

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

Mid September 2018

Medium infestation of pests and diseases on rice so far

Affected area reached 18.2 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.

Middle September in 2018, due to the lower 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 18.2 million hectares.

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Review of meteorological conditions

Field temperature in Center and Northeast China are lower than previous years. In mid-September, minimum of the averaged field temperature of the plant areas in China reached 16°C, which was 2.7°C lower than the same period of previous years.

Field precipitation in Center China and South China are higher than previous years. Affected by the typhoon and raining process in North China, East China, and Southwest China during early- mid September, field humidity reached a suitable level for pests and diseases development.

Rice planthopper

In mid September 2018, the occurrence of rice planthopper reached 5.8 million hectares, with the pest mainly occurred in South China and Southwest China. The specific distributions and severities are shown in Figure 1 and Table 1.

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

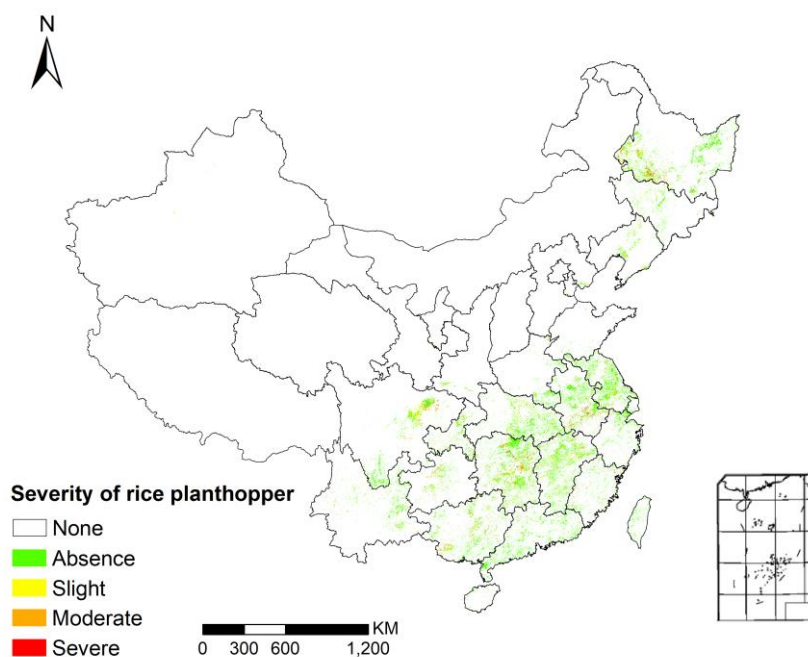


Figure 1 Spatial distribution of rice planthopper in China (mid September 2018)

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

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	3486.7	570	298	191.3	4546.0	23
North China	63.3	24.7	7.3	4	99.3	36
East China	8123.3	844.6	438	280.7	9686.6	16
South China	3601.3	268.1	160.7	107.3	4137.4	13
Central China	5299.3	878	422.7	266	6866.0	23
Northwest China	236	16.7	5.3	2.7	260.7	9
Southwest China	3514	609.3	230	132.7	4486.0	22
Total	24323.9	3211.4	1562	984.7	30082.0	19

Rice leaf roller

In mid September 2018, the occurrence of rice leaf roller reached 5.1 million hectares, with the pest mainly occurred in Southwest China, East China and South China. The specific distributions and severities are shown in Figure 2 and Table 2.

