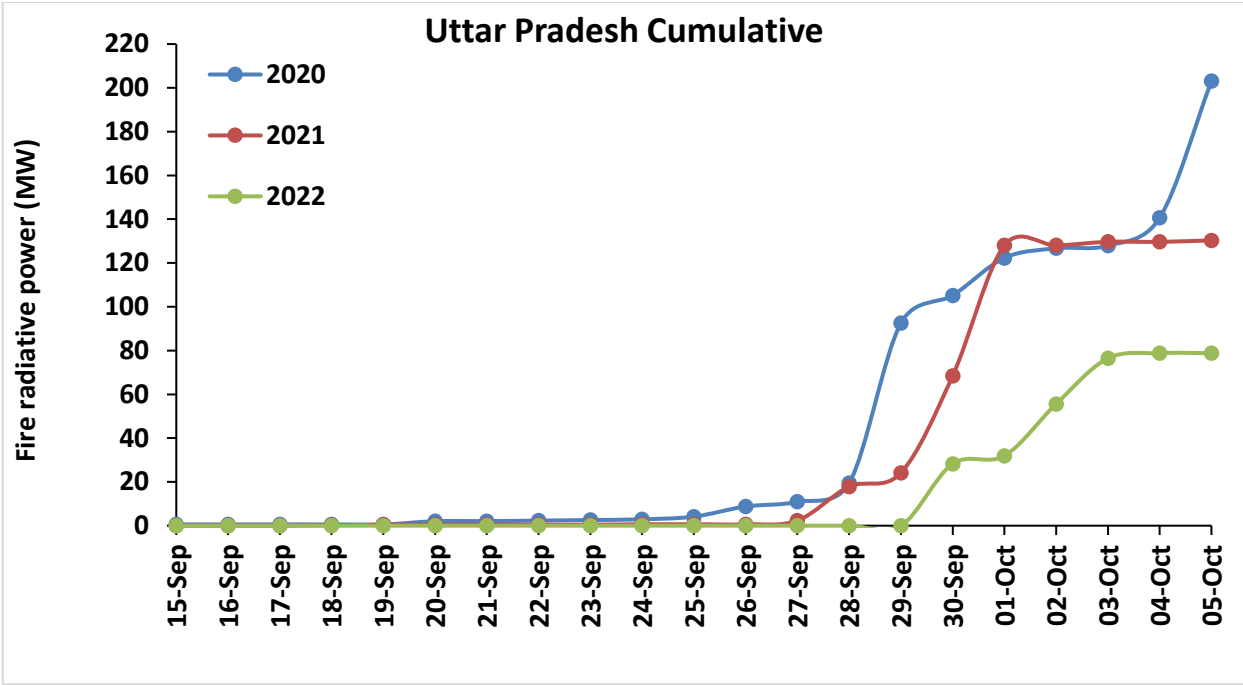




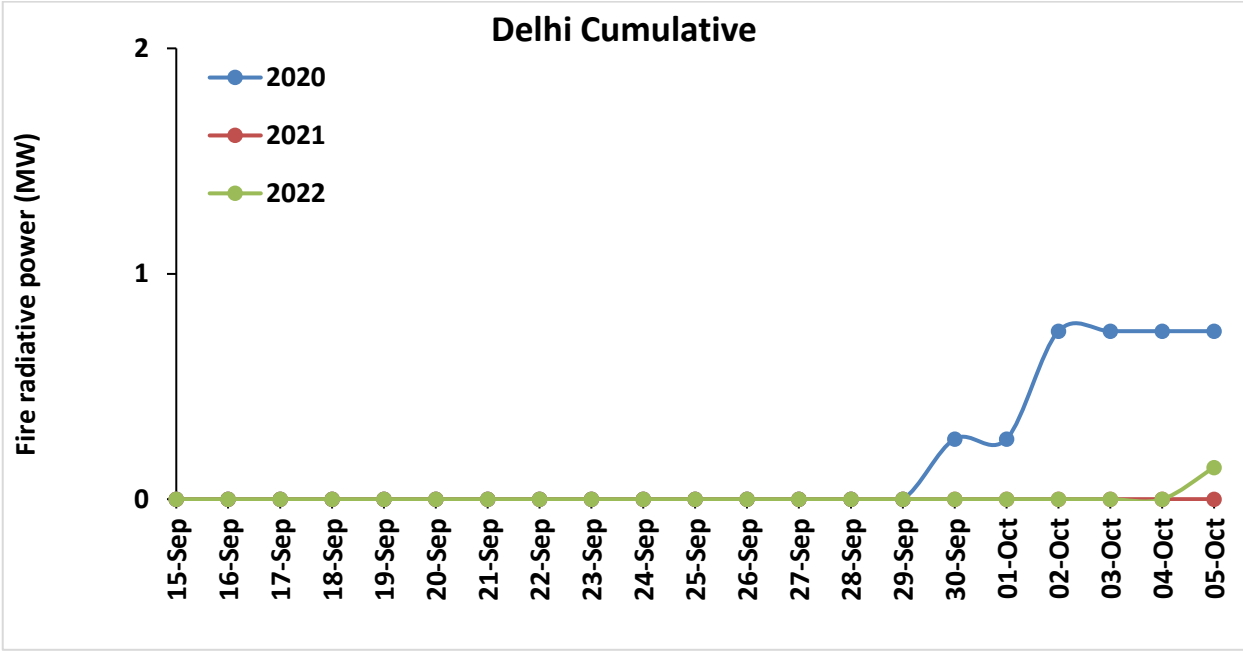
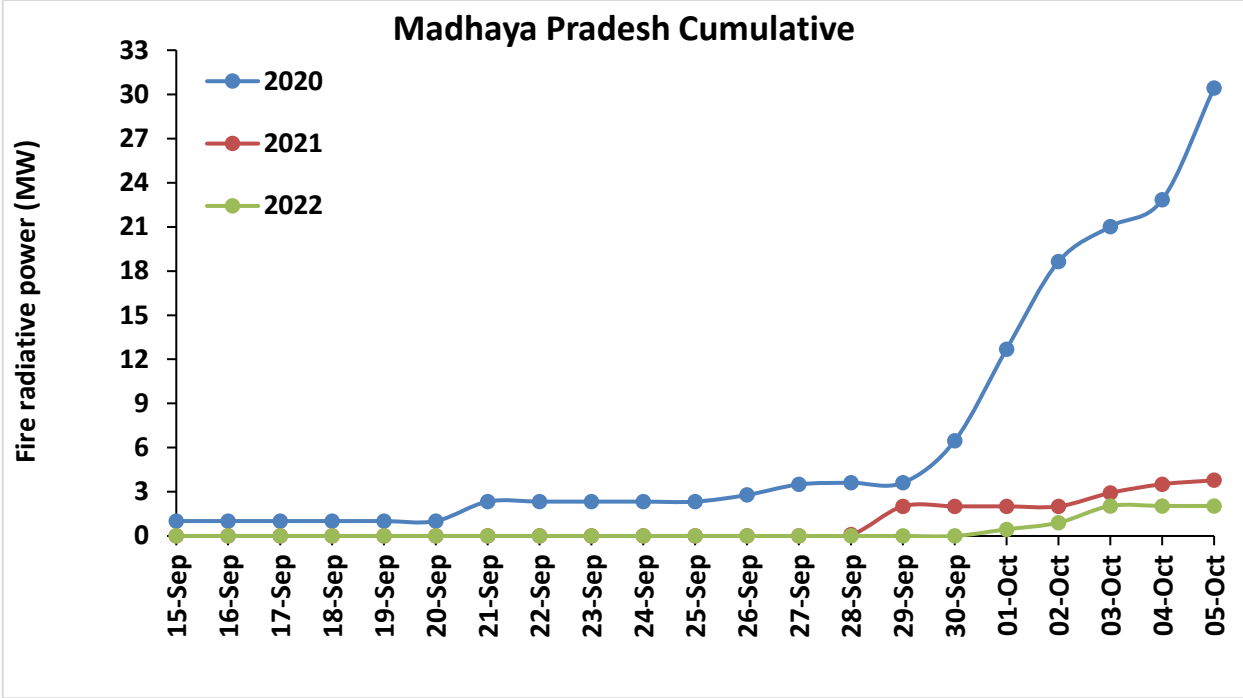


### Comparison of residue burning fire power in current year (2022) with previous years (2021 and 2020) for the study States



