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Crop pests and diseases monitoring and forecasting in China

Mid-late September 2019

Medium infestation of pests and diseases on rice so far

Affected area reached 15.2 million ha in China

Overview

Integrated with multi-source Earth Observation data, e.g. meteorological data, field data, and remote sensing data (such as GF series and HJ series in China, MODIS and Landsat series in US, Sentinel series in EU), and self-developed models and algorithms for crop pest and disease monitoring and forecasting, AIR (RADI) constructed the 'Crop pests and diseases monitoring and forecasting system', which could regularly release thematical maps and reports on main crop pests and diseases in whole China.

Mid-late September in 2019, due to the higher temperature and higher precipitation than previous years, pest and disease are moderately occurred in rice regions of China. The total area affected by rice planthopper (*Nilaparvata lugens*), leaf roller (*Cnaphalocrocis medinalis*) and sheath blight (*Rhizoctonia solani Kühn*) has reached 15.2 million hectares.

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In mid-late September 2019, the averaged field temperature of the most planting areas in China was equal or higher 1-2°C than the same period of previous years.

Field precipitation in Northeast China, South China and Southwest China are higher than previous years. According to the rainfall process in Southwest China, eastern regions of Northeast China, South China in mid-late September, field humidity reached a suitable level for pests and diseases development.

Review of meteorological conditions

Rice planthopper

In mid-late September 2019, the occurrence of rice planthopper reached 6.1 million hectares, with the pest mainly occurred in Northeast China, Central China and East China. The specific distributions and severities are shown in Figure 1 and Table 1.

Specifically, the rice planthopper severely

occurred in Heilongjiang, north Zhejiang, central Anhui, north Hunan and central Guizhou, moderately occurred in east Jiangsu, south Anhui, south Hubei, central Hunan and north Guangxi, while slightly occurred in central Jiangxi, central Hubei, southwest Liaoning and southeast Henan.

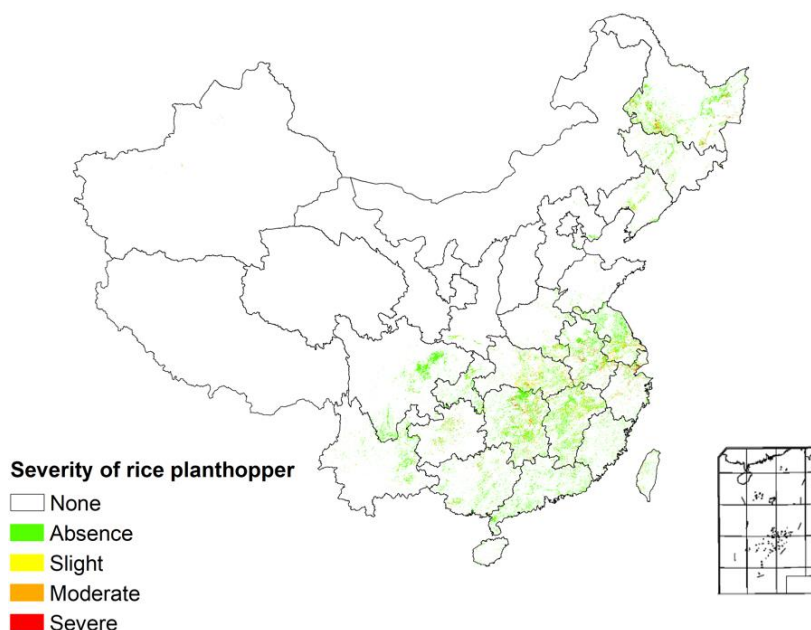


Figure 1 Spatial distribution of rice planthopper in China (mid-late September 2019)

Table 1 Statistics of rice planthopper in China (mid-late September 2019)

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	3512	557.3	290	186.7	4546	23
North China	59.3	28	8	4	99.3	40
East China	7486.7	1192	614	394	9686.7	23
South China	3723.3	207.3	124	82.7	4137.3	10
Central China	5339.3	850	414.7	262	6866	22
Northwest China	209.4	36	10	5.3	260.7	20
Southwest China	3671.4	509.3	193.3	112	4486	18
Total	24001.4	3379.9	1654	1046.7	30082	20

Rice leaf roller

In mid-late September 2019, the occurrence of rice leaf roller reached 5.2 million hectares, with the pest mainly occurred in Northeast China, Central China and East China. The specific distributions and severities are shown in Figure 2 and Table 2.

Specifically, the rice leaf roller severely in

southwest Heilongjiang, north Hunan, central Anhui and north Zhejiang, moderately occurred in northeast Heilongjiang, central Jiangsu, central Guizhou and north Guangxi, while slightly occurred in south Hunan, central Hubei, central Jiangxi and south Henan.

