



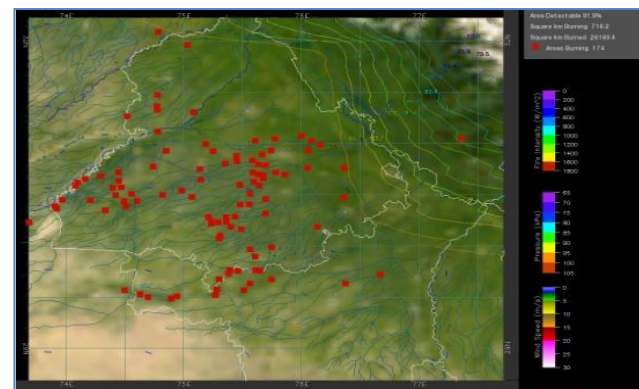
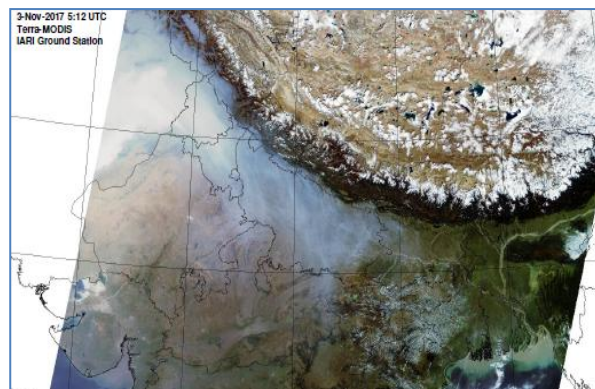
**Bulletin  
No. 06**

**Events Date:  
06-Oct-2019**

**Issued on:  
07-Oct-2019**



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



**Prepared by:**

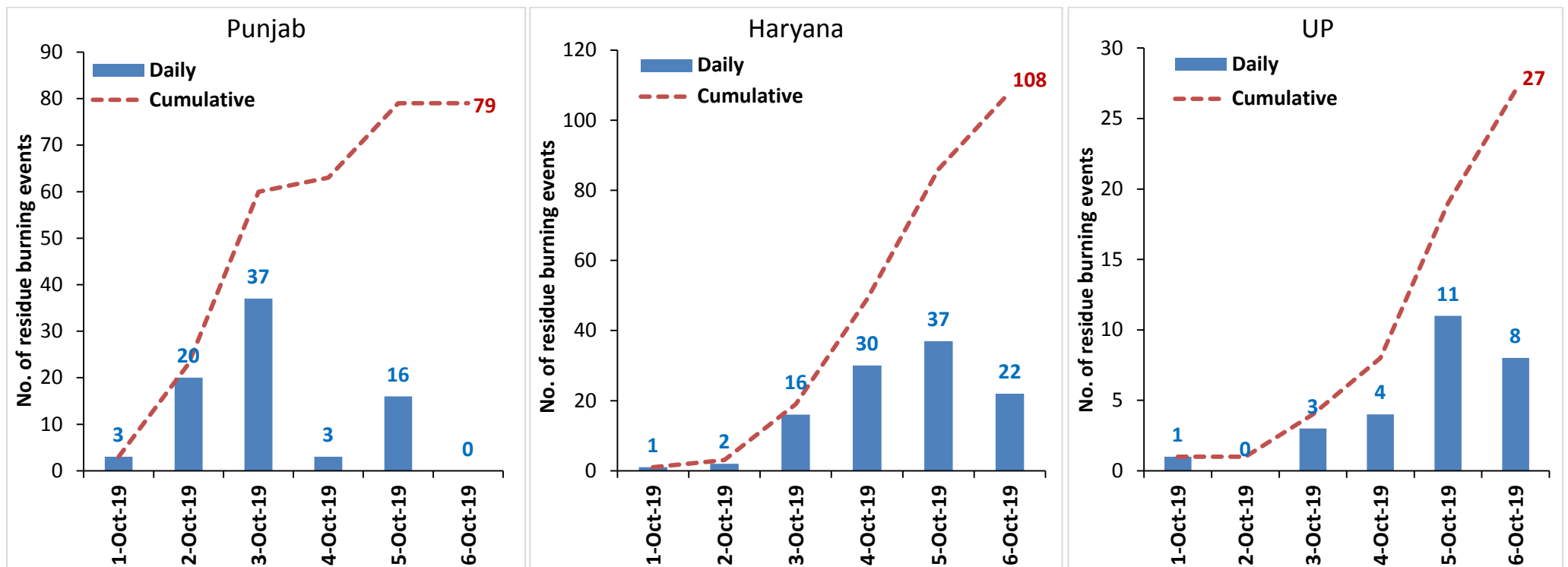
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