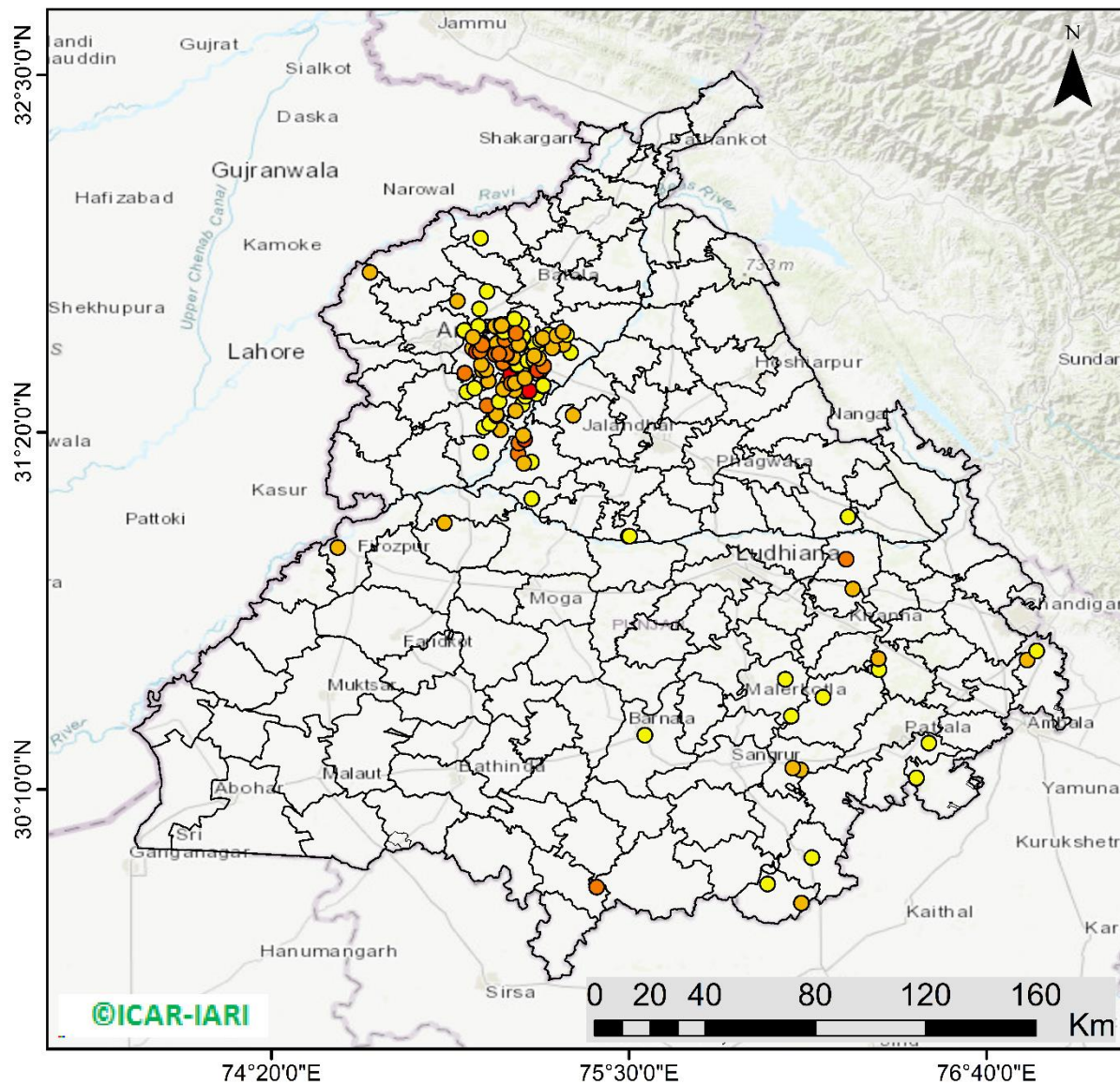






# Punjab

## RICE RESIDUE BURNING IN PUNJAB



**130** burning events detected in Punjab during (05th Oct 2022)

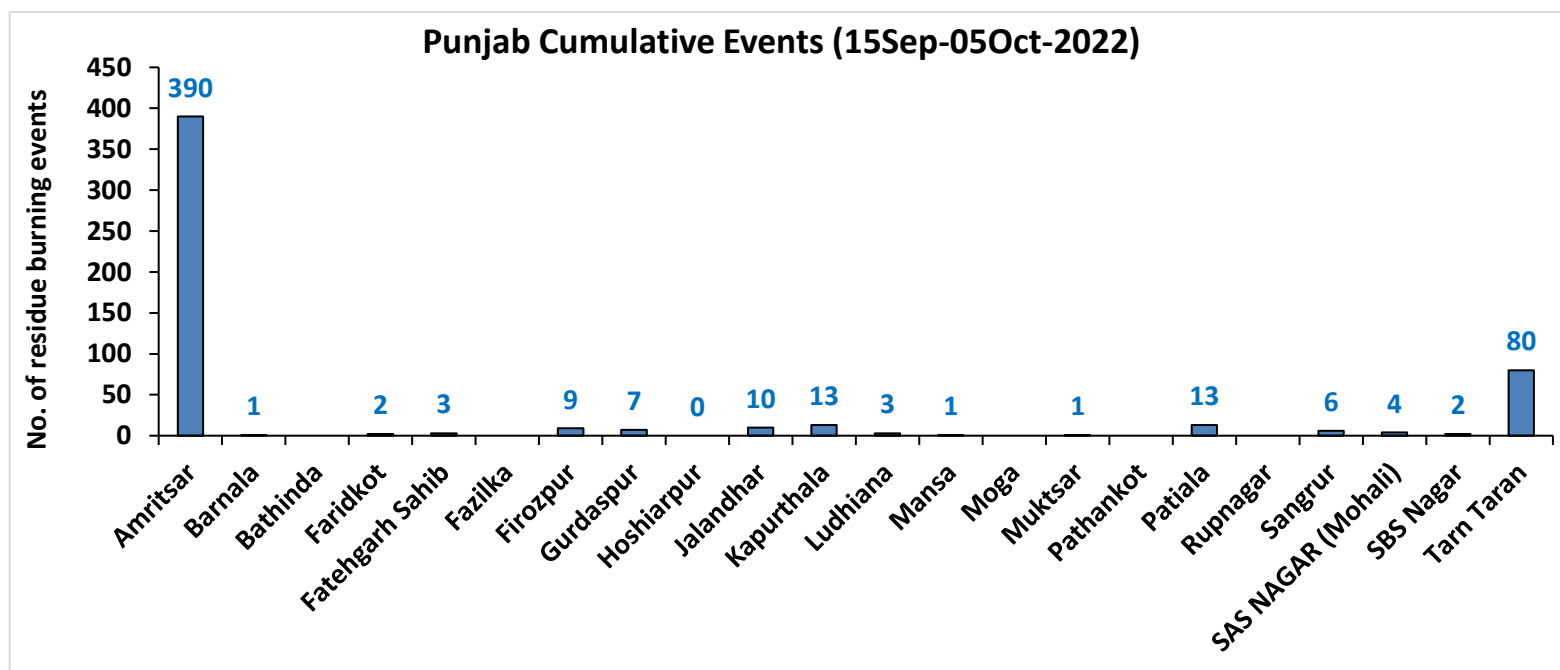
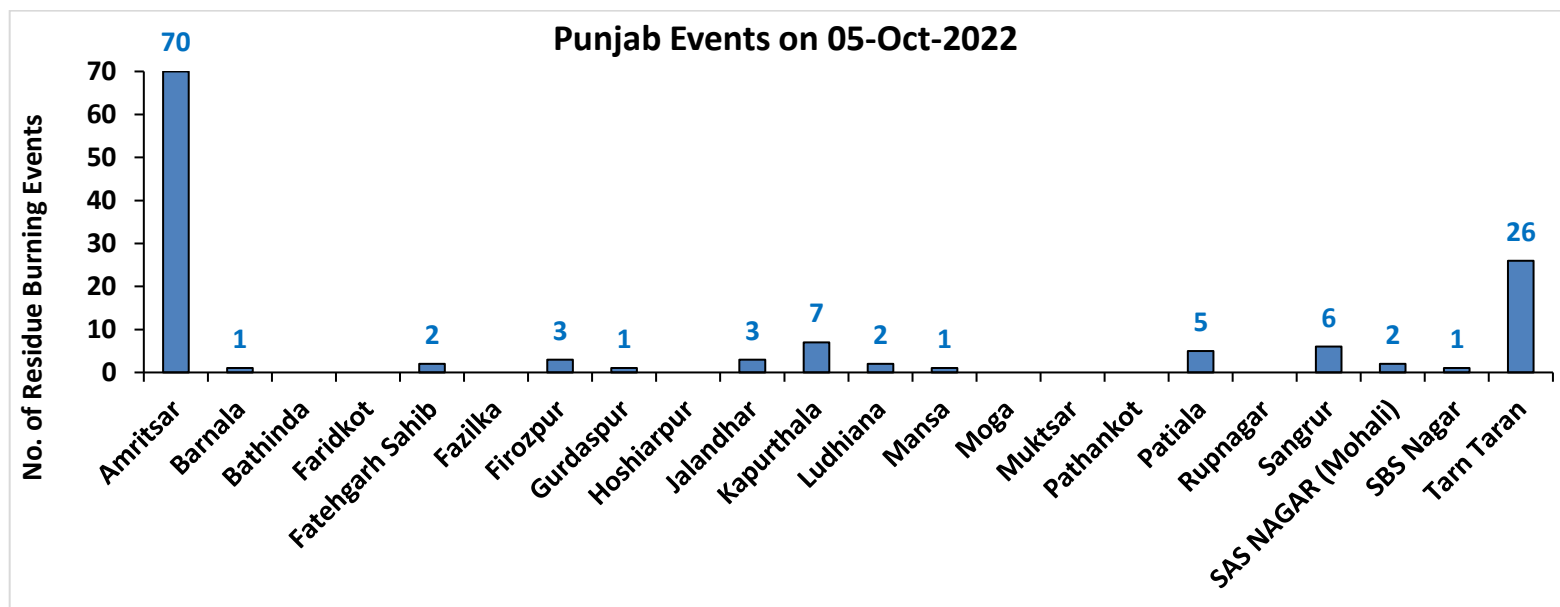
### Fire Intensity (W/m<sup>2</sup>)

