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## Crop pests and diseases monitoring and forecasting in China

Mid to late April 2018

### Minor infestation of pests and diseases on wheat so far

Affected area reached 7.4 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.

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

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7.4 million hectares.

#### Review of meteorological conditions

Field temperature in Southern and Western China are similar or higher than previous years. In mid-April 2018, maximum of the averaged field temperature of the plant areas in China reached 12.3 °C, and in part of the southern area, reached 14.5 °C. Meteorological conditions in these areas were conducive to the overwintering of pests and diseases.

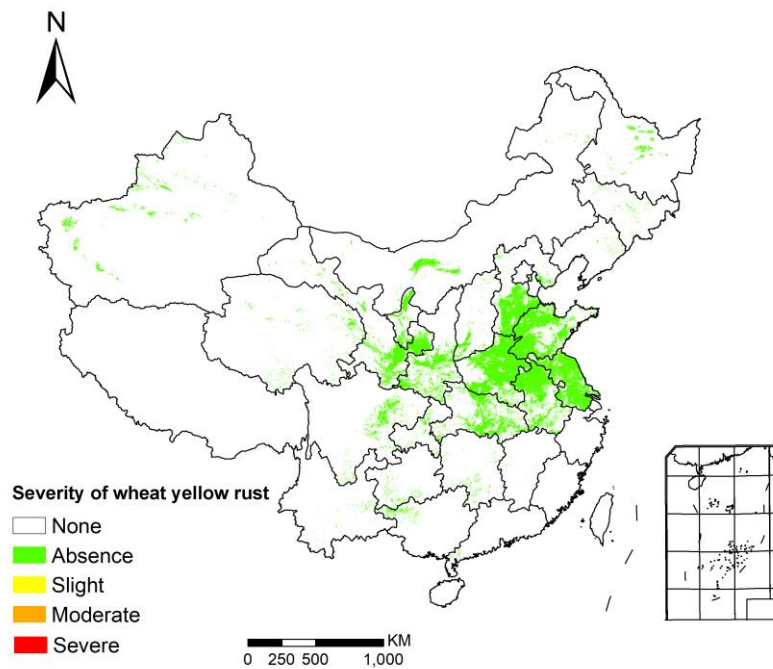
Field precipitation in Southwest China and Northwest China are lower than previous years. According to the rainfall process in Southwest China and Northwest China in mid to late April, field humidity reached a suitable level for pests and diseases development.

## Wheat yellow rust

In mid to late April 2018, the occurrence of yellow rust reached 0.5 million hectares, with the disease mainly occurred in Central China and East China. The specific distributions and

severities are shown in Figure 1 and Table 1.

Specifically, the yellow rust severely occurred in Hubei and Shaanxi, moderately occurred in Anhui and Jiangsu.



*Figure 1 Spatial distribution of wheat yellow rust in China (mid to late April 2018)*

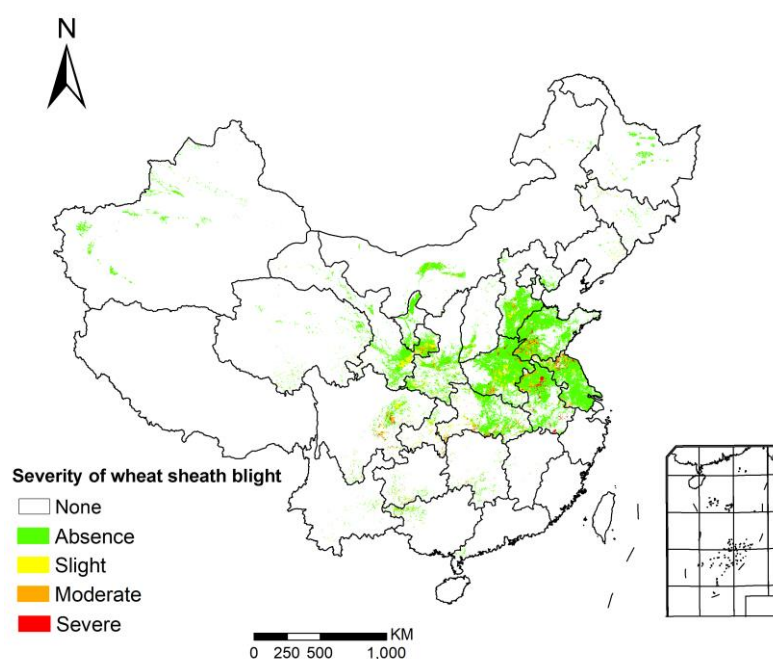
*Table 1 Statistics of wheat yellow rust in China (mid to late April 2018)*