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

## Highlights for 06-October-2019

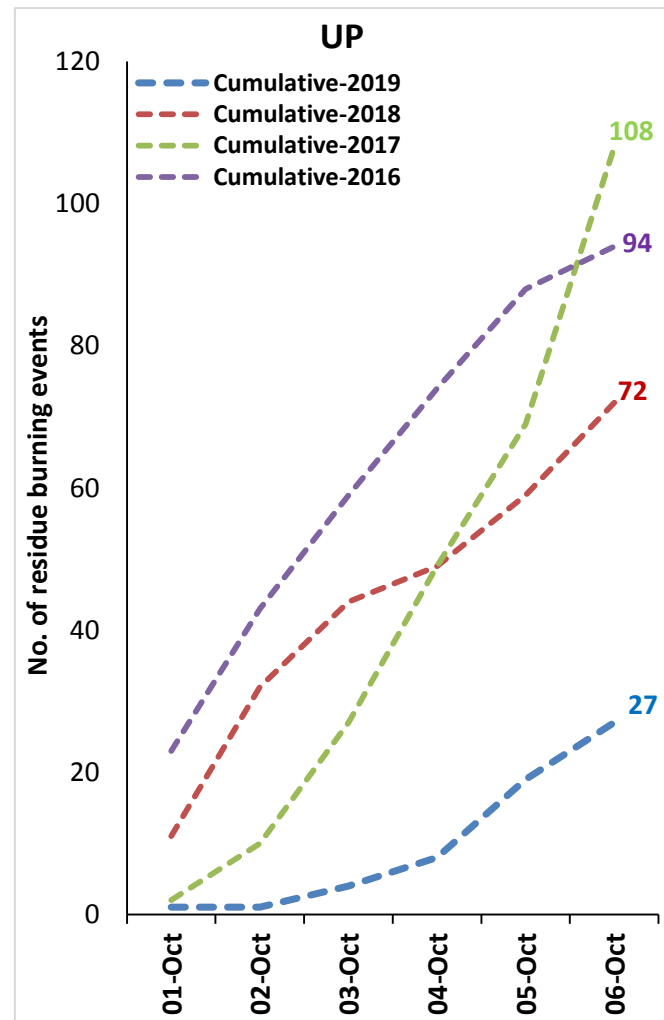
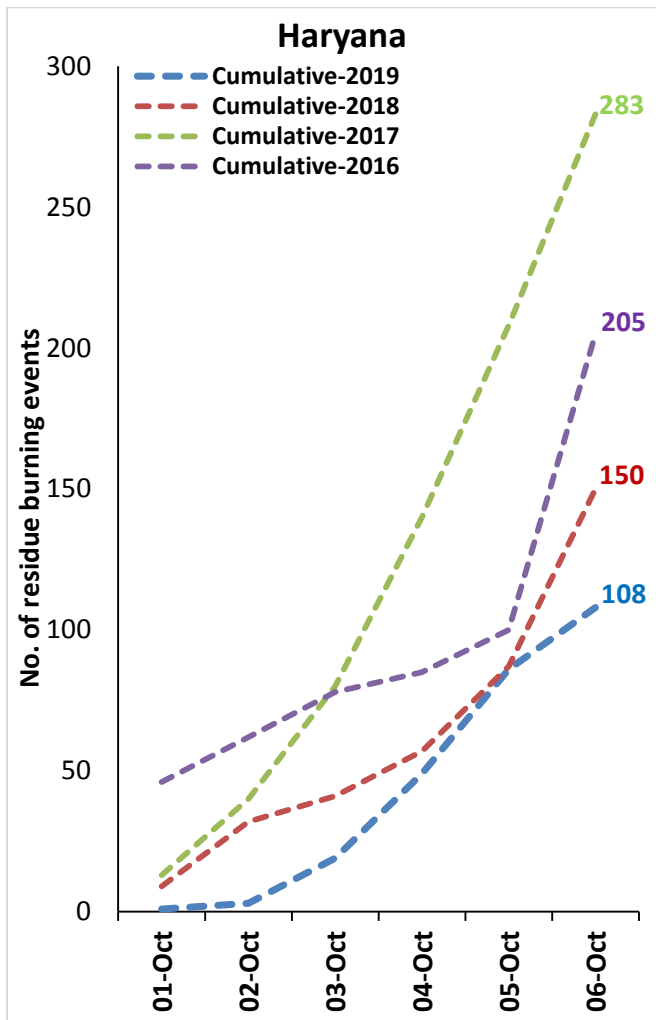
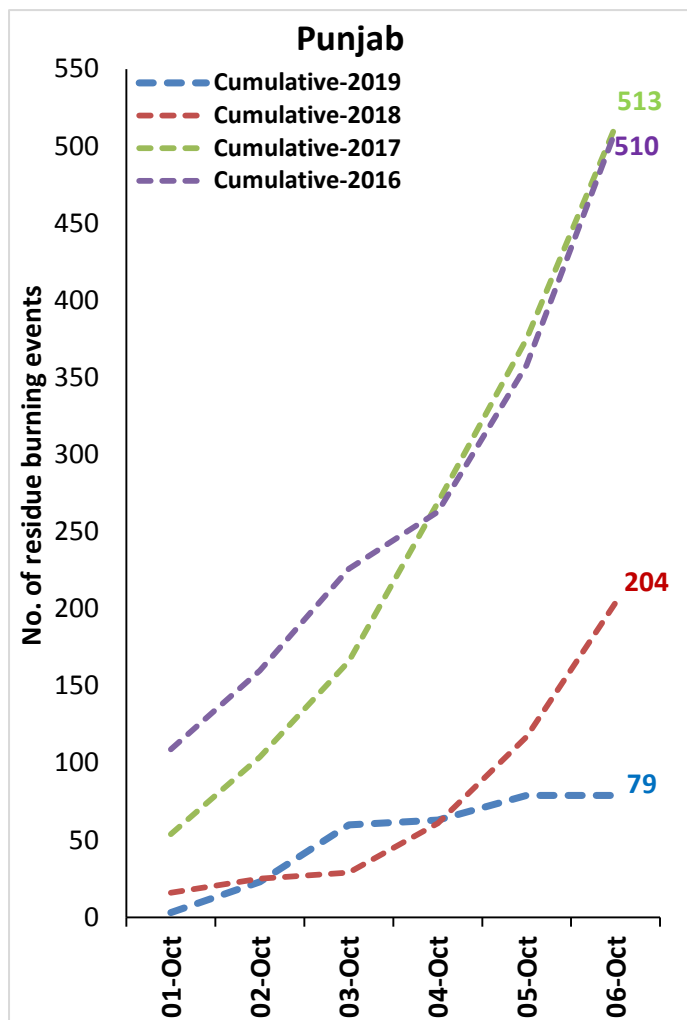
- Satellites detected 30 residue burning events in the three study States on 06-Oct-2019.
- In Punjab no fire events were recorded by satellite.
- In Haryana the burning events were scattered across Kaithal, Karnal and Kurukshtra districts.
- Overall, the residue burning/fire events are very few till date in the three study States being monitored.
- Till date the total numbers of burning event in current year 2019 are lower than in previous three years.

