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**Crop pests and diseases monitoring and forecasting in China**

## Minor infestation of pests and diseases on wheat in 2018

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.

In 2018, due to the lower temperature and higher precipitation than previous years in the winter wheat region of China, pest and disease are slightly occurred. The total area affected by wheat yellow rust (*Puccinia striiformis*), sheath blight (*Rhizotonia cerealis*) and aphids (*Sitobion avenae* & *Rhopalosiphum padi*) has reached 15.2 million hectares.

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### Review of meteorological conditions

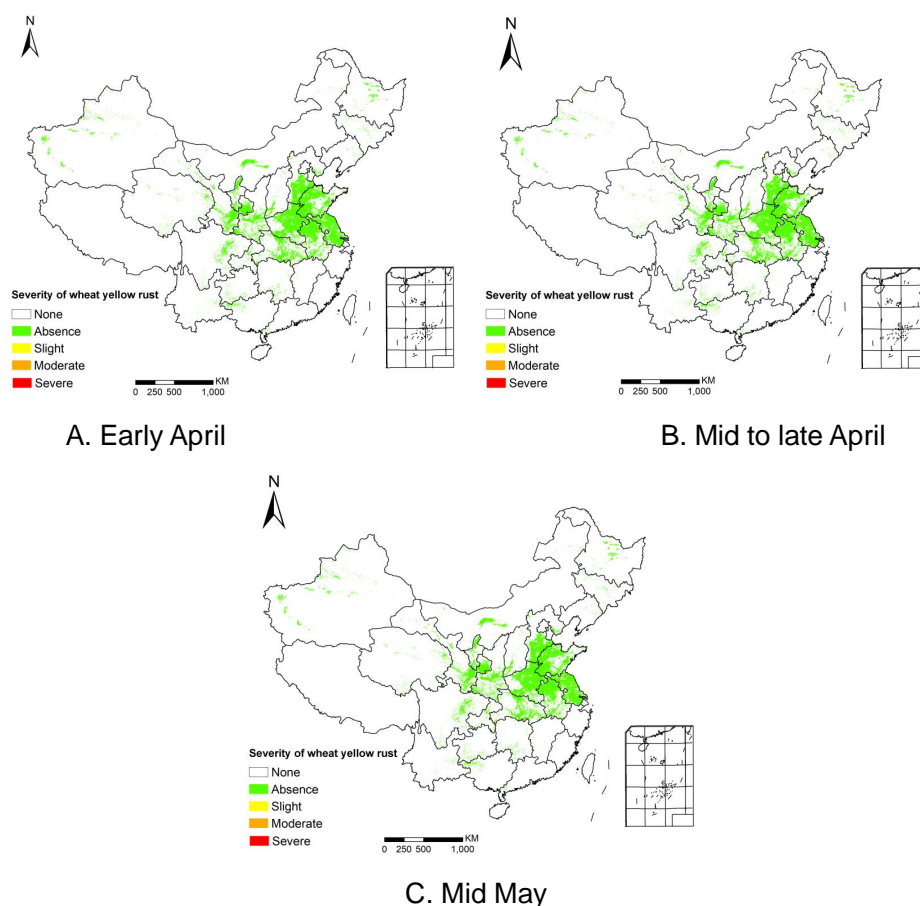
Field temperature are lower than previous years. From April to May, maximum of the averaged field temperature in winter wheat regions of China reached 23.2℃, which is 0.6℃ lower than previous years.

Field precipitation from April to May are higher than previous years. According to the rainfall process in north China, northwest China, and central China, field humility reached a suitable level for pests and diseases development.

## Wheat yellow rust

In 2018, the occurrence of yellow rust reached 1 million hectares. The disease first appeared in the southwest China, northwest China, and Jiangnan plain in early April. The full incidence period was during mid-late April to

mid May, and then the disease spread in Huanghuai, central China, and southwest China. The specific distributions and severities are shown in Figure 1 and Table 1.