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



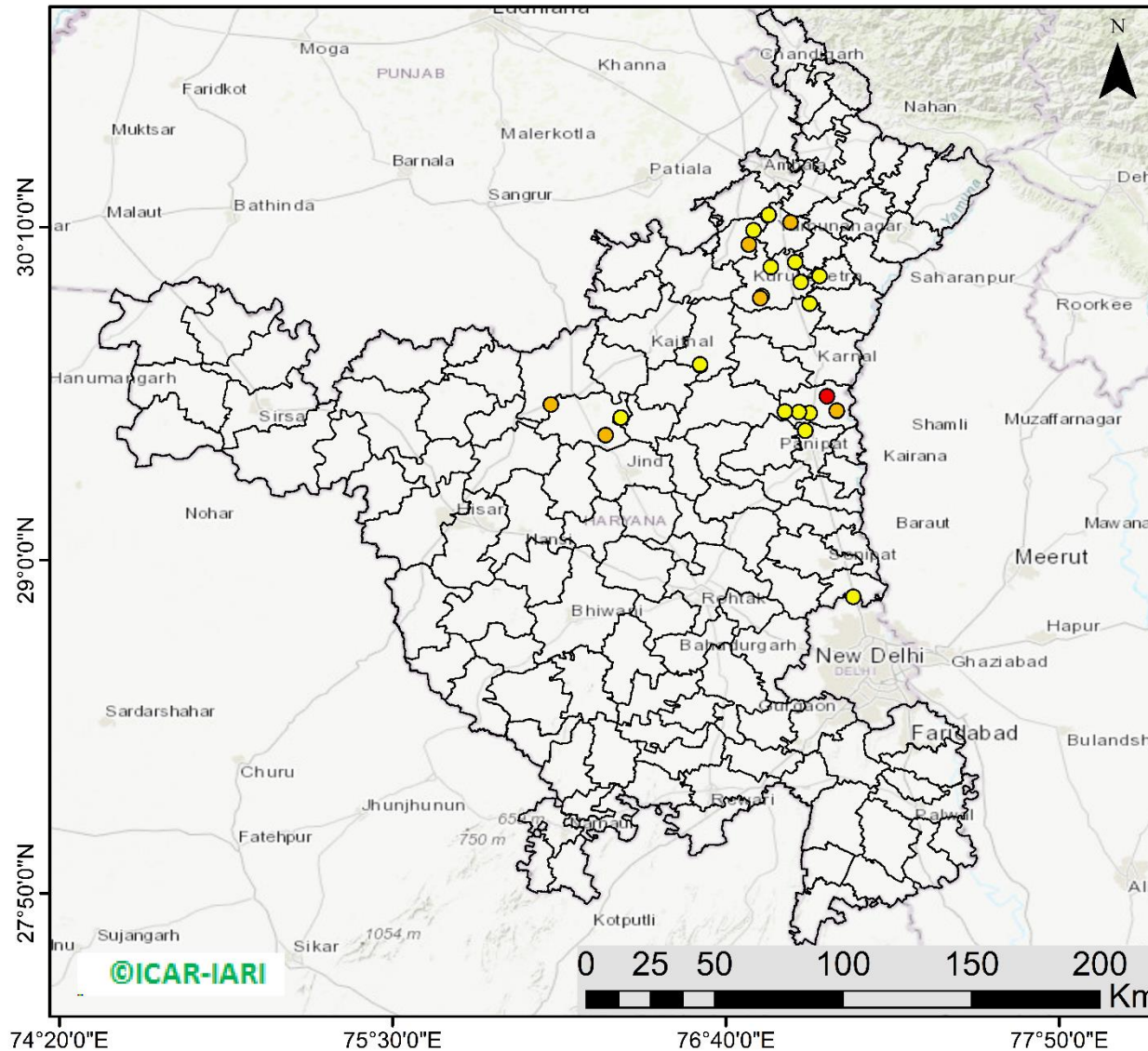
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

## District-wise cumulative number of residues burning events in Punjab (15Sep- 05Oct-2022)



# Haryana

## RICE RESIDUE BURNING IN HARYANA



**24** burning events detected in Haryana on (05th Oct 2022)

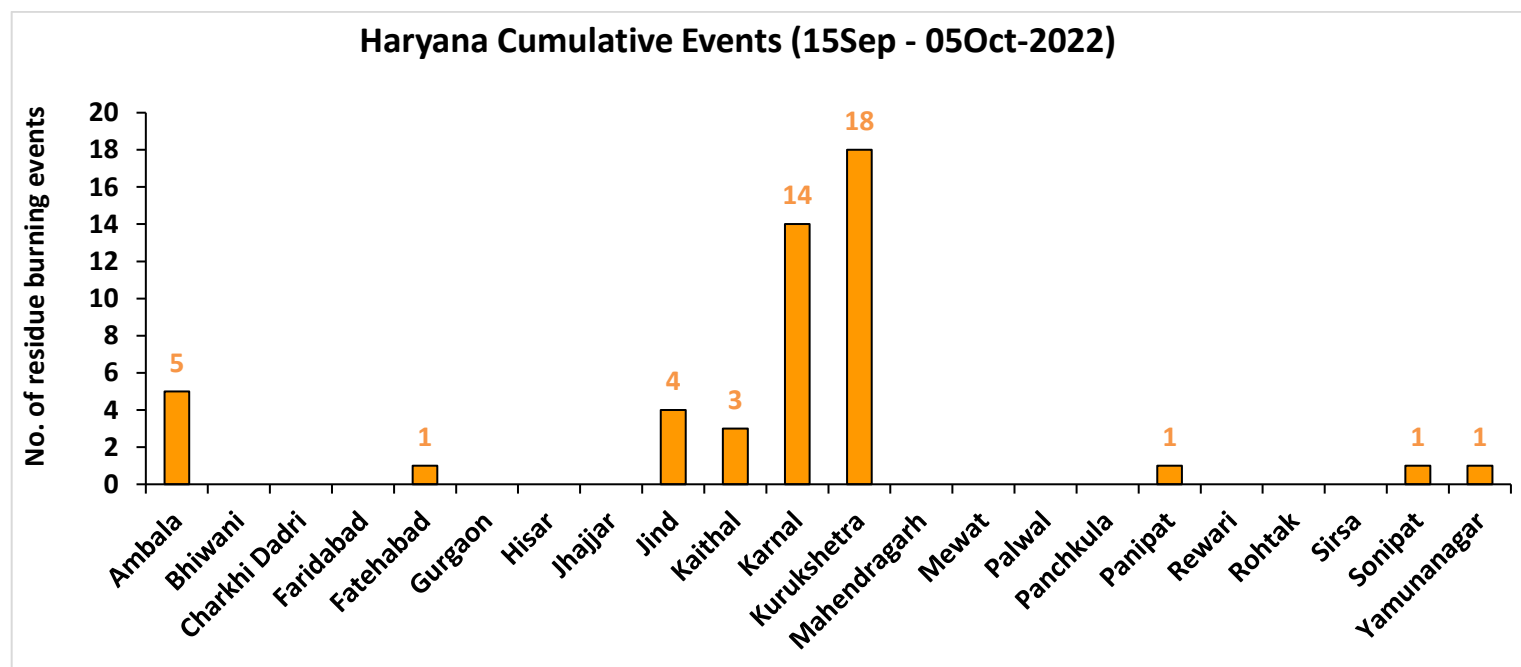
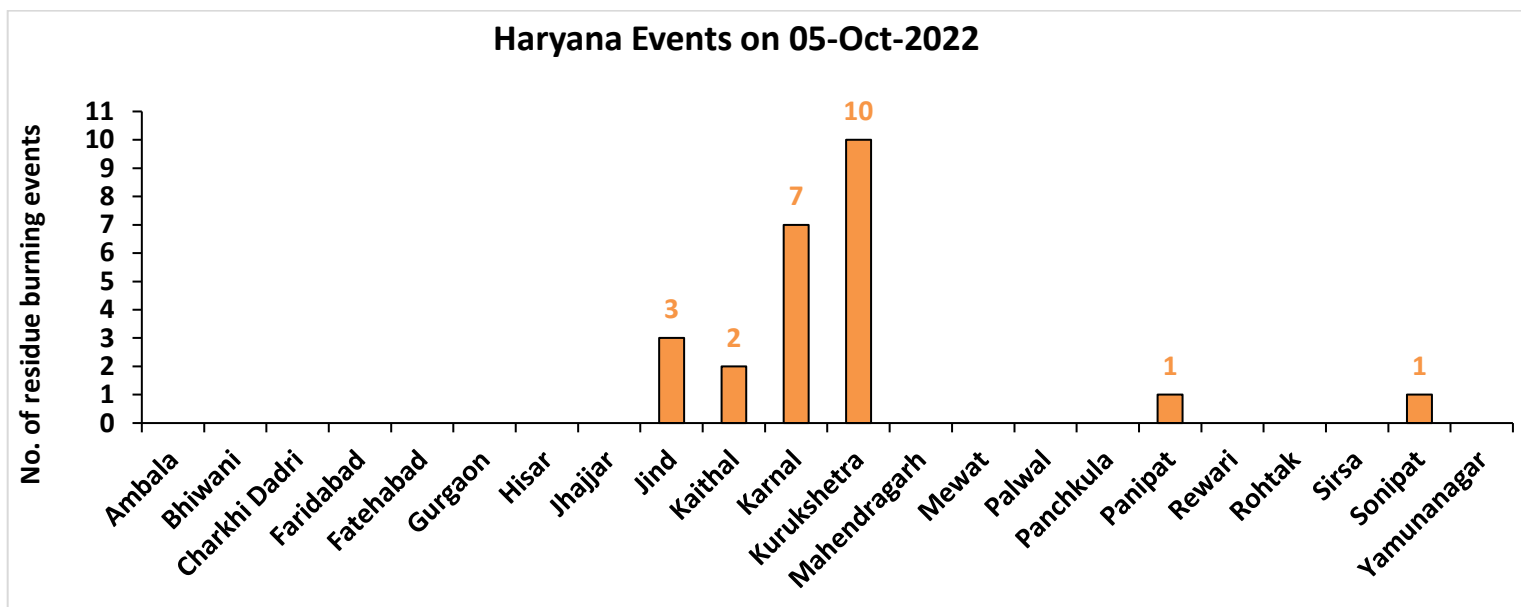
### Fire Intensity (W/m<sup>2</sup>)