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

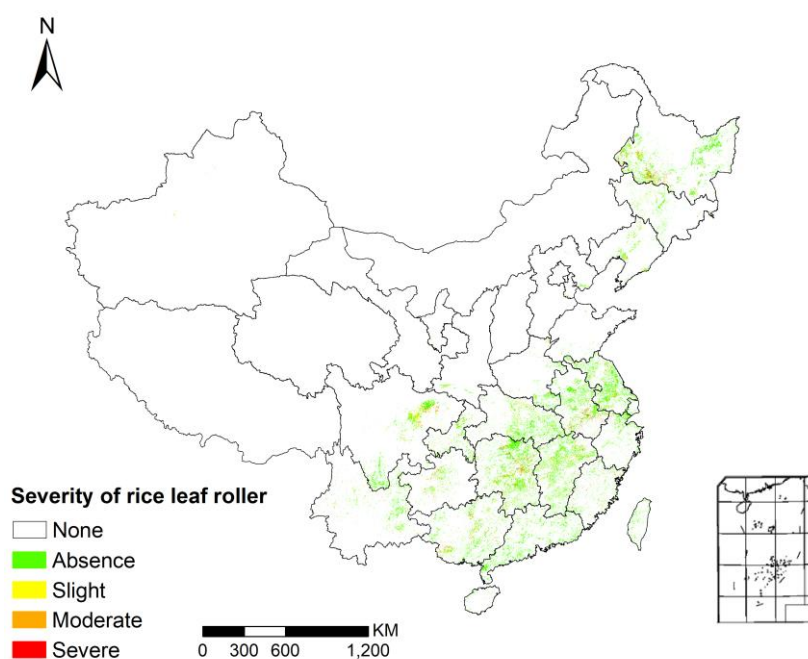


Figure 2 Spatial distribution of rice leaf roller in China (mid September 2018)

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

Region	Area / Thousand hectare					Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe			
Northeast China	3613.3	503.4	261.3	168	4546.0	21	
North China	68	21.3	6.7	3.3	99.3	32	
East China	8310	746	384	246.6	9686.6	14	
South China	3665.4	236	141.3	94.7	4137.4	11	
Central China	5487.3	772.7	372	234	6866.0	20	
Northwest China	238.7	14.6	4.7	2.7	260.7	8	
Southwest China	3634	534.7	201.3	116	4486.0	19	
Total	25016.7	2828.7	1371.3	865.3	30082.0	17	

Rice sheath blight

In mid September 2018, the occurrence of rice sheath blight reached 7.3 million hectares, mainly occurred in Southwest China, East China and North China. The specific distributions and severities are shown in Figure 3 and Table 3.

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

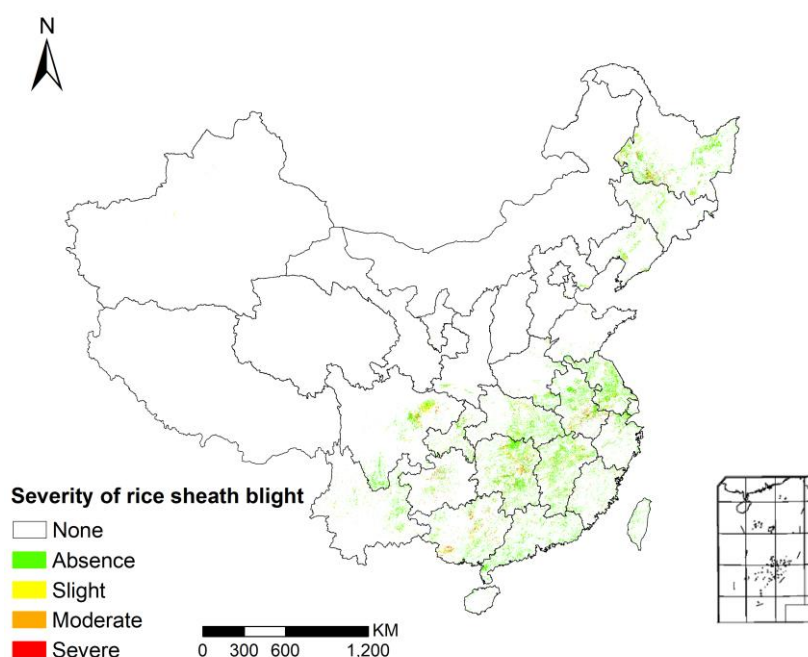


Figure 3 Spatial distribution of rice sheath blight in China (mid September 2018)

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

Region	Area / Thousand hectare					Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe			
Northeast China	3332.6	656	342.7	214.7	4546.0	27	
North China	55.2	30.7	8.7	4.7	99.3	44	
East China	7602	1126.6	583.3	374.7	9686.6	22	
South China	3215.4	460.7	279.3	182	4137.4	22	
Central China	5024	1037.4	495.3	309.3	6866.0	27	
Northwest China	226	24	7.4	3.3	260.7	13	
Southwest China	3348	714	270	154	4486.0	25	
Total	22803.2	4049.4	1986.7	1242.7	30082.0	24	

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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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.