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Crop pests and diseases monitoring and forecasting in China

Medium infestation of pests and diseases on maize in 2018

Affected area reached 6.2 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.

In 2018, due to the lower temperature and higher precipitation than previous years, pest and disease are moderately occurred in maize regions of China. The total area affected by maize armyworm (*Mythimna separata*), maize northern leaf blight (*Setosphaeria turcica*) reaches 6.2 million hectares.

Content

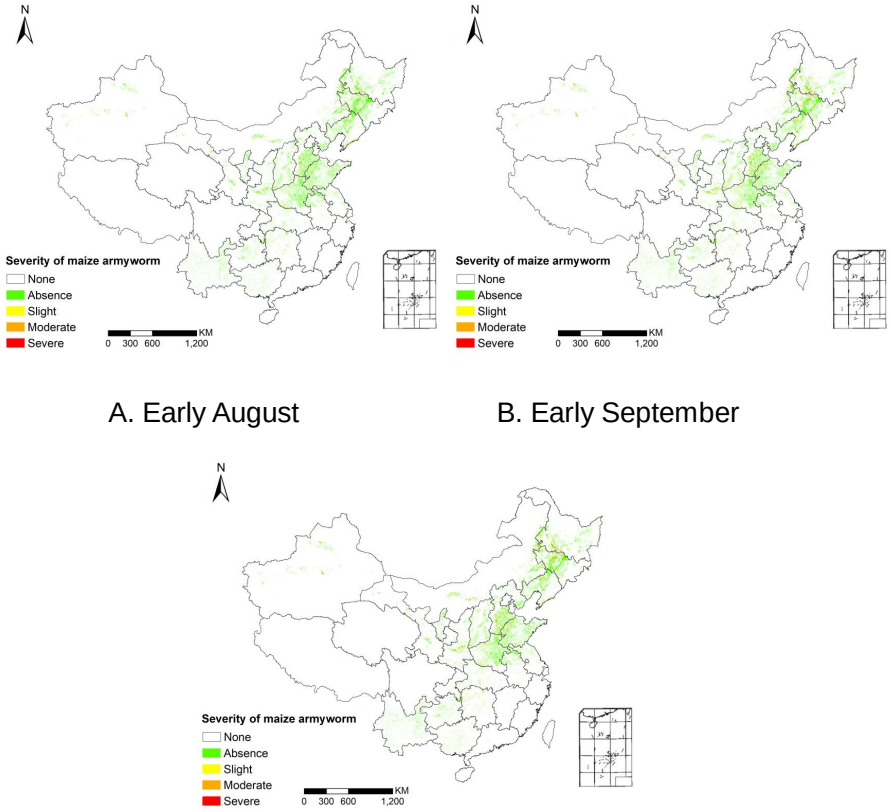
Review of meteorological conditions

Field temperature are lower than previous years. From August to mid September, minimum of the averaged field temperature in rice regions of China reached 16.0℃, which is 2.7℃ lower than the same period of previous years.

Field precipitation from August to mid September are higher than previous years. Affected by the typhoon and raining process in North China, East China, and Southwest China, field humility reached a suitable level for pests and diseases development.

Maize armyworm

In 2018, the occurrence of maize armyworm reached 3.9 million hectares. The pest first appeared in part of central and Northeast China in early August. The full incidence period was during early to mid September, while pest severely occurred in Northeast, North and central China. The specific distributions and severities are shown in Figure 1 and Table 1.



