

Aerospace Information Research Institute, Chinese Academy of Sciences
 Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences
 Key laboratory of Digital Earth Science, Chinese Academy of Sciences
 Sino-UK Crop Pest and Disease Forecasting & Management Joint Laboratory
 Key Lab of Aviation Plant Protection, Ministry of Agriculture and Rural Affairs, P.R. China

Crop pests and diseases monitoring and forecasting in China

Early September 2018

Medium infestation of pests and diseases on rice so far

Affected area reached 17.1 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 September in 2018, due to the similar 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*) reaches 17.1 million

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hectares.

Review of meteorological conditions

Field temperature in Center and Northeast China are equal with previous years. In late August, minimum of the averaged field temperature of the plant areas in China reached 20°C, and in part of the southern area, reached 30°C.

Field precipitation in Center China and South China are higher than previous years. Affected by the typhoon and raining process in South China, Central China, and Southwest China during mid to late August, field humidity reached a suitable level for pests and diseases development.

Rice planthopper

In early September 2018, the occurrence of rice planthopper reached 5.5 million hectares, with the pest mainly occurred in Southwest China and South China. The specific distributions and severities are shown in Figure 1 and Table 1.

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

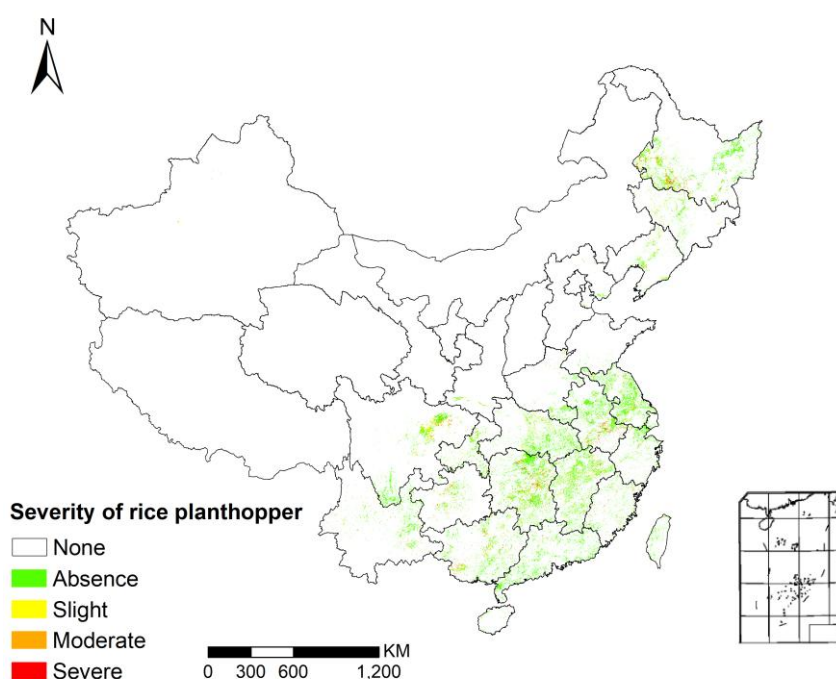


Figure 1 Spatial distribution of rice planthopper in China (early September 2018)

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

Region	Area / Thousand hectare					Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe			
Northeast China	3534	546.7	283.3	182	4546.0	22	
North China	66	23.3	6.7	3.3	99.3	34	
East China	8192	810.6	416.7	267.3	9686.6	15	
South China	3626.7	255.4	153.3	102	4137.4	12	
Central China	5370	838.7	403.3	254	6866.0	22	
Northwest China	238	16	4.7	2	260.7	9	
Southwest China	3558.7	581.3	219.3	126.7	4486.0	21	
Total	24585.4	3072	1487.3	937.3	30082.0	18	

Rice leaf roller

In early September 2018, the occurrence of rice leaf roller reached 4.8 million hectares, with the pest mainly occurred in East China, South China and Southwest China. The specific distributions and severities are shown in Figure 2 and Table 2.

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

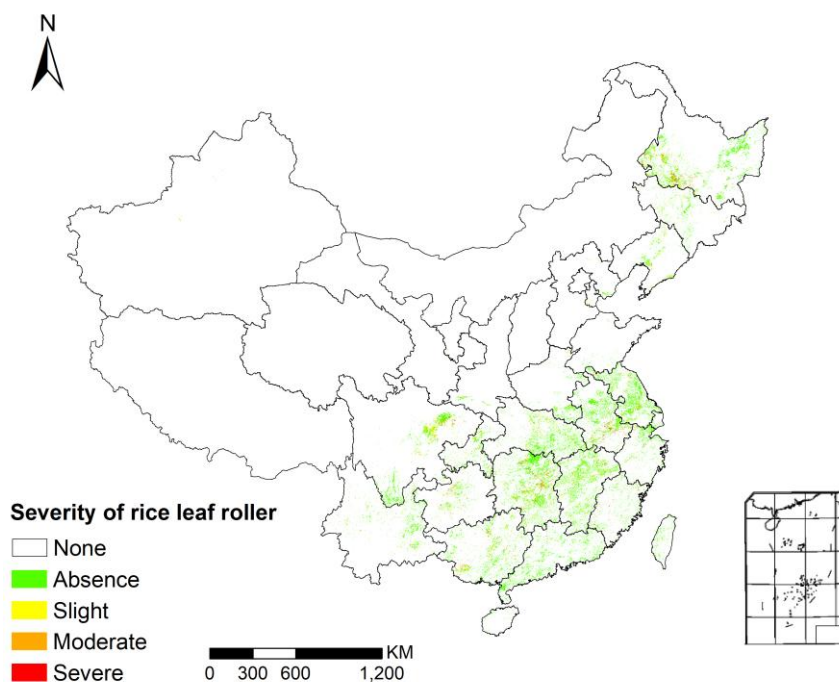


Figure 2 Spatial distribution of rice leaf roller in China (early September 2018)

