

## Session III    Lecture 2

# **Insecticide Resistance Management of Overseas Migratory Insect Pests in Asia**

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### Summary

The brown planthopper (*Nilaparvata lugens*) and the rice leaffolder (*Cnaphalocrocis medinalis*) are major rice pests, while the fall armyworm (*Spodoptera frugiperda*), has recently invaded East Asia causing severe damage to forage maize. Insecticide resistance in these migratory pests has become a major concern in Japan. Although these insect pests fail to overwinter and perish during winter in most parts of Japan, they migrate from overseas each year from early spring to summer, reproducing over multiple generations and causing serious crop damage. Importantly, these pests do not develop insecticide resistance in Japan but acquire resistance in their source regions where they persist year round. Therefore, insecticide resistance management (IRM) of these pests must be conducted in Asian countries where these pests originate, requiring international cooperation is necessary for effective implementation. To address this, the Institute for Plant Protection, NARO (NIPP), in collaboration with the Japan International Research Center of Agricultural Sciences (JIRCAS) is actively engaged in IRM initiatives. These efforts include partnerships with Vietnam, where the brown planthopper is prevalent, and Thailand, where the fall armyworm occurs year-round. This presentation will introduce NARO's international collaboration efforts to manage insecticide resistance in migratory pests and ensure sustainable pest management in Asia.