**Figure 1** Spatial distribution of wheat yellow rust in China (2018)

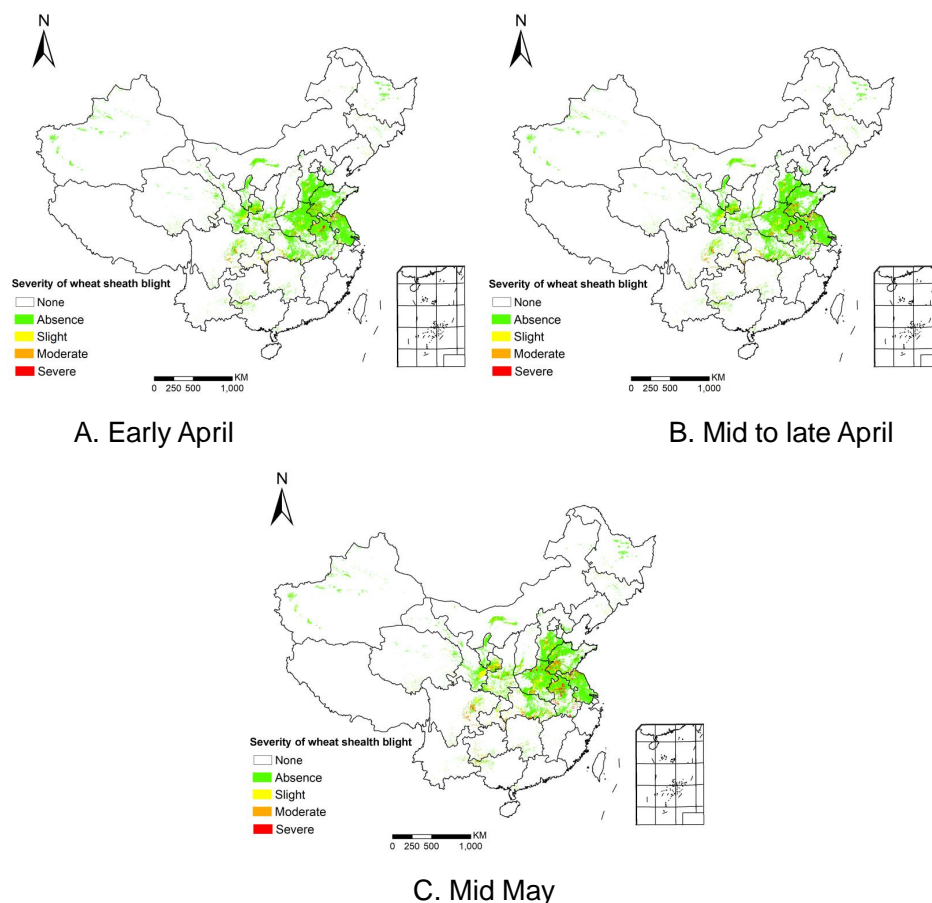
**Table 1** Statistics of wheat yellow rust in China (2018)

Region	Area / Thousand hectare			
	Early April	Mid to late April	Mid May	Total area
Northeast China	0	0	1.3	85.3
North China	25.3	60.0	129.3	3579.3
East China	78.0	177.9	383.2	8556.0
South China	0	0	0	16.7
Central China	60.0	135.3	299.6	6710.0
Northwest China	31.3	70.6	154.1	3376.0
Southwest China	15.4	38.0	78.4	1828.7
<b>Total</b>	<b>210.0</b>	<b>481.8</b>	<b>1045.9</b>	<b>24152.0</b>

## Wheat sheath blight

In 2018, the occurrence of sheath blight reached 6.6 million hectares. The disease first appeared in Huanghuai and north China in early April. And mainly occurred in Huanghuai, north China and northwest China during mid to

late April. Then, the full incidence period was in mid-May, which mainly in central China, north China and east China, and slightly occurred in northwest China. The specific distributions and severities are shown in Figure 2 and Table 2.