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	85.3	0	0	0	85.3	0
North China	3519.3	30	18	12	3579.3	2
East China	8378.1	113.3	41.3	23.3	8556	2
South China	16.7	0	0	0	16.7	0
Central China	6574.7	41.3	53.3	40.7	6710	2
Northwest China	3305.4	21.3	28	21.3	3376	2
Southwest China	1790.7	12	14	12	1828.7	2
<b>Total</b>	<b>23670.2</b>	<b>217.9</b>	<b>154.6</b>	<b>109.3</b>	<b>24152</b>	<b>2</b>

## Wheat sheath blight

In mid to late April 2018, the occurrence of sheath blight reached 4.8 million hectares, with the disease mainly occurred in East China and Central China. The specific distributions and severities are shown in Figure 2 and Table 2.

Specifically, the sheath blight severely occurred in Anhui, Jiangsu, and Shandong; moderately occurred in Hebei, Hubei and Henan; while slightly occurred in Shaanxi and Gansu.



*Figure 2 Spatial distribution of wheat sheath blight in China (mid to late April 2018)*

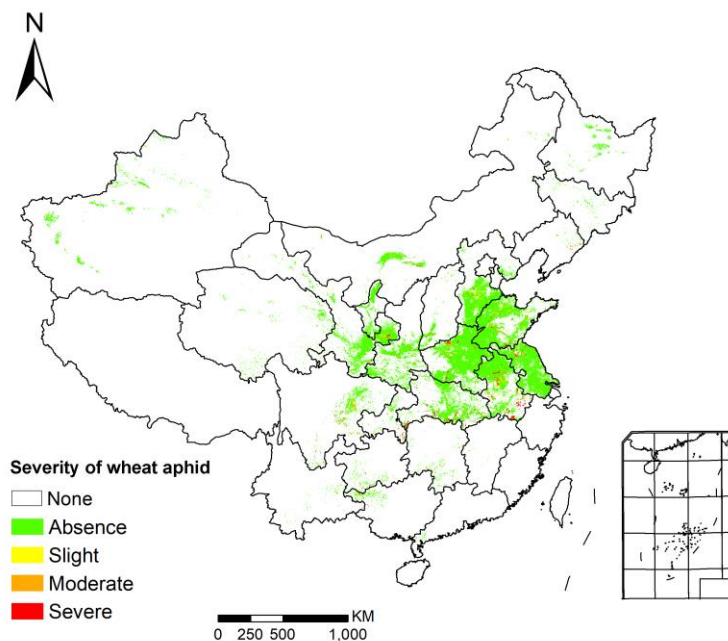
*Table 2 Statistics of wheat sheath blight in China (mid to late April 2018)*

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
<b>Northeast China</b>	78.0	5.3	1.3	0.7	85.3	9
<b>North China</b>	2953.3	440.0	126.0	60.0	3579.3	17
<b>East China</b>	6796.0	592.0	672.7	495.3	8556.0	21
<b>South China</b>	13.3	2.0	0.7	0.7	16.7	20
<b>Central China</b>	5332.1	694.0	411.9	272.0	6710.0	21
<b>Northwest China</b>	2670.0	471.3	154.7	80.0	3376.0	21
<b>Southwest China</b>	1471.3	179.4	108.0	70.0	1828.7	20
<b>Total</b>	<b>19314.0</b>	<b>2384.0</b>	<b>1475.3</b>	<b>978.7</b>	<b>24152.0</b>	<b>20</b>

## Wheat aphid

In mid to late April 2018, the occurrence of aphid reached 2.1 million hectares, mainly occurred in Central China and East China. The specific distributions and severities are shown in Figure 3 and Table 3.

Specifically, the aphid severely occurred in Jiangsu, Anhui, Henan and Gansu; moderately occurred in Hubei and Sichuan; while slightly occurred in Hebei, Shandong and Inner Mongolia.



*Figure 3 Spatial distribution of wheat aphid in China (mid to late April 2018)*

*Table 3 Statistics of wheat aphid in China (mid to late April 2018)*

Region	Area / Thousand hectare				Total area	Occurrence ratio/%
	Absence	Slight	Moderate	Severe		
Northeast China	83.3	1.3	0.7	0	85.3	2
North China	3289.4	177.3	71.3	41.3	3579.3	8
East China	7797.3	363.3	236.7	158.7	8556	9
South China	16	0.7	0	0	16.7	4
Central China	6117.4	181.3	235.3	176	6710	9
Northwest China	3071.3	140.7	97.3	66.7	3376	9
Southwest China	1691.4	44	53.3	40	1828.7	8
<b>Total</b>	<b>22066.1</b>	<b>908.6</b>	<b>694.6</b>	<b>482.7</b>	<b>24152</b>	<b>9</b>

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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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