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Crop pests and diseases monitoring and forecasting in China

Early August 2018

Medium infestation of pests and diseases on rice so far

Affected area reached 13.1 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.

Early August in 2018, 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*

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solani Kühn) has reached 13.1 million hectares.

Review of meteorological conditions

Field temperature in Southern and Northern China are higher than previous years. In early August 2018, maximum of the averaged field temperature of the plant areas in China reached 33°C, and in part of the northern area reached 40°C.

Field precipitation in Southwest China and Northern China are higher than previous years. According to the rainfall process in Southwest China, South China, and Northeast China in late July, field humidity reached a suitable level for pests and diseases development.

Rice planthopper

In early August 2018, the occurrence of rice planthopper reached 4.7 million hectares, with the pest mainly occurred in Southwest China and East China. The specific distributions and severities are shown in Figure 1 and Table 1.

Specifically, the rice planthopper severely occurred in Sichuan, Jiangsu, and Hunan, moderately occurred in Heilongjiang, Henan, Anhui, and Jiangxi, while slightly occurred in Liaoning and Guangxi.

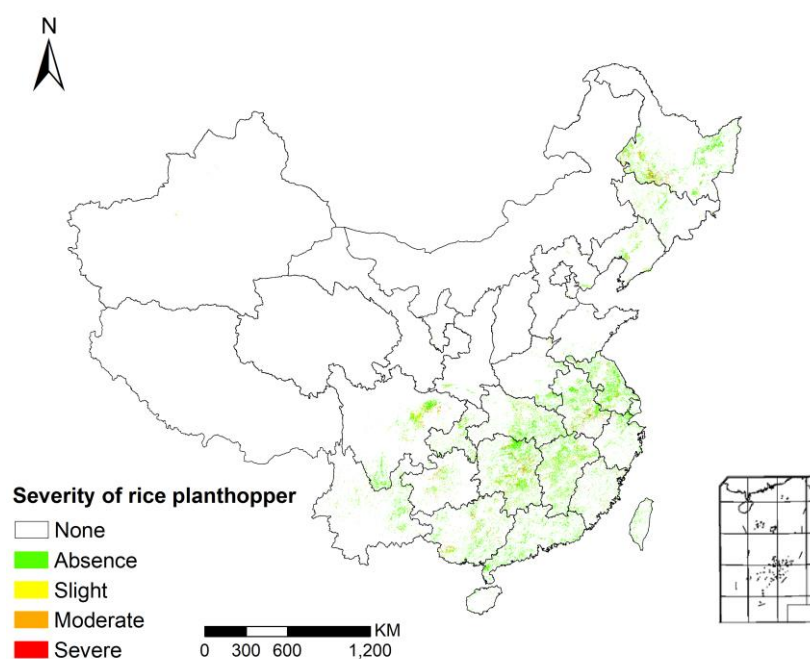


Figure 1 Spatial distribution of rice planthopper in China (early August 2018)

Table 1 Statistics of rice planthopper in China (early August 2018)

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	3683.3	460.7	244.7	157.3	4546	19
North China	70.6	20	6	2.7	99.3	29
East China	8397.4	699.3	359.3	230.7	9686.7	13
South China	3696	220.6	132.7	88	4137.3	11
Central China	5583.3	718.7	346	218	6866	19
Northwest China	241.3	14.1	4	1.3	260.7	7
Southwest China	3691.3	498	188	108.7	4486	18
Total	25363.2	2631.4	1280.7	806.7	30082	16

Rice leaf roller

In early August 2018, the occurrence of rice leaf roller reached 3.5 million hectares, with the pest mainly occurred in Southwest China and Central China. The specific distributions and severities are shown in Figure 2 and Table 2.

Specifically, the rice leaf roller severely occurred in Sichuan, Jiangsu, Anhui, Hunan, and Guizhou, moderately occurred in Heilongjiang, Henan, and Jiangxi, while slightly occurred in Guangxi and Yunnan.