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

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	3672	472	244.7	157.3	4546.0	19
North China	70.6	20	6	2.7	99.3	29
East China	8393.2	700.7	360.7	232	9686.6	13
South China	3696	220.7	132.7	88	4137.4	11
Central China	5570.7	726	349.3	220	6866.0	19
Northwest China	240.7	14	4	2	260.7	8
Southwest China	3683.4	503.3	190	109.3	4486.0	18
Total	25326.6	2656.7	1287.4	811.3	30082.0	16

Rice sheath blight

In early September 2018, the occurrence of rice sheath blight reached 6.8 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, Hunan, and Anhui, moderately occurred in Guangxi, Heilongjiang, Jiangxi, Jiangsu, and Hubei, while slightly occurred in Jilin and Yunnan.

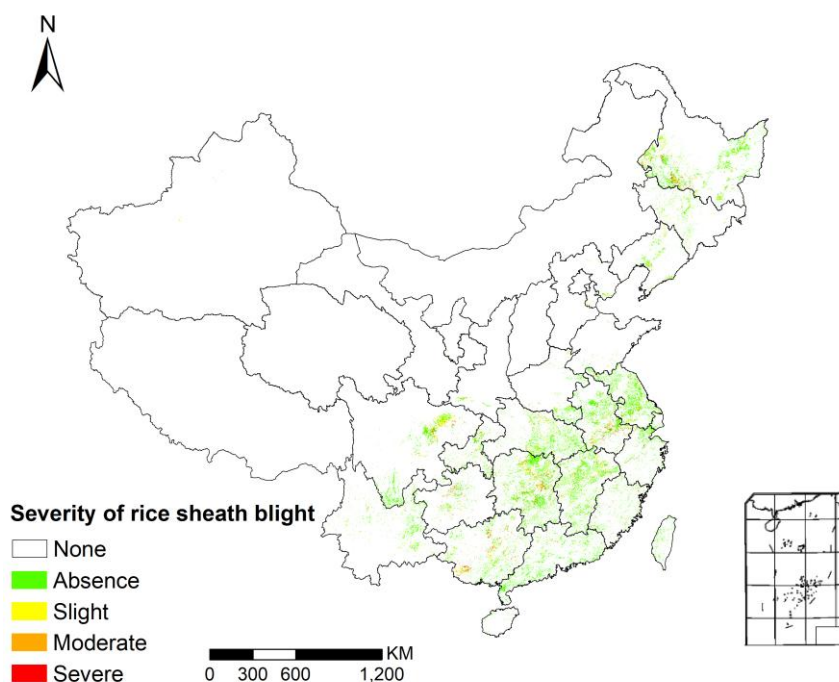


Figure 3 Spatial distribution of rice sheath blight in China (early September 2018)

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

Region	Area / Thousand hectare					Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe			
Northeast China	3420	610	316	200		4546.0	25
North China	58.7	29.3	8	3.3		99.3	41
East China	7726	1060.6	546	354		9686.6	20
South China	3260	438.7	266	172.7		4137.4	21
Central China	5145.3	970.7	466	284		6866.0	25
Northwest China	228.7	22.6	6.7	2.7		260.7	12
Southwest China	3423.3	667.4	252	143.3		4486.0	24
Total	23262	3799.3	1860.7	1160		30082.0	23

Contact us

Institute of remote sensing and digital earth Chinese academy of sciences

No.9 Dengzhuang South Road,Haidian District,

Beijing 100094, P.R.China.

<http://rscrop.com/>

<http://www.rscropmap.com>

<http://www.wechat.com/en/>



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

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

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Disclaimer

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.

Contact us **Email:** rscrop@radi.ac.cn

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Corresponding author

Professor Wenjiang Huang

Institute of Remote Sensing and Digital Earth,
Chinese Academy of Sciences

Email: huanwj@radi.ac.cn

Tel: +86-10-82178178

FAX: +86-10-82178177

Main contributors

Chinese contributors: Yingying Dong, Huichun Ye, Yue Shi, Qiong Zheng, Huiqin Ma, Linyi Liu, Jingcheng Zhang, Jingfeng Huang, Xiangqun Nong, Bo Liu, Bei Cui, Linsheng Huang, Juhua Luo, Xiaoping Du, Xiaodong Yang, Yanhua Meng, Hong Chang, Qing Zhang, Dacheng Wang, Gang Sun, Dailiang Peng, Longlong Zhao, Wei Feng, Chao Ding, Xianfeng Zhou, Qiaoyun Xie, Weiping Kong, Cuicui Tang, Fang Xu, Jianli Li, Wenjing Liu, Junjing Lu, Bin Wu, Naichen Xing, Furan Song, Chuang Liu, Chao Ruan, Yun Geng, Yu Ren, Jing Jiang, Zhaochuan Wu, Anting Guo, Yu Jin.

Foreign contributors: Belinda Luke, Pablo Gonzalez-Moreno, Sarah Thomas, Timothy Holmes, Bryony Taylor, Feng Zhang, Hongmei Li, Wenhua Chen, Jason Chapman, Martin Wooster, Bethan Perkins, Hugh Mortimer, Jon Styles, Andy Shaw, Liangxiu Han, Yanbo Huang, Ruiliang Pu, Jadu Dash, Stefano Pignatti, Giovanni Laneve, Raffaele Casa, Simone Pascucci.