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



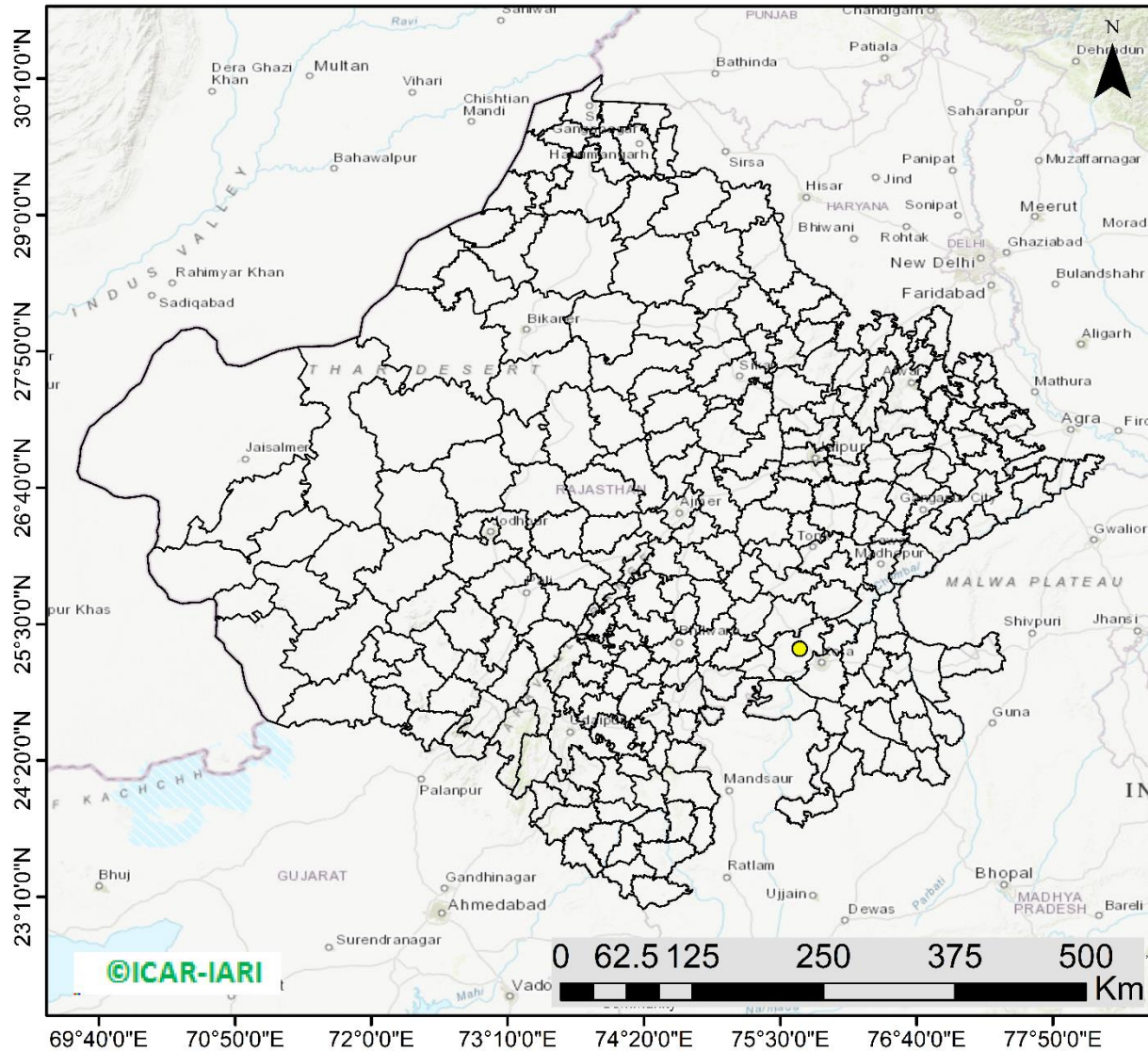
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

## District-wise cumulative number of residues burning events in Haryana (15Sep- 05Oct-2022)



# Rajasthan

## RICE RESIDUE BURNING IN RAJASTHAN



**01** burning events  
detected in Rajasthan on  
**(05th Oct 2022)**

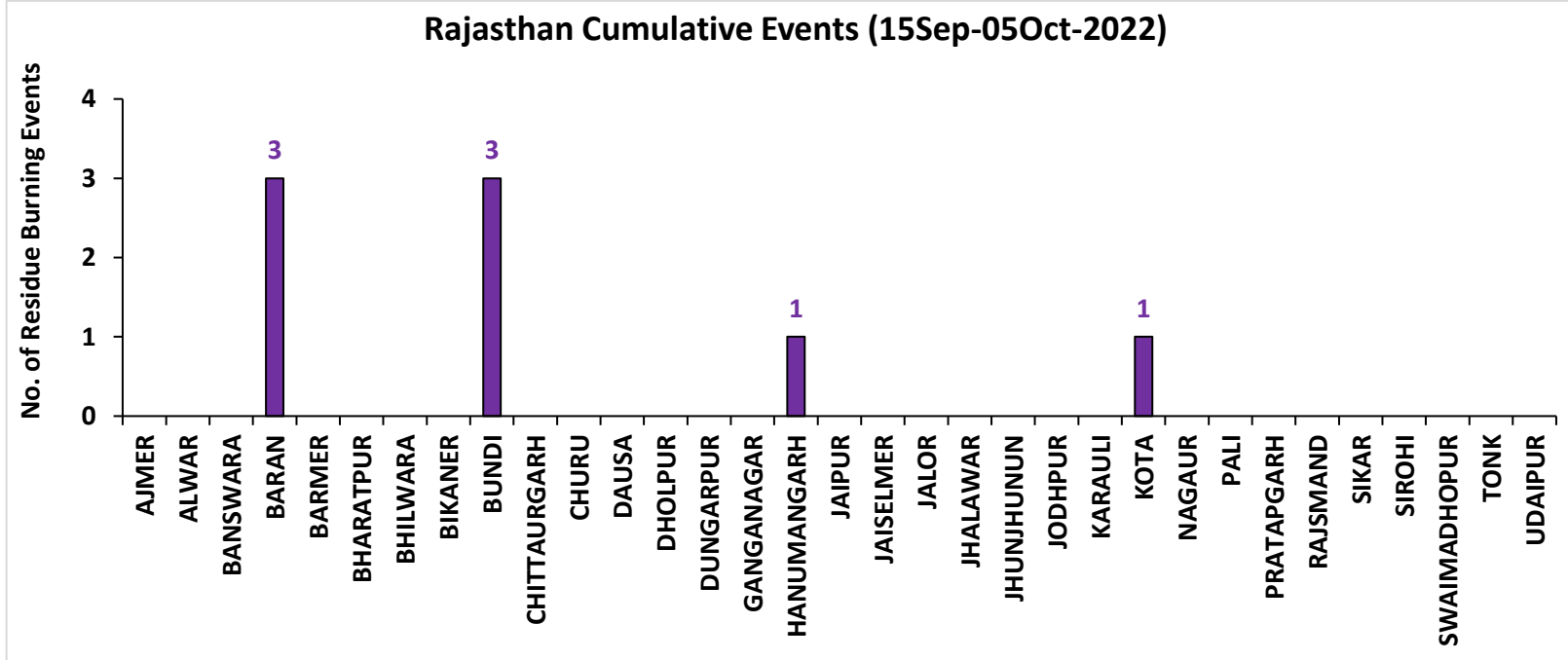
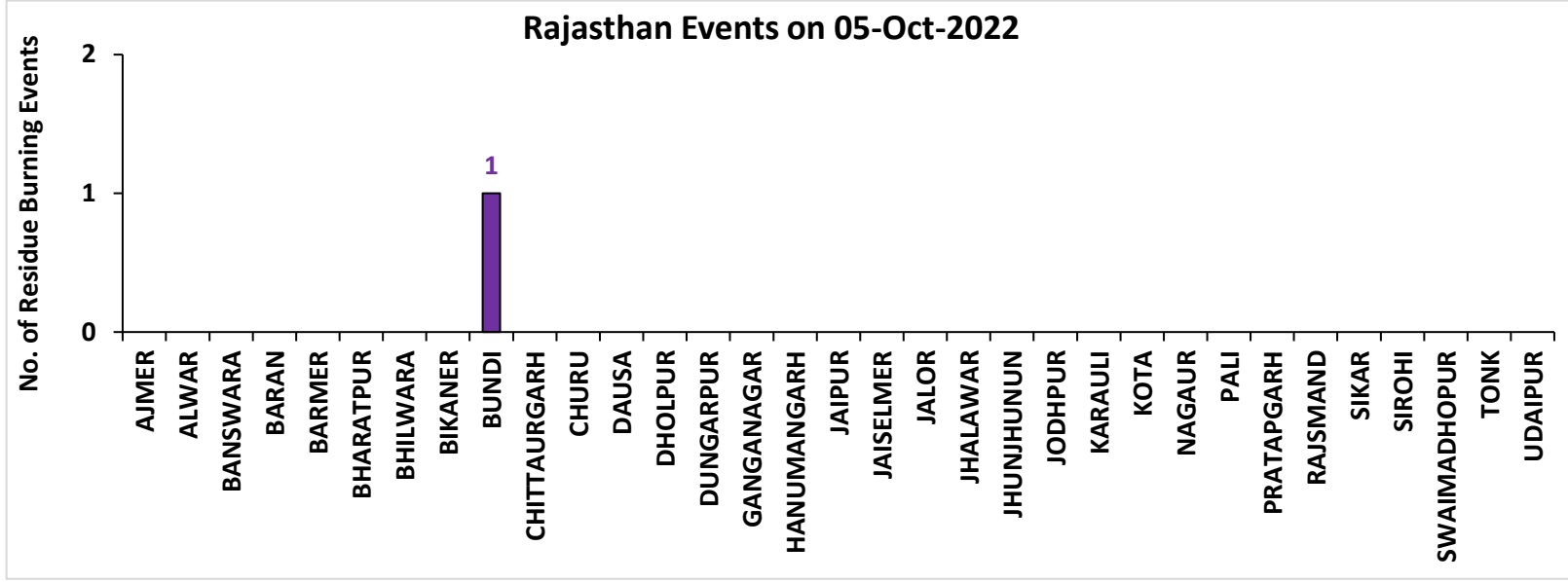
### Fire Intensity (W/m<sup>2</sup>)

