



CHINA CUSTOMS CONTAINER STUDY

UPDATE AND STUDY OVERVIEW

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1. Introduction

- [1] In alignment with the IPPC initiative aimed at enhancing collaboration between NPPOs and industry in the collection of pest risk information relating to sea containers, China Customs has undertaken a comprehensive study on the monitoring of biosafety risk factors associated with globally import empty containers from March 2024 to August 2025.

2. Update and study overview

- [2] The project is divided into 3 parts. The first part involves the customs officer conducting regular inspections of empty containers to gather information about potential contaminants. In the second part, the customs officer selects a specific number of empty import containers for a thorough inspection. During this phase, bio-safety risk factor information is collected from 12 different sides of each container. The third part entails a complete inspection of 12 sides of various design test containers to gather information on contamination and structural damage. In addition to customs, other participating units include the container production company and the shipping company. In addition, China has also adopted eDNA testing: to test dust samples collected for identifying the presence or absence of pests.
- [3] In total 18 months survey of the 1st and 2nd parts, China customs districts in Shenzhen, Shanghai, and Ningbo conducted random inspections of 37,584 empty containers. The number of containers selected in this survey is consistent with the overall trend of empty container imported in China. This effort resulted in the identification of contaminants 5,351 times, involving 3,889 empty containers originating from 69 countries or regions across Asia, Africa, Europe, North America, South America, and Oceania. The overall interception rate was calculated at 10.35%. The identified contaminants encompassed soil, seeds, plant materials, insect eggs, insects, and residues from goods not documented in the shipping manifest. Within this timeframe, 15 species of quarantine pests were intercepted 47 times, and 14 species of invasive alien organisms were encountered 91 times. A total of 867 species including insects, fungi, weeds, invertebrates and nematodes has been detected in the eDNA testing. The findings of Chinese survey underscore the significant risk posed by pests and alien species disseminated via empty containers in international transport.
- [4] In the 3rd part of total 18 months survey, China has put in 36 test containers of 3 types and 4 varieties, involving three different types of flooring (including double-sided CFRTP filmed bamboo-wood floor), as well as innovations in six aspects of container design:, such as steel understructure reinforcement for “V” type crossmember, Closed front/rear sill, Closed bottom side rail and main girder sections, Labyrinth ventilator, Special undercoating without bitumastic, use of composite material panels for the container body, and high-performance sealant for the joint between the floor and the steel structure.
- [5] These 3 types of test containers have completed a total of 174 rounds of tests. The number of test rounds for each type of container was 58, 57 and 59 respectively, and the distribution of routes was balanced based on the overall trend of empty container imported in China. The results showed that structural innovations such as composite material container body, double-sided CFRTP filmed bamboo-wood flooring, steel understructure renovation, and high-performance sealants had an obvious effect in reducing the pest risk associated with sea container pathway.