**Figure 2** Spatial distribution of wheat sheath blight in China (2018)

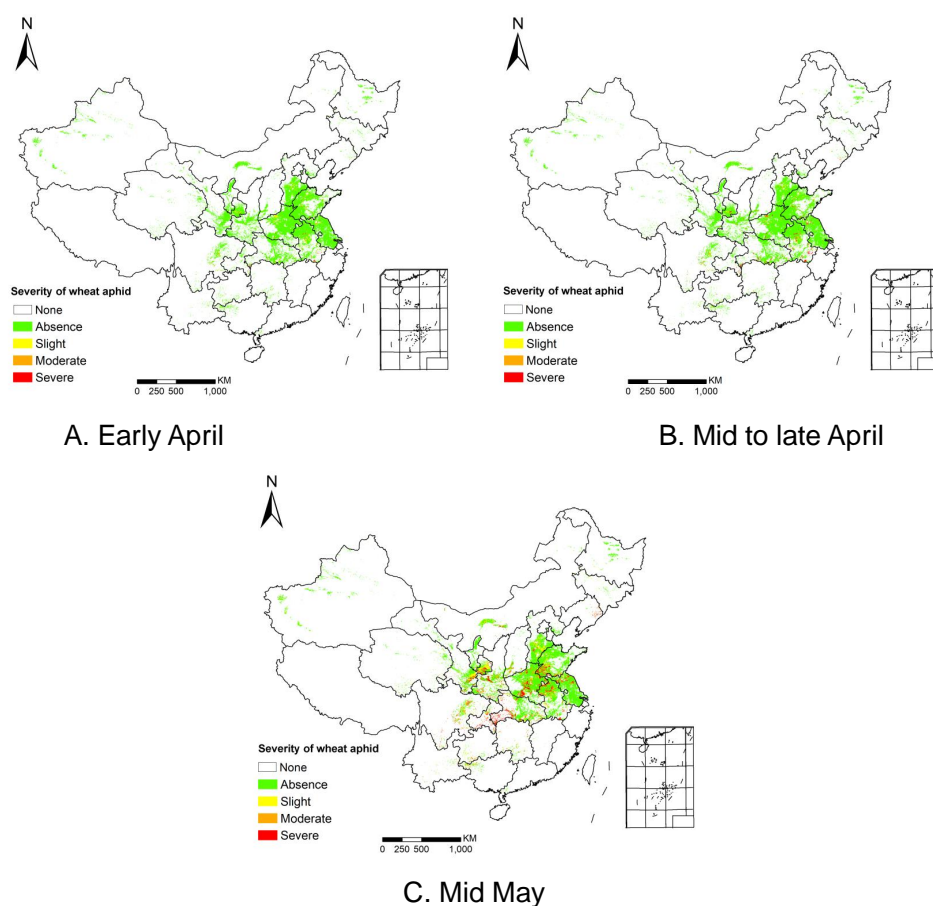
**Table 2** Statistics of wheat sheath blight in China (2018)

Region	Area / Thousand hectare			
	Early April	Mid to late April	Mid May	Total area
Northeast China	6.0	7.3	10.0	85.3
North China	541.3	626.0	878.7	3579.3
East China	1542.6	1760.0	2397.3	8556.0
South China	2.7	3.4	4.7	16.7
Central China	1205.3	1377.9	1884.7	6710.0
Northwest China	616.0	706.0	970.6	3376.0
Southwest China	316.0	357.4	480.0	1828.7
<b>Total</b>	<b>4229.9</b>	<b>4838.0</b>	<b>6626.0</b>	<b>24152.0</b>

## Wheat aphid

In 2018, the occurrence of aphid reached 7.6 million hectares. The pest first appeared in part of north China and Huanghuai in early April. The full incidence period was in mid-May, which

mainly in north China, while pest severely occurred in northwest China and Sichuan basin. The specific distributions and severities are shown in Figure 3 and Table 3.



**Figure 3** Spatial distribution of wheat aphid in China (2018)

**Table 3** Statistics of wheat aphid in China (2018)

Region	Area / Thousand hectare			
	Early April	Mid to late April	Mid May	Total area
Northeast China	2.0	2.0	8.7	85.3
North China	222.6	289.9	1062.6	3579.3
East China	580.7	758.7	2770.0	8556.0
South China	0.7	0.7	6.0	16.7
Central China	454.0	592.6	2170.7	6710.0
Northwest China	233.3	304.7	1108.0	3376.0
Southwest China	105.4	137.3	480.7	1828.7
<b>Total</b>	<b>1598.7</b>	<b>2085.9</b>	<b>7606.7</b>	<b>24152.0</b>

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

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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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