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



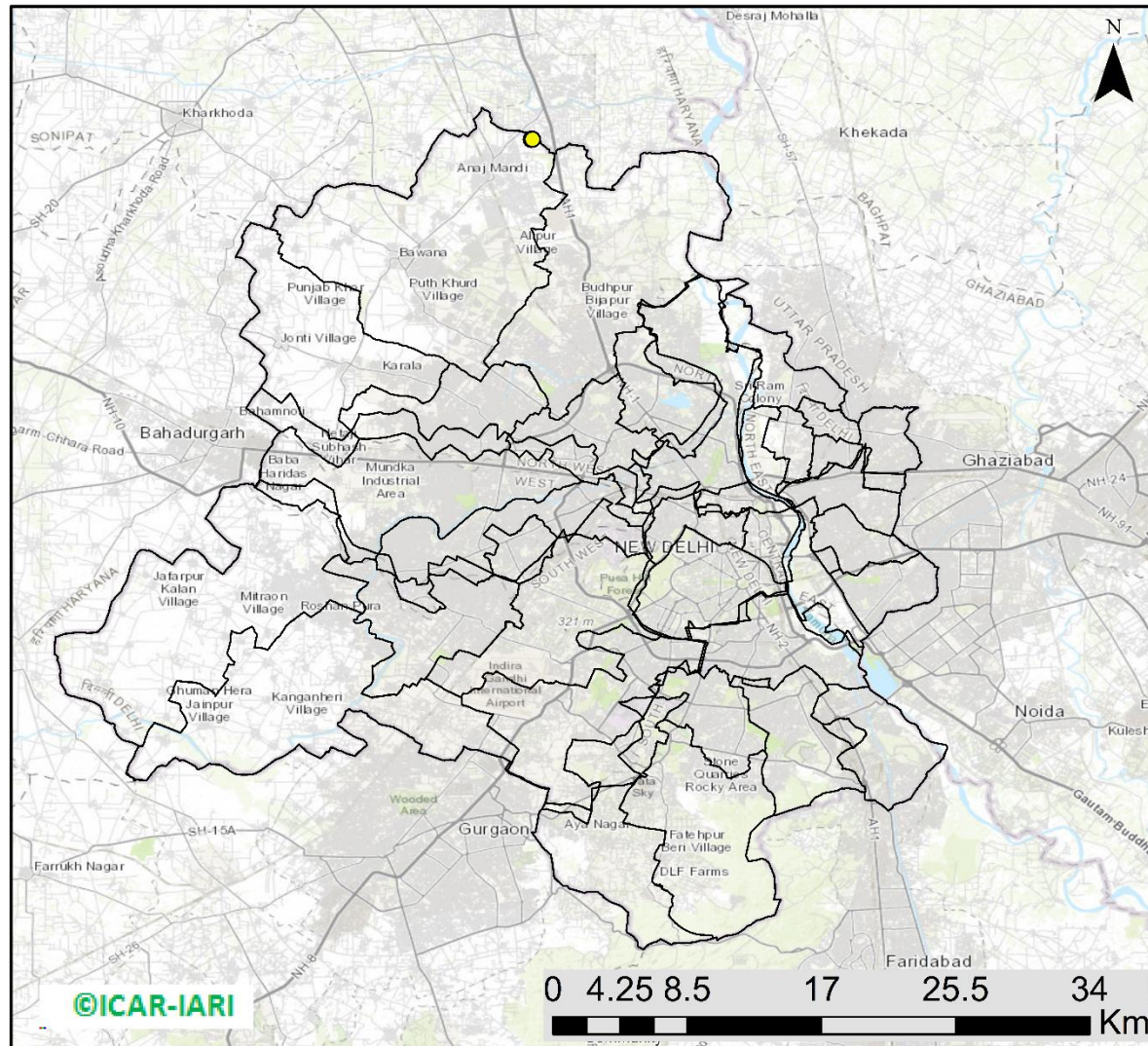
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

**District-wise cumulative number of residues burning events in Rajasthan (15Sep- 05Oct -2022)**



# Delhi

## RICE RESIDUE BURNING IN DELHI



**02** burning events  
detected in Haryana on  
(05th Oct 2022)

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

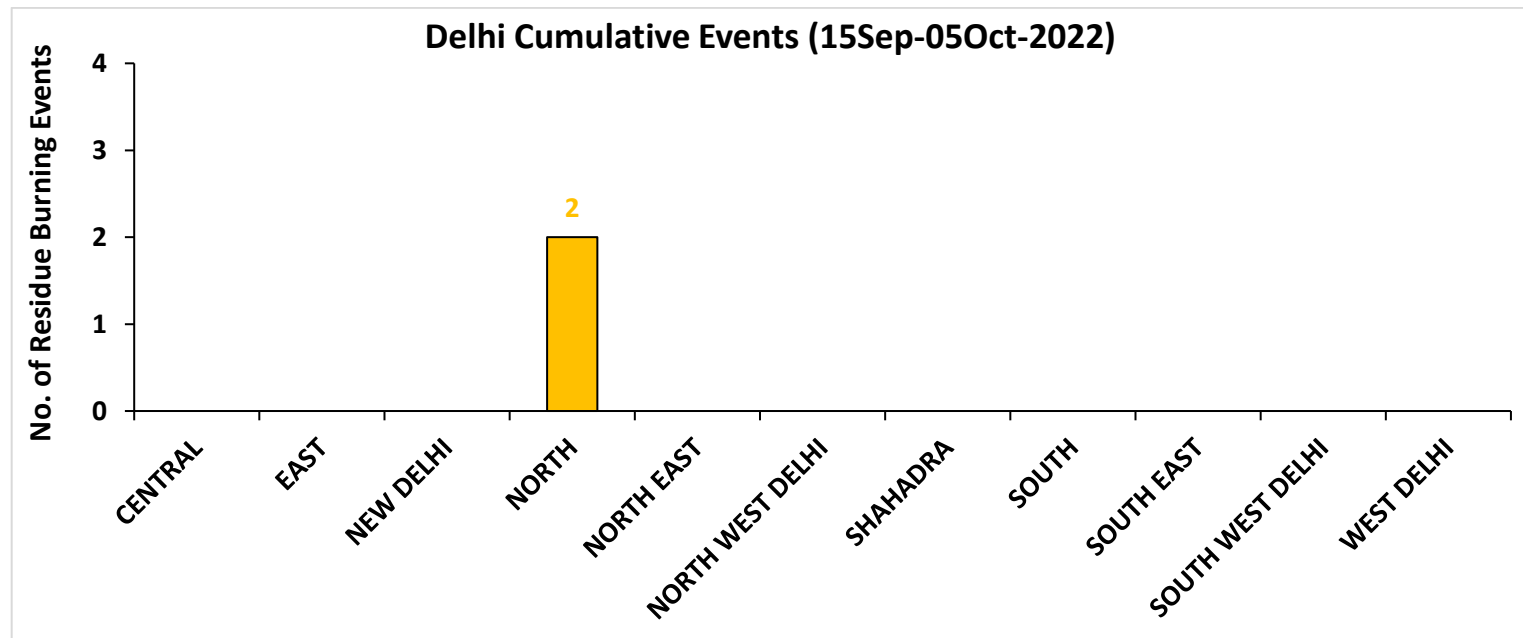
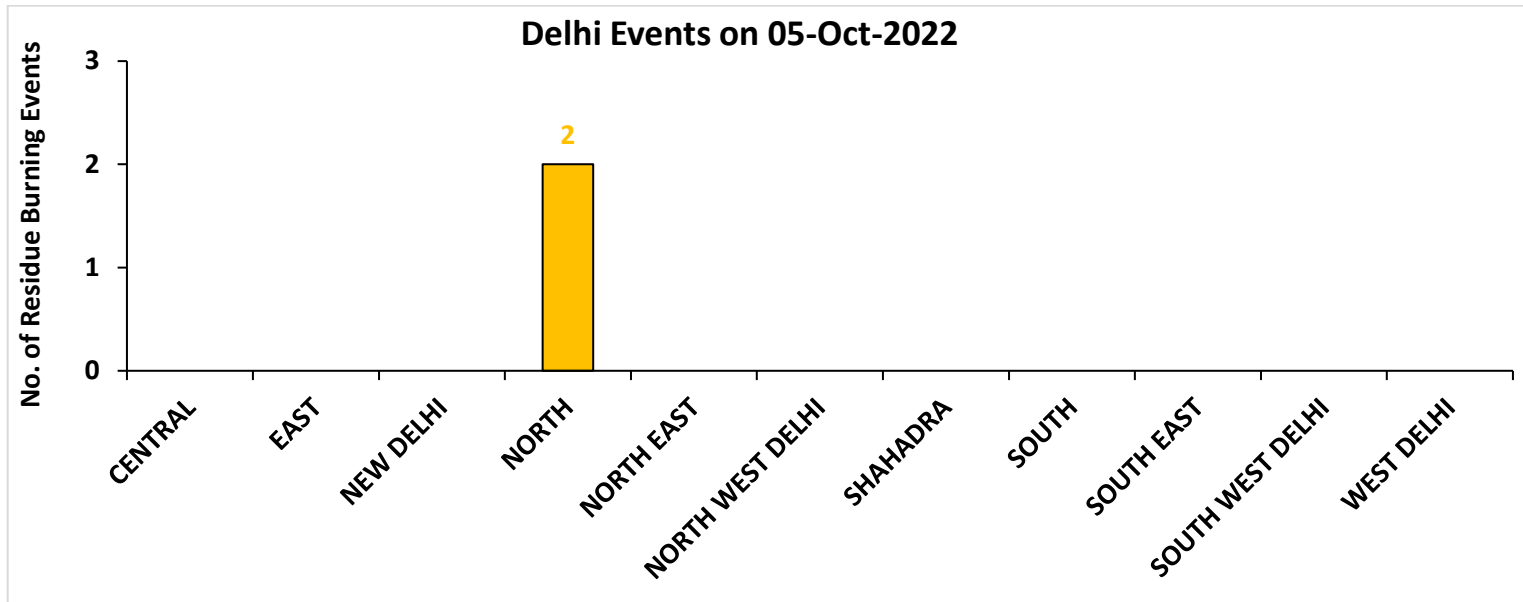
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