Temporal distribution of residue burning events for the three study States



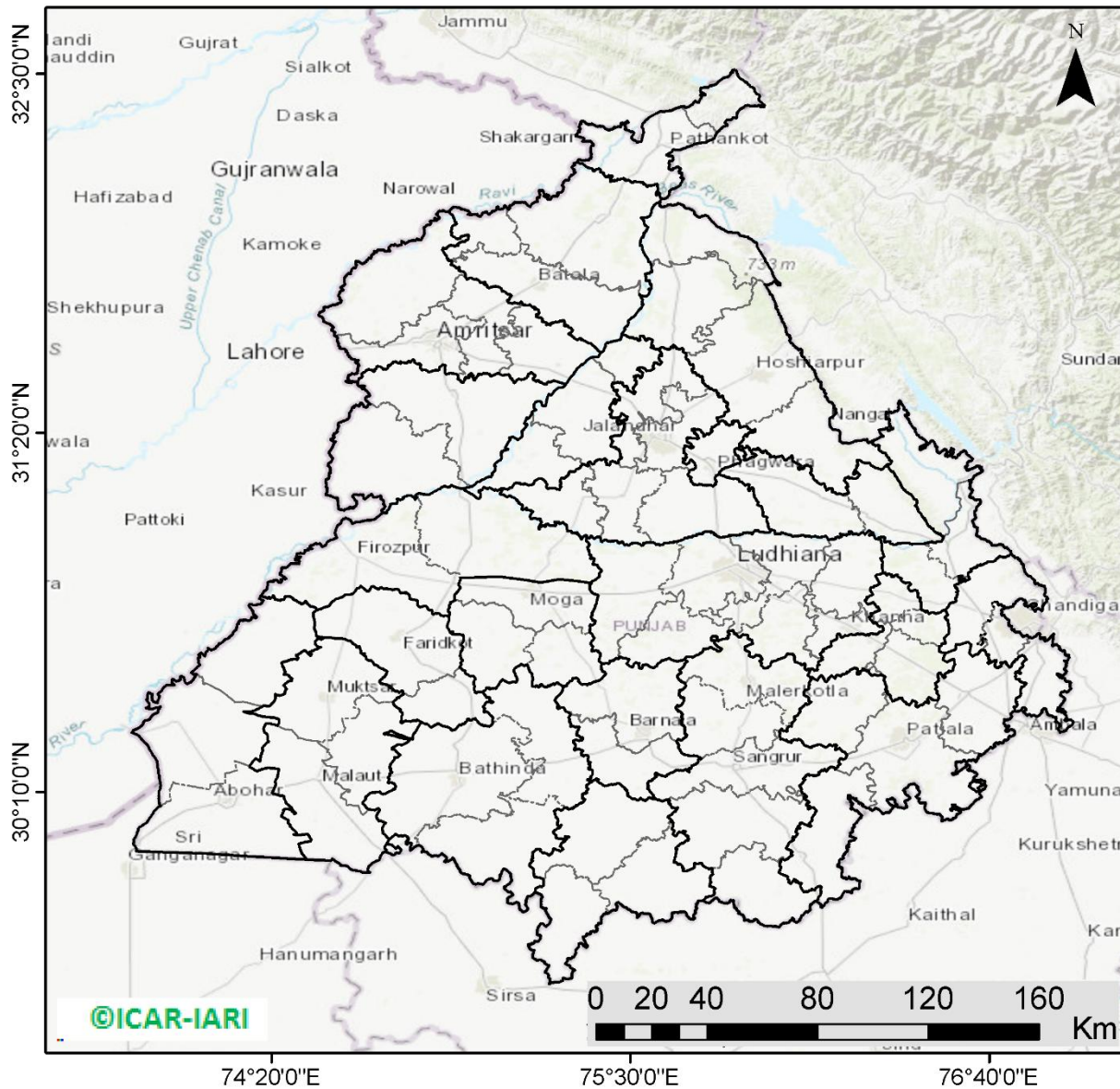
**Comparison of residue burning events in current year (2019) with previous years (2018, 2017 & 2016) for the three study States**