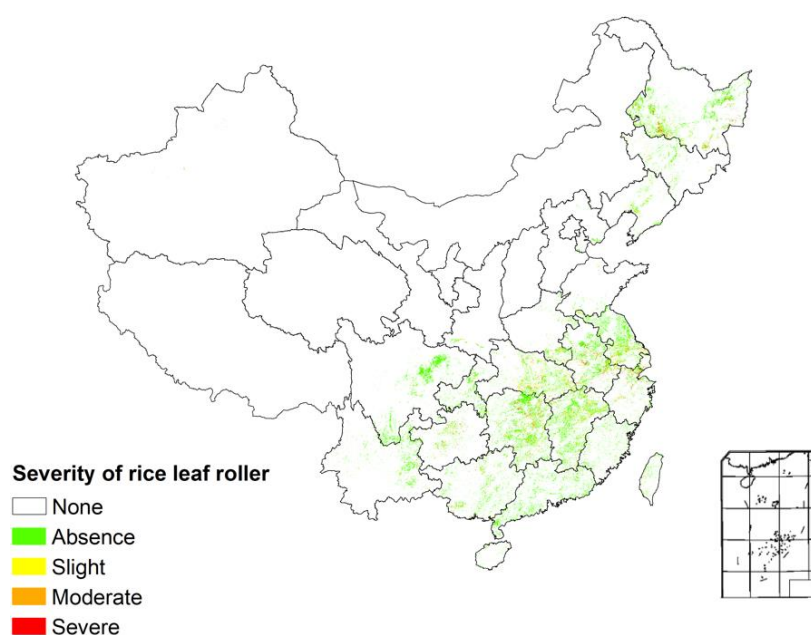


Figure 2 Spatial distribution of rice leaf roller in China (mid-late September 2019)

Table 2 Statistics of rice leaf roller in China (mid-late September 2019).

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	3668.6	472.7	246	158.7	4546	19
North China	66	23.3	6.7	3.3	99.3	34
East China	7822	1010	520.7	334	9686.7	19
South China	3788	174.6	104.7	70	4137.3	8
Central China	5575.3	718.7	350.7	221.3	6866	19
Northwest China	216.6	30.7	8.7	4.7	260.7	17
Southwest China	3794.6	432.7	164	94.7	4486	15
Total	24931.1	2862.7	1401.5	886.7	30082	17

Rice sheath blight

In mid-late September 2019, the occurrence of rice sheath blight reached 3.9 million hectares, mainly occurred in Northeast China and East China. The specific distributions and severities are shown in Figure 3 and Table 3.

Specifically, the rice sheath blight severely occurred in southwest Heilongjiang, south

Henan, northeast Zhejiang, north Hunan, central Hubei and northwest Jiangxi, moderately occurred in northeast Heilongjiang, central Anhui, central Jiangsu, central Guizhou and northwest Chongqing, while slightly occurred in west Hunan, north Fujian, central Jiangsu, south Anhui, central Hubei and central Chongqing.

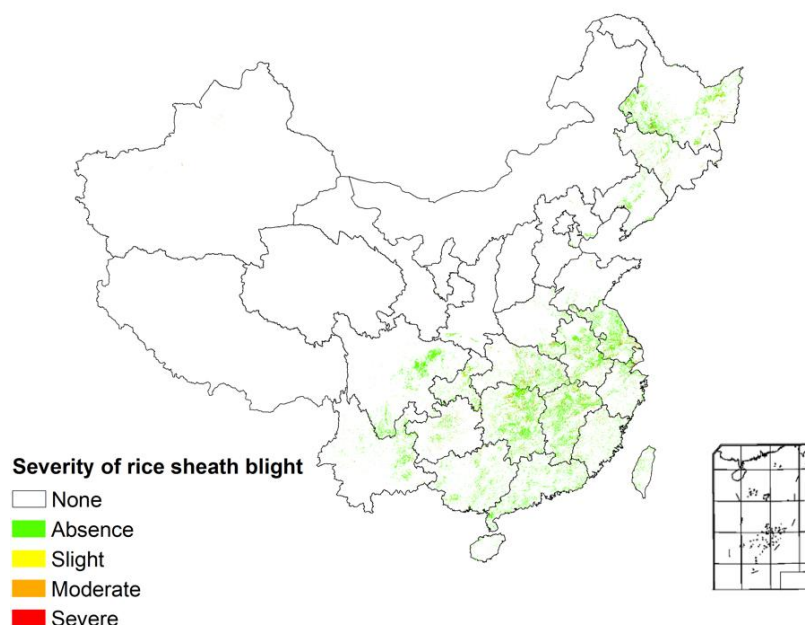


Figure 3 Spatial distribution of rice sheath blight in China (mid-late September 2019)

Table 3 Statistics of rice sheath blight in China (mid-late September 2019).

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	3890	352	187.3	116.7	4546	14
North China	74	18	5.3	2	99.3	25
East China	8272	770.7	394	250	9686.7	15
South China	3824	157.3	94.7	61.3	4137.3	8
Central China	5886.7	545.3	268	166	6866	14
Northwest China	232.7	19.3	6	2.7	260.7	11
Southwest China	3959.3	330	124	72.7	4486	12
Total	26138.7	2192.6	1079.3	671.4	30082	13

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Chinese



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The crop pests and diseases monitoring and forecasting system are available under:

<http://www.rscropmap.com/>

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The geographic borders are purely a graphical representation and are only intended to be indicative. The boundaries do not necessary reflect the official position.

Mission statements: As the science and knowledge service, the Sino-UK Crop Pest and Disease Forecasting & Management Joint Laboratory is to support independent evidence for crop monitoring.

Supported by the Strategic Priority Research Program of the Chinese Academy of Sciences (XDA19080304), National Key R&D Program of China (2017YFE0122400, 2016YFB0501501), National Natural Science Foundation of China (61661136004/ST/N006712/1, 41801338, 41871339), Science and Technology Service program of Chinese Academy of Sciences (KFJ-STZ-ZDTP-054).

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