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



District-wise cumulative number of residues burning events in Delhi (15Sep- 05Oct -2022)



**District-wise cumulative number of residues burning events detected in 2020 ,2021 and 2022**  
**(Period: 15 September-05 October)**

**(a) Punjab**

District	15 Sep-05 Oct 2022		
	2020	2021	2022
Amritsar	1088	169	390
Barnala	3	0	1
Bathinda	0	0	0
Faridkot	4	9	2
Fatehgarh Sahib	17	2	3
Fazilka	0	1	0
Firozpur	30	5	9
Gurdaspur	70	5	7
Hoshiarpur	3	0	0
Jalandhar	14	6	10
Kapurthala	24	3	13
Ludhiana	35	21	3
Mansa	2	0	1
Moga	9	0	0
Muktsar	1	1	1
Pathankot	0	0	0
Patiala	73	11	13
Rupnagar	1	1	0
Sangrur	25	4	6
SAS NAGAR (Mohali)	8	1	4
SBS Nagar	2	1	2
Tarn Taran	355	38	80
<b>Total</b>	<b>1764</b>	<b>278</b>	<b>545</b>

**(b) Haryana**

District	15 Sep-05 Oct 2022		
	2020	2021	2022
AMBALA	24	1	5
BHIWANI	0	0	0
CHARKHI DADRI	0	0	0
FARIDABAD	0	0	0
FATEHABAD	15	1	1
GURGAON	0	0	0
HISAR	3	0	0
JHAJJAR	0	0	0
JIND	2	0	4
KAITHAL	27	2	3
KARNAL	50	5	14
KURUKSHETRA	34	13	18
MAHENDRAGARH	0	0	0
MEWAT	0	0	0
PALWAL	1	0	0
PANCHKULA	0	0	0
PANIPAT	6	0	1
REWARI	0	0	0
ROHTAK	0	0	0
SIRSA	1	0	0
SONIPAT	4	1	1
YAMUNANAGAR	10	1	1
<b>Total</b>	<b>177</b>	<b>24</b>	<b>48</b>

(c) Uttar Pradesh

District	15 Sep-05 Oct 2022										
	2020	2021	2022	GAUTAMBUDHNAGAR	1	0	0	MUZAFARNAGAR	2	0	0
AGRA	0	0	0	GAZIPUR	0	0	0	PILHIBHIT	3	1	2
ALIGARH	4	0	1	GHAZIABAD	1	0	1	PRATAPGARH	0	0	0
ALLAHABAD	0	0	0	GONDA	0	0	0	RAIBEARELI	1	0	0
AMBEDKARNAGAR	0	0	0	GORAKHPUR	0	0	0	RAMPUR	2	4	0
AMETHI	0	0	0	HAMIRPUR	0	0	0	SAMBHAL	5	0	4
AMROHA	0	0	0	HAPUR	2	0	0	SANTKABIRNAGAR	0	0	0
AURAIYA	11	0	4	HARDOI	0	0	0	SANTRAVIDASNAGAR	0	0	0
AZAMGARH	0	0	0	HATHRAS	0	0	0	SHAHJAHANPUR	6	37	53
BADAUN	0	0	0	JALAUN	0	0	0	SHAMLI	7	2	2
BAGHPAT	1	0	0	JAUNPUR	0	0	0	SHARANPUR	4	0	0
BAHRAICH	0	0	0	JHANSI	4	0	0	SHRAWASTI	0	0	0
BALLIA	0	0	0	KANNAUJ	1	0	0	SIDDHARTHANAGAR	0	0	0
BALRAMPUR	0	0	0	KANPUR	0	1	0	SITAPUR	3	0	0
BANDA	0	0	0	KANPUR DEHAT	1	0	0	SONBHADRA	0	0	0
BARABANKI	1	0	0	KASGANJ	1	0	0	SULTANPUR	0	0	0
BAREILLY	3	0	0	KAUSHAMBI	1	0	0	UNNAO	2	0	0
BASTI	0	0	0	KHERI	4	3	8	VARANASI	0	0	0
BIJNOR	1	0	1	KUSHINAGAR	0	0	0	<b>Total</b>	<b>89</b>	<b>51</b>	<b>80</b>
BULANDSAHAR	1	0	2	LALITPUR	0	1	2				
CHANDAULI	0	0	0	LUCKNOW	0	0	0				
CHITRAKOOT	0	0	0	MAHARAJGANJ	0	0	0				
DEORIA	0	0	0	MAHOBA	0	0	0				
ETAH	3	0	0	MAINPURI	0	1	0				
ETAWAH	0	0	0	MATHURA	2	1	0				
FAIZABAD	0	0	0	MAU	0	0	0				
FARRUKHABAD	0	0	0	MEERUT	8	0	0				
FATEHPUR	1	0	0	MIRZAPUR	0	0	0				
FIROZABAD	1	0	0	MORADABAD	1	0	0				

**(d) Delhi**

District	15 Sep-05 Oct 2022		
	2020	2021	2022
CENTRAL	0	0	0
EAST	0	0	0
NEW DELHI	0	0	0
NORTH	1	0	2
NORTH EAST	0	0	0
NORTH WEST DELHI	0	0	0
SHAHADRA	0	0	0
SOUTH	1	0	0
SOUTH EAST	0	0	0
SOUTH WEST DELHI	0	0	0
WEST DELHI	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>

**(e) Rajasthan**

District	15 Sep-05 Oct 2022		
	2020	2021	2022
AJMER	0	0	0
ALWAR	1	0	0
BANSWARA	0	0	0
BARAN	30	0	3
BARMER	2	0	0
BHARATPUR	0	0	0
BHILWARA	1	0	0
BIKANER	0	0	0
BUNDI	1	0	3
CHITTAURGARH	0	1	0
CHURU	0	0	0
DAUSA	0	0	0
DHOLPUR	0	0	0
DUNGARPUR	0	0	0
GANGANAGAR	1	0	0
HANUMANGARH	9	0	1
JAIPUR	0	0	0
JAISELMER	1	0	0
JALOR	0	0	0
JHALAWAR	0	0	0
JHUNJHUNUN	1	0	0
JODHPUR	1	0	0
KARAULI	1	0	0
KOTA	7	0	1
NAGAUR	0	0	0
PALI	1	0	0
PRATAPGARH	0	0	0
RAJSMAND	0	0	0
SIKAR	0	0	0
SIROHI	0	0	0
SWAIMADHOPUR	0	0	0
TONK	1	0	0
UDAIPUR	0	0	0
<b>Total</b>	<b>58</b>	<b>1</b>	<b>8</b>

(f) Madhya Pradesh

District	15 Sep-05 Oct 2022						
	2020	2021	2022	PANNA	0	0	0
ALIRAJPUR	0	0	0	RAISEN	0	0	0
ANUPPUR	0	0	0	RAJGARH	1	0	2
ASHOKNAGAR	5	0	0	RATLAM	0	0	0
BALAGHAT	0	0	0	REWA	0	0	0
BARWANI	0	0	0	SAGAR	2	2	1
BETUL	0	0	0	SATNA	2	0	0
BHIND	0	0	0	SEHORE	1	0	1
BHOPAL	1	0	0	SEONI	0	0	0
BURHANPUR	0	0	0	SHAHDOL	0	0	0
CHHATARPUR	1	0	0	SHAJAPUR	3	0	0
CHHINDWARA	0	0	0	SHEOPUR	0	0	0
DAMOH	5	0	0	SHIVPURI	0	0	0
DATIA	1	0	0	SIDHI	0	0	0
DEWAS	0	0	0	SINGRAULI	0	0	0
DHAR	6	0	0	TIKAMGARH	0	0	0
DINDORI	0	0	0	UJJAIN	3	0	0
EAST NIMAR	0	0	0	UMARIA	0	0	0
GUNA	5	1	1	VIDESHA	11	1	1
GWALIOR	4	0	1	WEST NIMAR	0	0	0
HARDA	6	5	0	<b>Total</b>	<b>60</b>	<b>9</b>	<b>7</b>
HOSHANGABAD	0	0	0				
INDORE	1	0	0				
JABALPUR	1	0	0				
JHABUA	0	0	0				
KATNI	0	0	0				
MANDLA	0	0	0				
MANDSAUR	0	0	0				
MORENA	1	0	0				
NARSHIMAPURA	0	0	0				
NIMACH	0	0	0				

**State-wise and date-wise number of paddy residue burning events detected in 2020, 2021 and 2022**  
**(Period: 15 September - 05 October 2022)**

