

Disaster Management

Managing biosecurity risks of sea containers

By Annie Wright, Dave Nendick and Grant Weston, Biosecurity New Zealand



Lae (Papua New Guinea) port staff preparing to spray pre-cleaned containers with a Barflex barrier insecticide

MAF Biosecurity New Zealand and MAF Quarantine Service ran an offshore programme (EQ1) in 1995 for the management of empty (majority) and full containers from three Pacific ports – Honiara in the Solomon Islands, and Lae and Port Moresby in Papua New Guinea. EQ1 was run in cooperation with CCS/Swire, the largest importers of empty containers into New Zealand.

EQ1 was begun as an offshore 'equivalent quarantine' system, as compared to the inspection and treatment regime used on arrival in New Zealand. Unfortunately, EQ1 proved to be less effective than was desirable and was redeveloped as the EQ2 system at the start of 2006. An initial three-month EQ2 trial period was then run between April and June 2006, where MAF set target contamination thresholds of 0.16 percent and 5 percent for ants and general contaminants respectively.

Prior to the trial period, up to 17 percent of containers were found to be contaminated with ants, and over 50 percent were found to contain other material such as cargo residues, soil or vegetation. Post-trial general contamination of the containers dropped to threshold levels, while ant contamination dropped to levels below threshold (0 percent from Honiara and Port Moresby and to 0.13 percent from Lae).

Treatment of containers

Under the EQ2 system, empty containers are thoroughly cleaned inside and out and treated externally with an insecticidal paint. All containers are then held in specially managed areas at the ports surrounding the container cleaning and storage zones at Honiara, Lae and Port Moresby.

These areas are treated with toxic ant baits

on a monthly basis, followed one week later by an insecticidal spray application to exclude and kill ants or other pests. Trash and vegetation found on or around the designated areas are removed regularly to deny refuge to ants and/or any other pests. Loaded containers are also cleaned externally, treated with the insecticidal spray and stored securely prior to export to New Zealand.

Audits for effectiveness

Once the ports had met the threshold rates for contamination, it was agreed that MAF would audit the ports to assess EQ2 effectiveness prior to approving these as meeting the full system requirements. An audit was conducted by MAF Biosecurity New Zealand and MAF Quarantine Service auditors in December 2006 for this purpose, and the auditors also looked at the contracted services that CCS/Swire purchased from port authorities to ensure all EQ2 requirements were met.

MAF and CCS/Swire agreed that those ports that had received a successful audit, and were meeting the requirements of the EQ2 system, would receive system approval leading to a reduction in MAF Quarantine Service inspections. This would reflect the reduced biosecurity risk from this pathway. Prior to approval of the ports, all containers receive 100 percent inspection on arrival in New Zealand.

Following the December 2006 audit, MAF found Honiara and Port Moresby to be compliant apart from a few minor issues. Unfortunately, Lae was not considered compliant and containers from that port continue to receive 100 percent inspection on arrival in New Zealand until compliant threshold levels are reached and another audit is conducted.



Brown crazy ants attracted to bait gathering at the corner of a container in Honiara



MAF Auditors Grant Weston (left) and Dave Nendick examining containers for invasive ants in Honiara

Ports meet EQ2 requirements

After the minor issues were addressed at Honiara and Port Moresby, MAF monitored container importation for three months and on 17 April 2007 approved these ports as meeting the EQ2 system requirements; MAF reduced inspection in New Zealand from 100 percent to 50 percent for three months. Continued monitoring will drop inspections to 20 percent and then to 10 percent inspection levels for successive three-month periods with continued compliance. However, if thresholds levels are exceeded for general contamination, inspection levels for containers from non-compliant ports will increase in a step-wise manner for three-month periods. As MAF considers contamination with invasive ant species to be extremely serious, if thresholds levels are exceeded for ants, inspection levels for containers from non-compliant ports will increase directly to 100 percent.

MAF will continue to collect contamination data associated with containers from these ports for further assessment and analysis. Cumulative contamination rates will be re-assessed periodically, at which time inspection levels will be reviewed. As from the June 2007 audit, offshore audits will continue at six-monthly intervals with a view to reducing these to annual activities with continued adherence to EQ2 system requirements and maintenance of agreed contamination thresholds.

MAF has also received expressions of interest in the EQ2 programme from other container importers, and intends to use EQ2 as a model to further manage container-associated biosecurity risks offshore.