**(01-Oct to 06-Oct)**



(a) Punjab

RICE RESIDUE BURNING IN PUNJAB

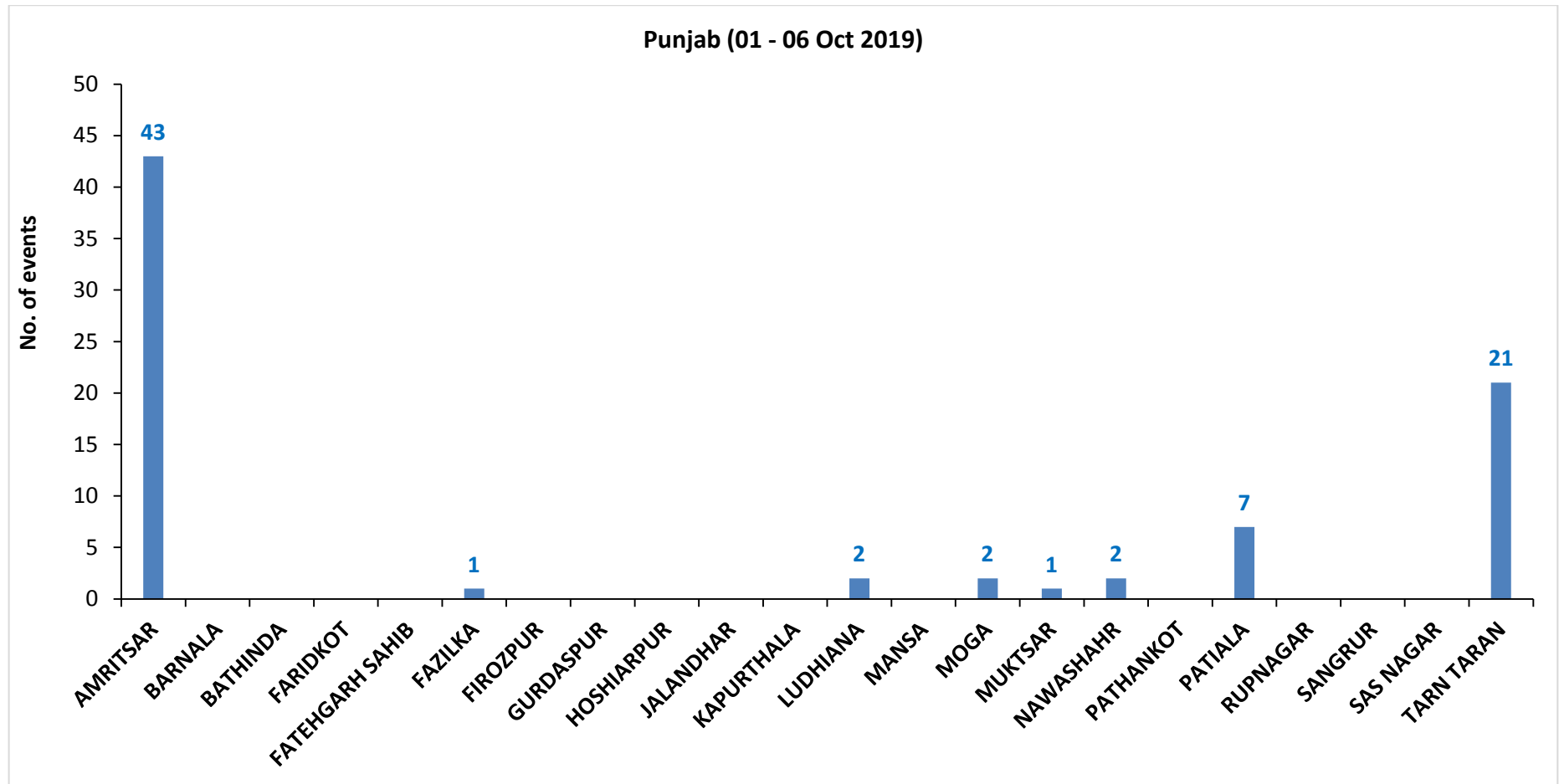


**00** burning events detected in Punjab on 06th October 2019



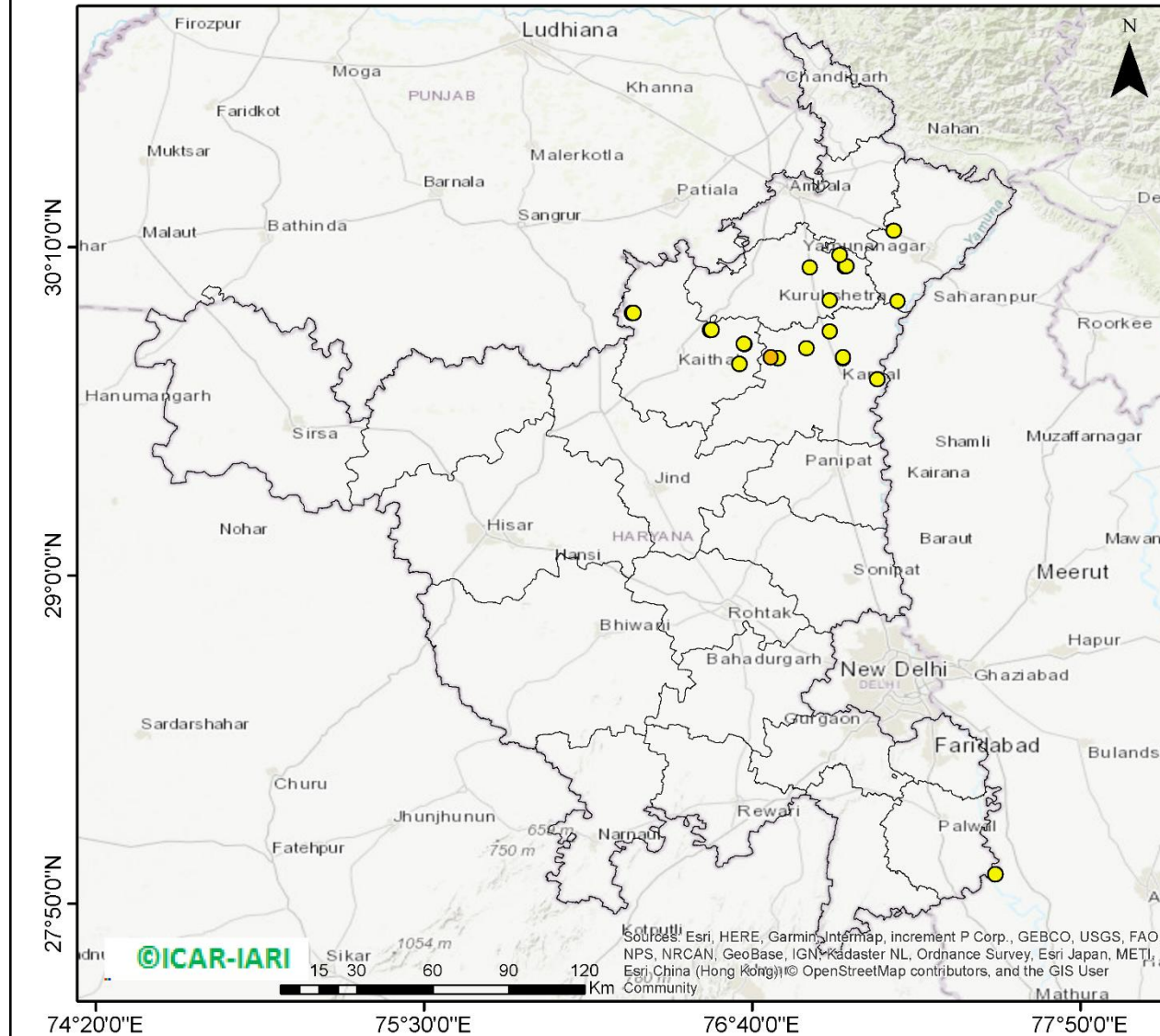
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

**District-wise cumulative number of residue burning events in Punjab (01 to 06-Oct 2019)**



## (b) Haryana

### RICE RESIDUE BURNING IN HARYANA



**22** burning events  
detected in Haryana on  
**06th October 2019**

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

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

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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), © OpenStreetMap contributors, and the GIS User Community