**Number of Paddy Residue Burning Events Detected**

	Punjab			Haryana			Uttar Pradesh			Delhi			Rajasthan			Madhya Pradesh		
	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
15-Sep	5	0	14	2	0	0	1	0	0	0	0	0	1	0	0	2	0	0
16-Sep	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Sep	5	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18-Sep	17	9	7	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
19-Sep	30	5	18	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0
20-Sep	67	8	10	6	0	0	2	0	0	0	0	0	0	0	0	0	0	0
21-Sep	54	0	56	2	0	0	1	0	0	0	0	0	1	0	1	2	0	0
22-Sep	34	0	30	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
23-Sep	49	0	3	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
24-Sep	78	5	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
25-Sep	184	11	0	11	0	0	5	0	0	0	0	0	1	0	0	0	0	0
26-Sep	190	19	0	5	0	0	8	0	0	0	0	0	1	0	0	2	0	0
27-Sep	78	37	0	8	0	0	4	1	0	0	0	0	0	0	0	1	0	0
28-Sep	55	28	0	6	1	0	1	6	0	0	0	0	0	0	0	1	1	0
29-Sep	63	64	0	9	4	0	6	10	0	0	0	0	3	0	0	0	4	0
30-Sep	116	27	8	22	2	0	13	13	10	1	0	0	1	0	0	5	0	0
01-Oct	165	13	45	15	4	1	7	13	3	0	0	0	4	1	1	13	0	1
02-Oct	141	0	83	30	2	7	12	0	36	1	0	0	7	0	3	12	0	1
03-Oct	110	9	75	8	6	8	4	3	29	0	0	0	9	0	2	5	1	5
04-Oct	162	23	65	29	2	7	8	0	2	0	0	0	15	0	0	4	2	0
05-Oct	161	18	130	17	3	24	14	2	0	0	0	2	14	0	1	13	1	0
<b>Total</b>	<b>1764</b>	<b>278</b>	<b>545</b>	<b>177</b>	<b>24</b>	<b>48</b>	<b>89</b>	<b>51</b>	<b>80</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>58</b>	<b>1</b>	<b>8</b>	<b>60</b>	<b>9</b>	<b>7</b>

### Details of residue burning events in Punjab on 05-Oct-2022

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMRITSAR	AJNALA	AQUA	31.85500	74.65500	13:36:49	D	7.30
2	AMRITSAR	JANDIALA GURU	S-NPP	31.55320	75.13120	14:07:32	D	4.30
3	AMRITSAR	JANDIALA GURU	S-NPP	31.55850	75.08950	14:07:32	D	8.50
4	AMRITSAR	JANDIALA GURU	S-NPP	31.56000	75.08940	14:07:32	D	10.10
5	AMRITSAR	JANDIALA GURU	S-NPP	31.58980	75.09990	14:07:32	D	13.50
6	AMRITSAR	JANDIALA GURU	S-NPP	31.60660	74.98930	14:07:32	D	9.90
7	AMRITSAR	JANDIALA GURU	S-NPP	31.62430	75.02130	14:07:32	D	8.50
8	AMRITSAR	JANDIALA GURU	S-NPP	31.67910	75.00880	14:07:32	D	2.90
9	AMRITSAR	JANDIALA GURU	AQUA	31.52600	74.96400	13:36:49	D	11.20
10	AMRITSAR	JANDIALA GURU	AQUA	31.53500	75.02200	13:36:49	D	9.60
11	AMRITSAR	JANDIALA GURU	AQUA	31.53700	75.03400	13:36:49	D	8.20
12	AMRITSAR	JANDIALA GURU	AQUA	31.55400	75.01800	13:36:49	D	7.20
13	AMRITSAR	JANDIALA GURU	AQUA	31.58700	75.06400	13:36:49	D	11.90
14	AMRITSAR	JANDIALA GURU	AQUA	31.58900	75.07600	13:36:49	D	11.20
15	AMRITSAR	JANDIALA GURU	AQUA	31.59600	75.00200	13:36:49	D	17.00
16	AMRITSAR	JANDIALA GURU	AQUA	31.59800	75.01400	13:36:49	D	13.60
17	AMRITSAR	JANDIALA GURU	AQUA	31.61800	75.02100	13:36:49	D	13.10
18	AMRITSAR	JANDIALA GURU	AQUA	31.64300	74.99100	13:36:49	D	7.00
19	AMRITSAR	MAJITHA	S-NPP	31.68030	75.08370	14:07:32	D	5.50
20	AMRITSAR	MAJITHA	S-NPP	31.68420	75.08220	14:07:32	D	7.70
21	AMRITSAR	MAJITHA	S-NPP	31.73510	75.01230	12:27:15	D	3.90
22	AMRITSAR	MAJITHA	S-NPP	31.79260	75.03670	14:07:32	D	4.60
23	AMRITSAR	MAJITHA	AQUA	31.68200	75.08500	13:36:49	D	6.90
24	AMRITSAR	MAJITHA	AQUA	31.76100	74.94000	13:36:49	D	8.40
25	AMRITSAR	RAYYA	S-NPP	31.52120	75.11400	14:07:32	D	26.40
26	AMRITSAR	RAYYA	S-NPP	31.53400	75.21090	14:07:32	D	6.10
27	AMRITSAR	RAYYA	S-NPP	31.53950	75.15150	14:07:32	D	3.90
28	AMRITSAR	RAYYA	S-NPP	31.54450	75.15100	14:07:32	D	3.90
29	AMRITSAR	RAYYA	S-NPP	31.55360	75.13630	14:07:32	D	4.50
30	AMRITSAR	RAYYA	S-NPP	31.56820	75.19000	14:07:32	D	1.50

31	AMRITSAR	RAYYA	S-NPP	31.59330	75.30970	14:07:32	D	2.90
32	AMRITSAR	RAYYA	S-NPP	31.61840	75.20570	14:07:32	D	4.00
33	AMRITSAR	RAYYA	S-NPP	31.61890	75.27900	14:07:32	D	1.90
34	AMRITSAR	RAYYA	S-NPP	31.61950	75.28600	14:07:32	D	6.00
35	AMRITSAR	RAYYA	S-NPP	31.63420	75.21100	14:07:32	D	3.20
36	AMRITSAR	RAYYA	S-NPP	31.64070	75.22780	14:07:32	D	9.20
37	AMRITSAR	RAYYA	S-NPP	31.65120	75.29680	14:07:32	D	2.40
38	AMRITSAR	RAYYA	S-NPP	31.65170	75.23710	14:07:32	D	1.50
39	AMRITSAR	RAYYA	AQUA	31.53500	75.20200	13:36:49	D	16.50
40	AMRITSAR	RAYYA	AQUA	31.54800	75.22200	13:36:49	D	11.70
41	AMRITSAR	RAYYA	AQUA	31.57400	75.20500	13:36:49	D	6.80
42	AMRITSAR	RAYYA	AQUA	31.60800	75.25000	13:36:49	D	7.70
43	AMRITSAR	RAYYA	AQUA	31.64100	75.21900	13:36:49	D	8.90
44	AMRITSAR	RAYYA	AQUA	31.64800	75.26400	13:36:49	D	6.90
45	AMRITSAR	RAYYA	AQUA	31.66100	75.28500	13:36:49	D	6.60
46	AMRITSAR	TARSIKKA	S-NPP	31.56650	75.16940	14:07:32	D	3.20
47	AMRITSAR	TARSIKKA	S-NPP	31.57620	75.12190	14:07:32	D	7.00
48	AMRITSAR	TARSIKKA	S-NPP	31.57790	75.12180	14:07:32	D	9.50
49	AMRITSAR	TARSIKKA	S-NPP	31.58630	75.10040	14:07:32	D	3.90
50	AMRITSAR	TARSIKKA	S-NPP	31.61120	75.17860	14:07:32	D	2.00
51	AMRITSAR	TARSIKKA	S-NPP	31.61790	75.13300	14:07:32	D	2.80
52	AMRITSAR	TARSIKKA	S-NPP	31.61870	75.14330	14:07:32	D	3.10
53	AMRITSAR	TARSIKKA	S-NPP	31.61900	75.14670	14:07:32	D	3.10
54	AMRITSAR	TARSIKKA	S-NPP	31.62240	75.19130	14:07:32	D	1.50
55	AMRITSAR	TARSIKKA	S-NPP	31.62310	75.06910	14:07:32	D	5.70
56	AMRITSAR	TARSIKKA	S-NPP	31.63530	75.09520	14:07:32	D	12.20
57	AMRITSAR	TARSIKKA	S-NPP	31.64010	75.15490	14:07:32	D	3.90
58	AMRITSAR	TARSIKKA	S-NPP	31.64320	75.13040	14:07:32	D	1.70
59	AMRITSAR	TARSIKKA	S-NPP	31.64510	75.15440	14:07:32	D	1.80
60	AMRITSAR	TARSIKKA	S-NPP	31.66060	75.09260	14:07:32	D	4.90
61	AMRITSAR	TARSIKKA	S-NPP	31.67860	75.06330	14:07:32	D	9.40
62	AMRITSAR	TARSIKKA	S-NPP	31.68420	75.14940	14:07:32	D	1.40
63	AMRITSAR	TARSIKKA	S-NPP	31.68570	75.15020	14:07:32	D	1.60