A. Early August B. Early September

C. Mid September

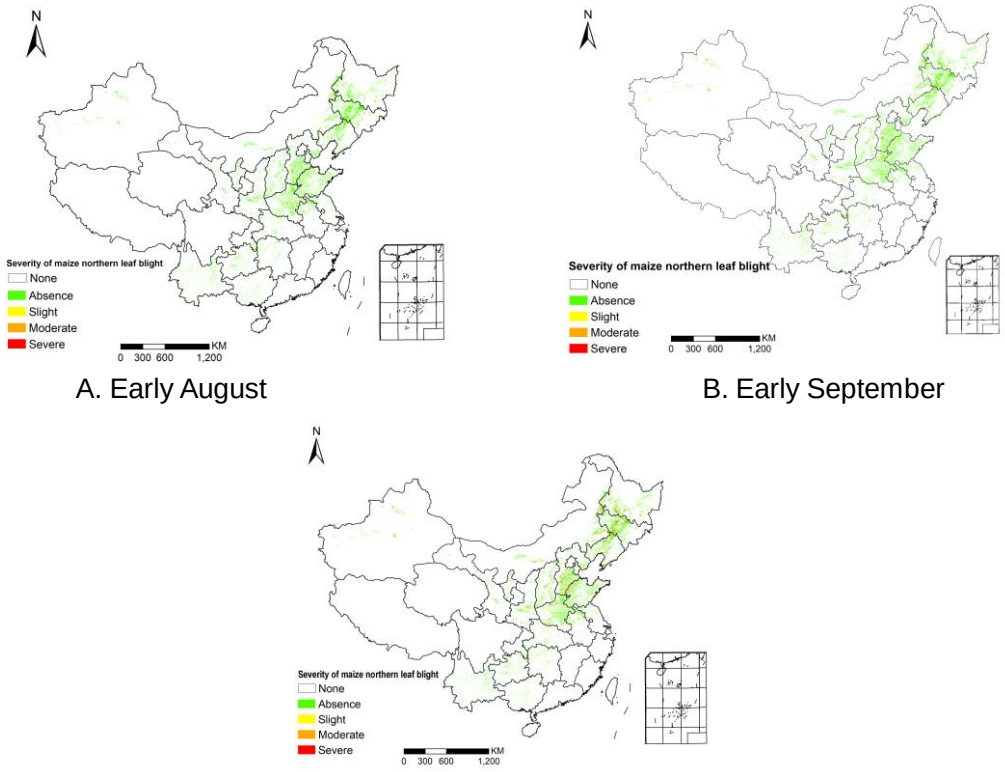
Figure 1 *Spatial distribution of maize armyworm in China (2018)*

Table 1 *Statistics of maize armyworm in China (2018)*

Region	Area / Thousand hectare			
	Early August	Early September	Mid September	Total area
Northeast China	762.0	1476.0	1512.0	11132.7
North China	350.0	684.6	694.0	5099.3
East China	202.0	390.0	400.0	4629.3
South China	30.7	60.7	64.0	608.6
Central China	222.7	437.4	442.0	4328.1
Northwest China	231.3	451.4	459.3	3366.0
Southwest China	177.4	350.6	356.7	2728.7
Total	**1976.1**	**3850.7**	**3928.0**	**31892.7**

Maize northern leaf blight

In 2018, the occurrence of maize northern leaf blight reached 2.3 million hectares. The disease first appeared in Northeast China, east region of Northwest China, south region of North China and central China in early August. And the widespread period was during early to mid September, which mainly in Northeast China, and moderately occurred in North China, central China and north region of East China. The specific distributions and severities are shown in Figure 2 and Table 2.



A. Early August

B. Early September

C. Mid September

Figure 2 *Spatial distribution of maize northern leaf blight in China (2018)*

Table 2 *Statistics of maize northern leaf blight in China (2018)*

Region	Area / Thousand hectare			
	Early August	Early September	Mid September	Total area
Northeast China	355.4	772.7	797.4	11132.7
North China	163.3	359.3	390	5099.3
East China	144	289.3	347.3	4629.3
South China	14.7	35.4	37.3	608.6
Central China	135.3	290	314.8	4328.1
Northwest China	109.3	238.7	243.3	3366.0
Southwest China	80	170	177.3	2728.7
Total	**1002.0**	**2155.4**	**2307.4**	**31892.7**

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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.

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