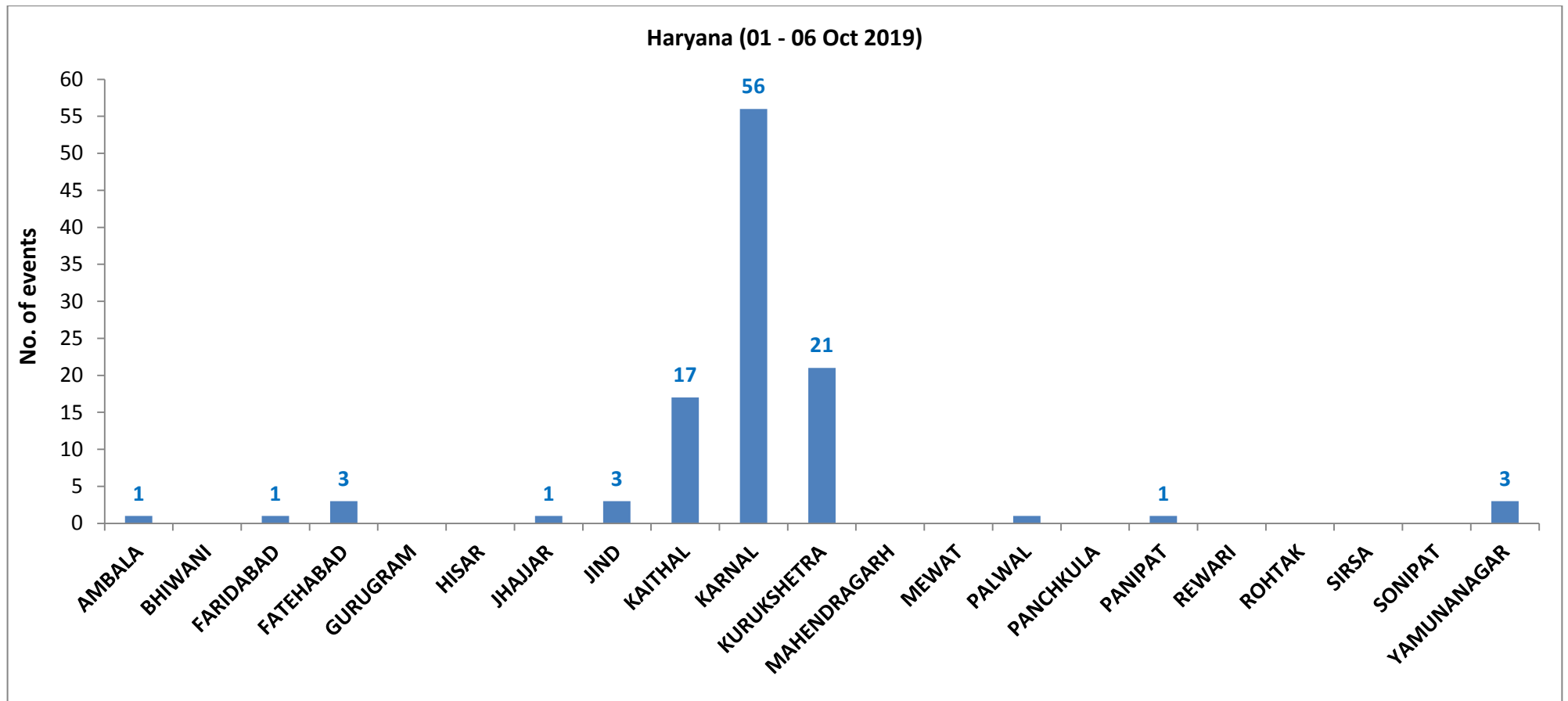


<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

**Details of residue burning events in Haryana on 06-Oct-2019**

<b>S. No.</b>	<b>District</b>	<b>Tehsil / Block</b>	<b>Satellite</b>	<b>Longitude</b>	<b>Latitude</b>	<b>Time (IST)</b>	<b>Day / Night</b>	<b>Fire Power (W/m<sup>2</sup>)</b>
1	KAITHAL	GUHLA	S-NPP	76.23907	29.93271	13:00:00	D	4.70
2	KAITHAL	GUHLA	S-NPP	76.24393	29.93373	13:00:00	D	4.70
3	KAITHAL	KAITHAL	S-NPP	76.62112	29.75286	13:00:00	D	2.60
4	KAITHAL	KAITHAL	S-NPP	76.63870	29.82139	13:00:00	D	2.20
5	KAITHAL	KAITHAL	S-NPP	76.63639	29.82344	13:00:00	D	3.40
6	KAITHAL	KAITHAL	S-NPP	76.51614	29.87229	13:00:00	D	3.90
7	KAITHAL	KAITHAL	S-NPP	76.52084	29.87327	13:00:00	D	3.90
8	KARNAL	KARNAL	S-NPP	77.11135	29.69640	13:00:00	D	3.40
9	KARNAL	KARNAL	S-NPP	76.75748	29.77234	13:00:00	D	3.50
10	KARNAL	KARNAL	S-NPP	76.98964	29.77288	13:00:00	D	5.10
11	KARNAL	KARNAL	S-NPP	76.73225	29.77603	13:00:00	D	5.80
12	KARNAL	KARNAL	S-NPP	76.98975	29.77649	13:00:00	D	2.50
13	KARNAL	NILOKHERI	S-NPP	76.85872	29.80669	13:00:00	D	1.40
14	KARNAL	NILOKHERI	S-NPP	76.94178	29.86787	13:00:00	D	2.50
15	KURUKSHETRA	THANESAR	S-NPP	76.94188	29.97749	13:00:00	D	3.50
16	KURUKSHETRA	THANESAR	S-NPP	76.87165	30.09388	13:00:00	D	2.30
17	KURUKSHETRA	THANESAR	S-NPP	76.99579	30.09742	13:00:00	D	3.50
18	KURUKSHETRA	THANESAR	S-NPP	77.00018	30.09831	13:00:00	D	3.50
19	KURUKSHETRA	THANESAR	S-NPP	76.97680	30.13767	13:00:00	D	3.50
20	PALWAL	HODAL	S-NPP	77.52985	27.93806	13:00:00	D	2.50
21	YAMUNANAGAR	JAGADHRI	S-NPP	77.18286	29.97419	13:00:00	D	3.30
22	YAMUNANAGAR	JAGADHRI	S-NPP	77.16879	30.22466	13:00:00	D	3.80

