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Detection and Monitoring Survey of Invasive Plant Pests in Japan

Submitted by Japan

I Introduction

1. Early detection, made possible by surveillance such as the detection and monitoring survey in Japan, besides other plant quarantine measures such as the port-of-entry inspection on imported plants, is critical for plant protection bodies to avert invasion or further devastating outbreak by plant pests. This paper gives an overview of Japan's endeavors for the detection and monitoring survey as the crucial component of surveillance of plant pests and diseases.

II Brief History and Background

2. The detection and monitoring survey can date back to the 1970s. In the Southwestern islands, then, the melon fly, *Bactrocera cucurbitae* and the oriental fruit fly, *B. dorsalis* began extending their habitat toward north, threatening the agricultural production in mainland Japan. To prevent them from invading the mainland, the detection and monitoring survey by using lure traps started in 1974.

3. In addition, the increasing influx of agricultural products of varieties, besides innovation of transportation in terms of both speed and capacity, has extended chances for living plant pests to reach the border, which raised the risks of their introduction and spread into the country. Given such increasing risks posed by invasive pests, Japan has been adding new species of major significance to the target list of its detection and monitoring survey. Even after the oriental fruit fly and the melon fly have been eradicated in 1986 and 1993 respectively, Japan is always on a high alert for these pests so as to prevent the re-introduction or re-establishment.

III Organizations

4. In administrating and conducting the detection and monitoring survey, plant protection institutions of state and local governments are playing different roles while they are working in cooperation.

5. Plant Protection Division (PPD) of Food Safety and Consumers Affairs Bureau of the Ministry of Agriculture, Forestry, and Fishery (MAFF) has the broad authorities in plant protection affairs including the detection and monitoring survey of invasive plant pests.

6. National Plant Protection Stations (NPPS) play a major role in carrying out plant quarantine such as the inspections of plants, research on plant pests and so forth. As for the detection and monitoring survey, they mainly conduct the detection and monitoring survey at ports of entry.

7. At local level, Plant Protection Centers (PPCs) established in each prefecture are mainly in charge of conducting the survey of the existing important pests and invasive pests in the production areas.

IV Detection and Monitoring Survey in Japan

8. The detection and monitoring survey in Japan consists of two major types of survey shown as follows:

- (a) Survey for specific target species.
- (b) General survey (with no specific target species).

9. Information gathered from scientific source, producers and public also contributes to early detection of invasive pests.

A. Survey for specific target species

10. Below is the current list of the most important designated target pests.

- Med fly, *Ceratitis capitata*; Natal fly, *C. rosa*
- Oriental fruit fly, *Bactrocera dorsalis* complex; Peach fruit fly, *B. zonata*
- Melon fly, *B. cucurbitae*; Queensland fruit fly, *B. tryoni*
- *Anastrepha* spp., *Rhagoletis* spp., *B. latifrons*
- Codling moth, *Cydia pomonella*
- Sweet potato weevil, *Cylas formicarius*
- Fire blight, *Erwinia amylovora*
- Bacterial fruit blotch, *Acidovorax avenae* subsp. *citrulli*

B. Survey for specific target species at port of entry

11. NPPSs are responsible for conducting this type of survey at more than 100 ports all over Japan. The NPPS officers are committed to installing and checking the traps, and identifying trapped pests.

C. Survey for specific target species at production area

12. PPCs, established by the prefectural governments according to the Plant Protection Law, are dedicated to the quarantine and control of plant pests in local districts. One of their major roles is the pest forecast based on the survey on the important agricultural pests in their jurisdictions. The information gathered through PPCs' survey constitutes the principal source of the national pests forecast issued by PPD.

13. The PPC personnel in each prefecture also conducts the detection and monitoring survey at production areas in the same way as those surveys at port of entry. The number of traps, locations, and survey period are determined based on the size of local production fields and local climate condition.

D. Survey in the areas with higher risk of re-introduction of fruit flies

14. Okinawa, Amami, and Ogasawara Islands, which have undergone the outbreaks of fruit flies, are considered to be faced with the higher risks of re-introduction. Therefore, in these areas, lure traps are installed at higher density.

E. Reporting the result of the survey

15. Upon detection of any target species, prompt report is sent to PPD for further actions necessary for control. In addition, the annual reports of the surveys are prepared.

16. When an outbreak or establishment of a significant pest is confirmed, PPD takes immediate actions, including the emergency control based on the provisions of Plant Protection Law, in cooperation with the other organizations such as the prefectural governments concerned.

V General Survey for Invasive Pests**A. General survey for invasive pests at port of entry**

17. NPPSs carry out the semiannual general "roundup" survey for invasive pests at more than 100 ports all over Japan. In a general survey, the NPPS personnel collects as many pests as possible, and identifies them, to facilitate early detection of invasive pests.

B. Action plans for newly invaded plant pests

18. PPD is to take appropriate actions, in cooperation with the related organizations, for management of newly invaded plant pests. To facilitate the immediate actions, action plans for significant plant pests are currently under preparation.

VI Concluding Remarks

19. Early detection, and ultimately, prevention of establishment or outbreak is the major purpose of the detection and monitoring survey of invasive pests. To make early detection possible, essential are appropriate detection and monitoring surveys that allow prediction of invasive pests. Continuously updated pest information gathered through these surveys, combined with interception records by the quarantine inspection and data concerning establishment or outbreak abroad, enables more precise, thus practical, prediction of invasive plant pests, and prevention of establishment or outbreak in the end.

20. The surveys outlined above are playing crucial roles in prediction and early detection of significant pests in Japan. Japan is to continue such efforts to protect the domestic agricultural production from serious damage by plant pests as well as to contribute to preventing plant pests from spreading across national boundaries.