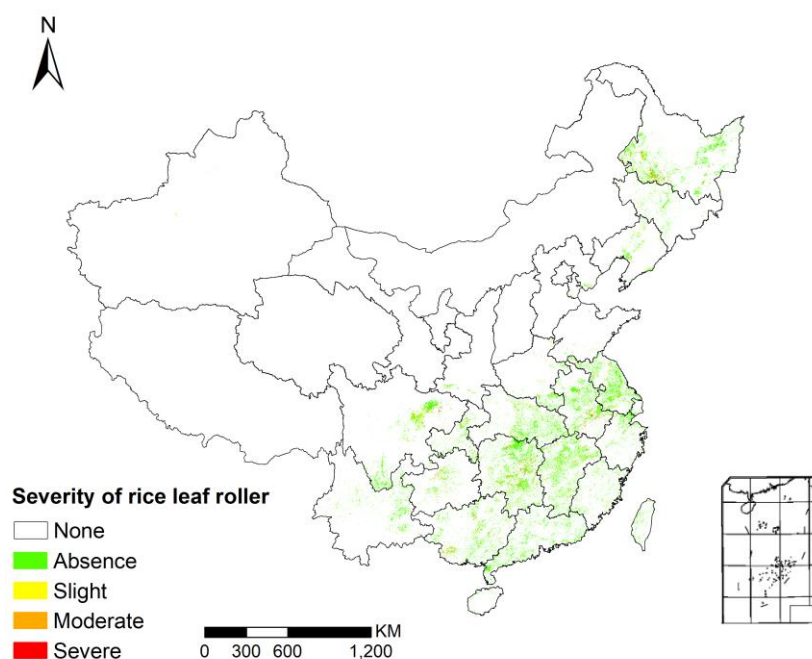


Figure 2 Spatial distribution of rice leaf roller in China (early August 2018)

Table 2 Statistics of rice leaf roller in China (early August 2018)

Region	Area / Thousand hectare					Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe			
Northeast China	3908	344.6	178.7	114.7	3908	16	
North China	78.7	14.6	4	2	78.7	26	
East China	8748.6	508	262	168	8748.6	11	
South China	3816.7	160.7	96	64	3816.7	1	
Central China	5921.3	528.7	255.3	160.7	5921.3	16	
Northwest China	246.7	10	2.7	1.3	246.7	6	
Southwest China	3904.7	364.7	137.3	79.3	3904.7	15	
Total	26624.7	1931.3	936	590	26624.7	13	

Rice sheath blight

In early August 2018, the occurrence of rice sheath blight reached 4.9 million hectares, mainly occurred in Southwest China. The specific distributions and severities are shown in Figure 3 and Table 3.

Specifically, the rice sheath blight severely occurred in Sichuan, Jiangsu, Anhui, Guangxi, moderately occurred in Heilongjiang, Hunan and Jiangxi, while slightly occurred in Jilin and Yunnan.

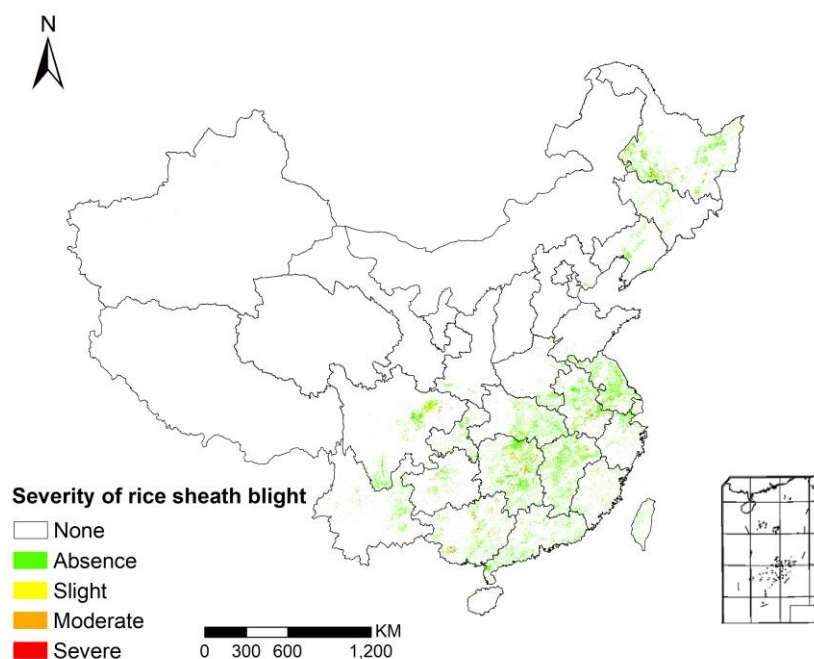


Figure 3 Spatial distribution of rice sheath blight in China (early August 2018)

Table 3 Statistics of rice sheath blight in China (early August 2018)

Region	Area / Thousand hectare					Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe			
Northeast China	3753.3	436	214.7	142	4546.0	17	
North China	69.3	21.3	6	2.7	99.3	30	
East China	8244	778	404.6	260	9686.6	15	
South China	3483.3	328.7	194.1	131.3	4137.4	16	
Central China	5637.3	690.7	334.7	203.3	6866.0	18	
Northwest China	235.4	18	5.3	2	260.7	10	
Southwest China	3728.6	476	178.7	102.7	4486.0	17	
Total	25151.2	2748.7	1338.1	844	30082.0	16	

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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.

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