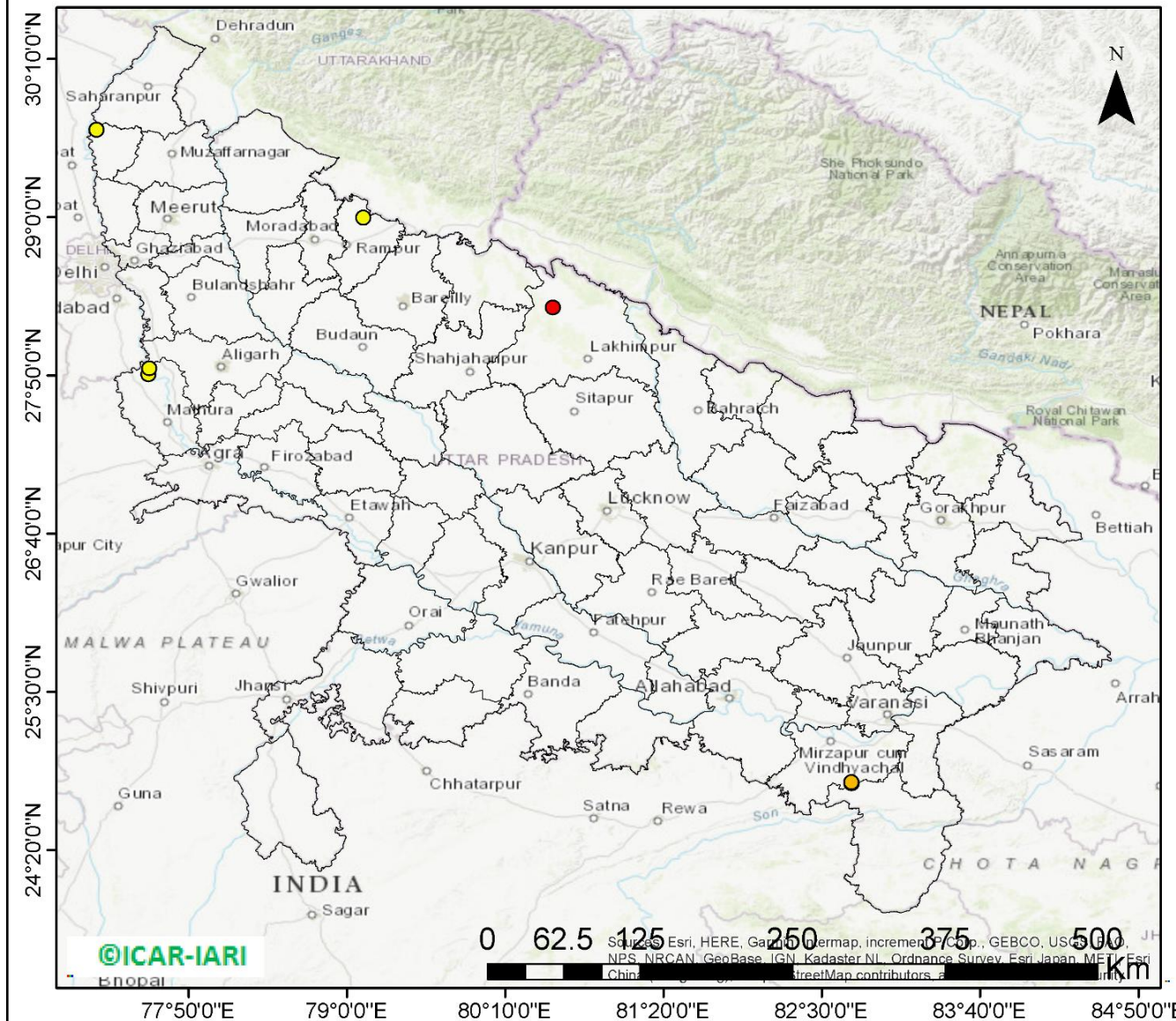
**District-wise cumulative number of residue burning events in Haryana (01 to 06-Oct 2019)**





