## Migratory locust in wheat

*Locusta migratoria* oriental migratory locust, migratory locust, 东亚飞蝗 in Chinese language

### Prevention
- Deep tillage improves soil for good plant growth and better crop tolerance to damage.
- Use tolerant high-producing varieties (e.g. Yumai 39).
- Plant 10 days early.
- Reasonably irrigate and fertilize to create favorable conditions for wheat to increase its tolerance to damage.
- Remove residues after harvest to reduce food source of remaining locusts. If there are no major diseases or pests in the field, leave residues to improve the soil.

### Monitoring
- Search for locusts during May, because locusts will immigrate in this period.
- Make at least two checks - early May and middle of May.
- Look for feeding holes and chewed leaves.
- Look on wheat leaves for locusts.
- Locusts are about 25mm, are often tawny and include 3 parts: head with antennae, chest abdomen, and have long legs.
- Threshold: Counts of 1-5 locusts per square metre may require control action. If you have more than 5 locusts per square meter direct control is urgent.

### Direct Control
- Handpick or sweep net locusts.
- Use pneumatic sucking-capture machines to collect locusts.
- Apply biopesticides with beneficial fungi (2.5% metarhizium anisoplae), ultra-low volume sprayer, usually at 50ml/ha but check product labels. Make sure you use the right beneficial fungal strain.
- Apply neem botanicals (0.3% neem oil, ultra-low volume spray, usually at 150ml/ha).
- Malathion - products. Usually applied at: 600-1200g/ha, effective spray range 3-5m, spray height 0.7-1m, but double-check product labels. Ultra-low volume mobile spray. Moderate chances of resistance. Chemical group: Organophosphates. IRAC group: group 1 (AChE inhibitors).
- Cypermethrin - products (for example Cymbush). Usually applied at: 37.5-52.5g/ha, but double-check product labels. Chemical group: Pyrethroids, Moderate chances of resistance.

### Direct Control
- When using a chemical or botanical pesticide, always wear protective clothing and follow the instructions on the product label.
- WHO toxicity class II pesticides may not be allowed in certain IPM or “green” production schemes.
- Always consult recent list of registered pesticides of ICAMA/China, and of China pesticide information network. See http://www.chinapesticide.gov.cn/
- WHO toxicity class II moderately acute hazardous, possible carcinogen. In the middle of May when threshold reached. Max two times per growing season. Pre-harvest interval (PHI) 21 days; restricted re-entry interval (REI) 3 days.
- WHO class II moderately hazardous. Timing of application mid-May when threshold reached. Two times per growth season. No carcinogenicity and teratogenicity for humans. PHI 7 days, REI 1/2 day.

### Restrictions

### China

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