64	AMRITSAR	TARSIKKA	S-NPP	31.68580	75.10260	14:07:32	D	4.10
65	AMRITSAR	TARSIKKA	S-NPP	31.70290	75.12670	14:07:32	D	2.50
66	AMRITSAR	TARSIKKA	AQUA	31.58200	75.19100	13:36:49	D	8.10
67	AMRITSAR	TARSIKKA	AQUA	31.61900	75.14100	13:36:49	D	6.80
68	AMRITSAR	TARSIKKA	AQUA	31.65600	75.13200	13:36:49	D	13.00
69	AMRITSAR	VERKA	S-NPP	31.66490	74.96180	14:07:32	D	4.40
70	AMRITSAR	VERKA	S-NPP	31.66520	74.96300	14:07:32	D	4.60
71	BARNALA	BARNALA	S-NPP	30.34350	75.55230	14:07:32	D	1.70
72	FATEHGARH SAHIB	SIRHIND	AQUA	30.55700	76.31600	13:36:49	D	4.60
73	FATEHGARH SAHIB	SIRHIND	AQUA	30.59300	76.31400	13:36:49	D	8.00
74	FIROZPUR	FIROZPUR	S-NPP	30.95640	74.54970	14:07:32	D	5.60
75	FIROZPUR	ZIRA	S-NPP	31.03590	74.89740	14:07:32	D	8.10
76	FIROZPUR	ZIRA	S-NPP	31.03680	74.89770	14:07:32	D	8.90
77	GURDASPUR	DERA BABA NANAK	S-NPP	31.96690	75.01600	14:07:32	D	4.90
78	JALANDHAR	LOHIAN	S-NPP	31.11520	75.18290	14:07:32	D	3.10
79	JALANDHAR	MEHATPUR	S-NPP	30.99310	75.49840	14:07:32	D	2.20
80	JALANDHAR	MEHATPUR	S-NPP	30.99340	75.50200	14:07:32	D	2.20
81	KAPURTHALA	KAPURTHALA	AQUA	31.38800	75.31800	13:36:49	D	7.70
82	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.23560	75.18200	14:07:32	D	5.00
83	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.26260	75.13830	14:07:32	D	10.80
84	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.29710	75.14030	14:07:32	D	10.80
85	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.30880	75.15960	14:07:32	D	15.40
86	KAPURTHALA	SULTANPUR LODHI	AQUA	31.23100	75.15700	13:36:49	D	9.90
87	KAPURTHALA	SULTANPUR LODHI	AQUA	31.32300	75.15500	13:36:49	D	9.50
88	LUDHIANA	MACHHIWARA	AQUA	30.91800	76.20900	13:36:49	D	10.30
89	LUDHIANA	SAMRALA	AQUA	30.82100	76.23100	13:36:49	D	5.90
90	MANSA	JHUNIR	AQUA	29.84700	75.39500	13:36:49	D	12.90
91	PATIALA	BHUNARHERI	S-NPP	30.20230	76.43790	14:07:32	D	3.50
92	PATIALA	BHUNARHERI	S-NPP	30.20400	76.43860	14:07:32	D	3.00
93	PATIALA	NABHA	S-NPP	30.46710	76.13350	14:07:32	D	2.00
94	PATIALA	PATRAN	S-NPP	29.94330	76.09750	14:07:32	D	2.70
95	PATIALA	SANAUR	S-NPP	30.31760	76.47890	14:07:32	D	1.80
96	SANGRUR	ANDANA	S-NPP	29.85730	75.95230	14:07:32	D	2.40

97	SANGRUR	ANDANA	AQUA	29.79500	76.06300	13:36:49	D	10.00
98	SANGRUR	BHAWANIGARH	S-NPP	30.22970	76.06070	14:07:32	D	5.30
99	SANGRUR	BHAWANIGARH	AQUA	30.23600	76.03500	13:36:49	D	5.50
100	SANGRUR	MALERKOTLA-1	S-NPP	30.40590	76.03010	14:07:32	D	3.20
101	SANGRUR	MALERKOTLA-1	S-NPP	30.52600	76.01040	14:07:32	D	2.50
102	SAS NAGAR (MOHALI)	DERABASSI	S-NPP	30.58870	76.79990	14:07:32	D	8.50
103	SAS NAGAR (MOHALI)	DERABASSI	S-NPP	30.61880	76.83080	14:07:32	D	5.00
104	SBS NAGAR	NAWAN SHAHR	S-NPP	31.05660	76.21510	14:07:32	D	4.00
105	TARN TARAN	CHOHLA SAHIB	S-NPP	31.26750	75.01620	14:07:32	D	3.40
106	TARN TARAN	CHOHLA SAHIB	S-NPP	31.34070	75.07990	12:27:15	D	6.60
107	TARN TARAN	CHOHLA SAHIB	S-NPP	31.34090	75.08110	12:27:15	D	7.50
108	TARN TARAN	CHOHLA SAHIB	S-NPP	31.36050	75.04540	14:07:32	D	3.70
109	TARN TARAN	KHADUR SAHIB	S-NPP	31.38640	75.06780	14:07:32	D	7.10
110	TARN TARAN	KHADUR SAHIB	S-NPP	31.39140	75.06730	14:07:32	D	7.10
111	TARN TARAN	KHADUR SAHIB	S-NPP	31.41940	75.03740	14:07:32	D	10.20
112	TARN TARAN	KHADUR SAHIB	S-NPP	31.42360	75.15250	14:07:32	D	3.20
113	TARN TARAN	KHADUR SAHIB	S-NPP	31.43280	75.07650	14:07:32	D	2.70
114	TARN TARAN	KHADUR SAHIB	S-NPP	31.44990	75.16180	14:07:32	D	2.20
115	TARN TARAN	KHADUR SAHIB	S-NPP	31.45800	75.19900	14:07:32	D	1.20
116	TARN TARAN	KHADUR SAHIB	S-NPP	31.48340	75.21960	14:07:32	D	5.00
117	TARN TARAN	KHADUR SAHIB	S-NPP	31.48530	75.22030	14:07:32	D	4.70
118	TARN TARAN	KHADUR SAHIB	S-NPP	31.49490	75.10300	14:07:32	D	5.40
119	TARN TARAN	KHADUR SAHIB	S-NPP	31.50020	75.04120	14:07:32	D	8.70
120	TARN TARAN	KHADUR SAHIB	AQUA	31.40300	75.13000	13:36:49	D	5.50
121	TARN TARAN	KHADUR SAHIB	AQUA	31.46600	75.16300	13:36:49	D	16.20
122	TARN TARAN	KHADUR SAHIB	AQUA	31.46800	75.17500	13:36:49	D	25.60
123	TARN TARAN	KHADUR SAHIB	AQUA	31.47000	75.12700	13:36:49	D	6.40
124	TARN TARAN	KHADUR SAHIB	AQUA	31.47300	75.09000	13:36:49	D	8.00
125	TARN TARAN	KHADUR SAHIB	AQUA	31.49200	75.11600	13:36:49	D	14.30
126	TARN TARAN	KHADUR SAHIB	AQUA	31.49400	75.12800	13:36:49	D	7.60
127	TARN TARAN	KHADUR SAHIB	AQUA	31.50900	75.16000	13:36:49	D	6.40
128	TARN TARAN	NAUSHERA PANNUAN	S-NPP	31.34880	75.02650	14:07:32	D	4.80
129	TARN TARAN	TARN TARAN	S-NPP	31.46430	74.97090	14:07:32	D	3.80

130	TARN TARAN	TARN TARAN	S-NPP	31.47640	74.99640	14:07:32	D	3.90
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**Details of residue burning events in Haryana on 05-Oct-2022**

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	JIND	NARWANA	AQUA	29.54500	76.05400	13:36:49	D	8.60
2	JIND	UCHANA	S-NPP	29.43750	76.24570	14:07:32	D	5.70
3	JIND	UCHANA	S-NPP	29.49930	76.29890	14:07:32	D	2.70
4	KAITHAL	PUNDRI	S-NPP	29.68230	76.57670	14:07:32	D	2.70
5	KAITHAL	PUNDRI	S-NPP	29.68550	76.57640	14:07:32	D	2.20
6	KARNAL	ASSANDH	S-NPP	29.52030	76.87320	14:07:32	D	2.10
7	KARNAL	GHARAUNDA	S-NPP	29.51540	76.96000	14:07:32	D	2.50
8	KARNAL	GHARAUNDA	S-NPP	29.51830	76.92250	14:07:32	D	3.40
9	KARNAL	GHARAUNDA	S-NPP	29.52210	77.05520	14:07:32	D	5.80
10	KARNAL	GHARAUNDA	S-NPP	29.52300	77.05510	14:07:32	D	6.10
11	KARNAL	GHARAUNDA	AQUA	29.57400	77.02100	13:36:49	D	20.80
12	KARNAL	NILOKHERI	S-NPP	29.89810	76.96040	14:07:32	D	3.70
13	KURUKSHETRA	ISMAILABAD	S-NPP	30.15520	76.76340	14:07:32	D	3.20
14	KURUKSHETRA	ISMAILABAD	AQUA	30.10500	76.74700	13:36:49	D	6.50
15	KURUKSHETRA	LADWA	S-NPP	29.99490	76.99450	14:07:32	D	2.90
16	KURUKSHETRA	SHAHBAD	S-NPP	30.20900	76.81640	14:07:32	D	3.00
17	KURUKSHETRA	SHAHBAD	AQUA	30.18300	76.89300	13:36:49	D	6.00
18	KURUKSHETRA	THANESAR	S-NPP	29.92440	76.79260	14:07:32	D	2.90
19	KURUKSHETRA	THANESAR	S-NPP	29.97350	76.92920	14:07:32	D	1.50
20	KURUKSHETRA	THANESAR	S-NPP	30.02650	76.82430	14:07:32	D	1.80
21	KURUKSHETRA	THANESAR	S-NPP	30.04350	76.90990	14:07:32	D	2.70
22	KURUKSHETRA	THANESAR	AQUA	29.91700	76.78700	13:36:49	D	7.80
23	PANIPAT	PANIPAT	S-NPP	29.45340	76.94490	14:07:32	D	1.30
24	SONIPAT	RAI	S-NPP	28.87140	77.11260	02:56:50	N	0.40

**Details of residue burning events in Rajasthan on 05-Oct-2022**

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	BUNDI	BUNDI	S-NPP	25.28730	75.66720	14:07:32	D	3.00

**Details of residue burning events in Delhi on 05-Oct-2022**

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	NORTH	NARELA	S-NPP	28.86570	77.11070	02:56:50	N	0.40
2	NORTH	NARELA	S-NPP	28.86580	77.11140	02:56:50	N	0.60

**The study used data received from following Satellites at NRSC Ground Station**

S. No.	Satellite Name	Sensor	Resolution (meter)	Day / Night Passes
1.	Suomi NPP	VIIRS	375 / 750	Both
2.	Terra	MODIS	1000	Both
3.	Aqua	MODIS	1000	Both

**The rice mask for the Punjab and Haryana were provided by MNCFC, MoA&FW, Govt of India  
The kharif crop mask for Delhi, Uttar Pradesh, Rajasthan and Madhya Pradesh were provided by NRSC**

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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)

and on IARI CREAMS website (<http://creams.iari.res.in/cms2/index.php>)

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