(c) UP

RICE RESIDUE BURNING IN UTTAR PRADESH



**08** burning events detected in Uttar Pradesh on **06th October 2019**

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

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

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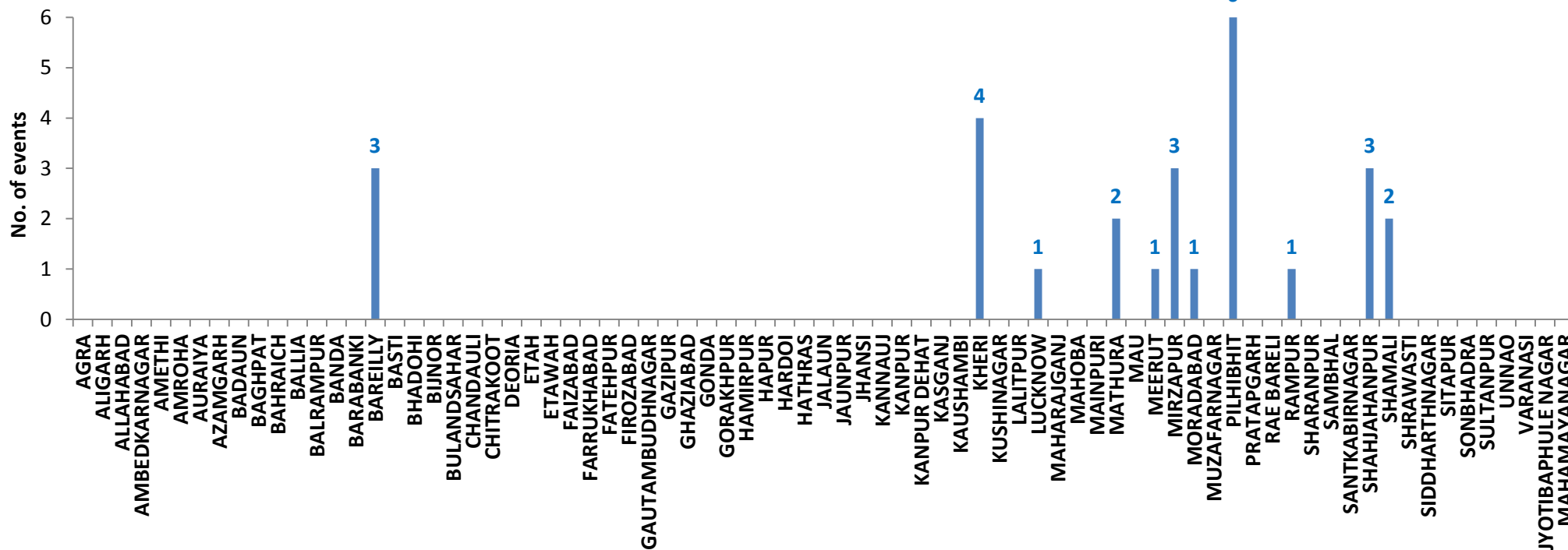
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

### Details of residue burning events in Uttar Pradesh on 06-Oct-2019

S. No.	District	Tehsil / Block	Satellite	Longitude	Latitude	Time (IST)	Day / Night	Fire Power (W/m <sup>2</sup> )
1	KHERI	PALIA KALAN	S-NPP	80.51732	28.33282	13:00:00	D	23.30
2	MATHURA	CHHATA	S-NPP	77.53576	27.83898	13:00:00	D	3.80
3	MATHURA	CHHATA	S-NPP	77.54267	27.88458	13:00:00	D	3.30
4	MIRZAPUR	MARIHAN	S-NPP	82.71682	24.82505	12:54:00	D	3.40
5	MIRZAPUR	MARIHAN	S-NPP	82.72092	24.82573	12:54:00	D	4.00
6	MIRZAPUR	MARIHAN	S-NPP	82.71957	24.83257	12:54:00	D	5.60
7	RAMPUR	SUAR	S-NPP	79.11954	28.99611	13:00:00	D	3.00
8	SHAMLI	KAIRANA	S-NPP	77.15311	29.64368	13:00:00	D	3.20

### District-wise cumulative number of residue burning events in Haryana (01 to 06-Oct 2019)

**Uttar Pradesh (01 - 06 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 06-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
<b>Total</b>	<b>79</b>	<b>204</b>	<b>513</b>	<b>510</b>	<b>108</b>	<b>150</b>	<b>283</b>	<b>205</b>	<b>27</b>	<b>72</b>	<b>108</b>	<b>94</b>	<b>214</b>	<b>426</b>	<b>904</b>	<b>809</b>

**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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