

Insect Infestation in Food Aid – Phytosanitary Risks and Responses

An important issue -

**Donors
National government
Beneficiaries**

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(on behalf of UN World Food Programme)



Objectives

The presentation will address -

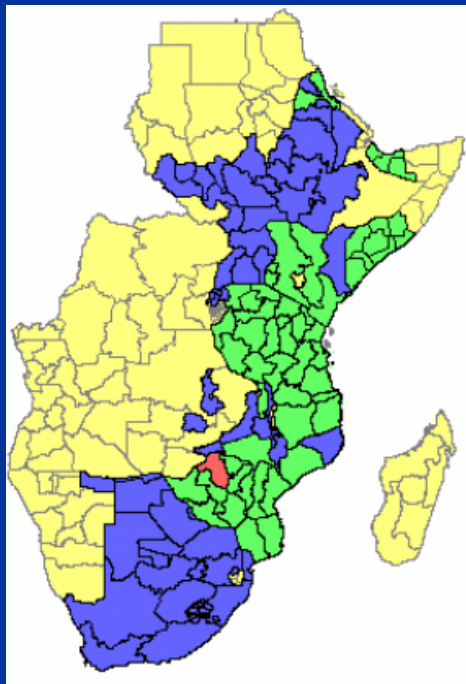
-the main species of concern
-the risks posed by insect pest movement
-how different food aid packaging and procurement arrangements can affect the risks, and
-what arrangements WFP have in place to minimise these risks.



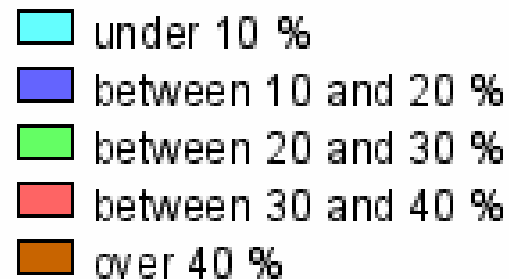
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Pest arthropods in food aid

Post harvest pests feed on crops at physiological maturity in the field and through the post harvest chain.



**Postharvest
% weight losses
(2007)**



Maize

Post Harvest Losses Information System

<http://www.phlosses.net>

Pest arthropods in food aid contd

200 insect species are found in durable store products, but only about 20 species are common. Most species are beetles or moths, but also psocids and even mites.

Beetles



Moths



- Most species already distributed by trade throughout
- warm and tropical regions of the world, but
- Climate change could alter ranges

Pest arthropods in food aid contd

Pests can be divided into

- regulated pests, and
- unregulated pests

Regulated (Quarantine pests)

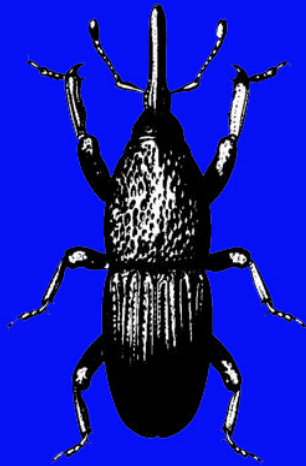
A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled (IPPC ISPM No. 5)



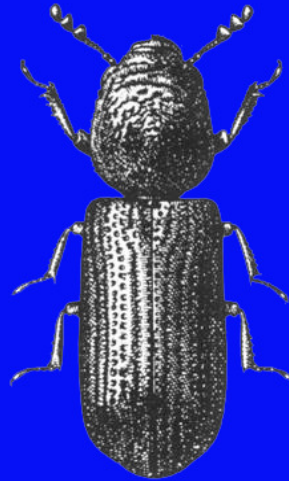
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Pest arthropods in food aid contd

Insect pests attacking whole grains (lary pests)



Sitophilus
granarius



Rhyzopertha
dominica



Zabrotes
subfasciatus



Adult *Sitophilus*
emerging from a
wheat grain

Risks – movement of controlled pests



Trogoderma granarium



Prostephanus truncatus

Risks – movement of pesticide resistance

Resistance* to

➤ Insecticides



➤ Fumigants - phosphine



- If resistance moved then needs to be maintained by high usage and nearly effective treatments but these conditions also generate resistance *de novo*.
- A potential hazard but not a high phytosanitary risk

* **FAO Global Survey – Pesticide Susceptibility of Stored Grain Pests 1976**

Food aid commodities that could carry arthropod pests

- Whole cereal grains and pulses



Unlined open-weave bags also in bulk

- Milled cereal products – CSB, WSB, MM



Multilayer paper sacks with polythene liners, sealed.

- High energy biscuits/instant noodles



Cellophane and foil packs

Precautions against movement of pests

WFP observes national requirements

- All grain products in bulk or in open weave bags have a valid fumigation certificate.
- Cargoes inspected at loading by an independent superintending company to ensure freedom from infestation and conformity to phytosanitary regulations of destination.
- Cargoes are subject to local inspection at arrival to ensure conformity with regulations
- Investigation of any subsequent reports of infestation
- Procedure the same whether emergency or routine

Precautions against movement of pests contd

Geographical movements of food aid

➤ **Trans-continental**

- in kind donations from developed countries
- procurement from developing countries

➤ **Regional/local**

- procured locally for local distribution
- procured locally for regional distribution

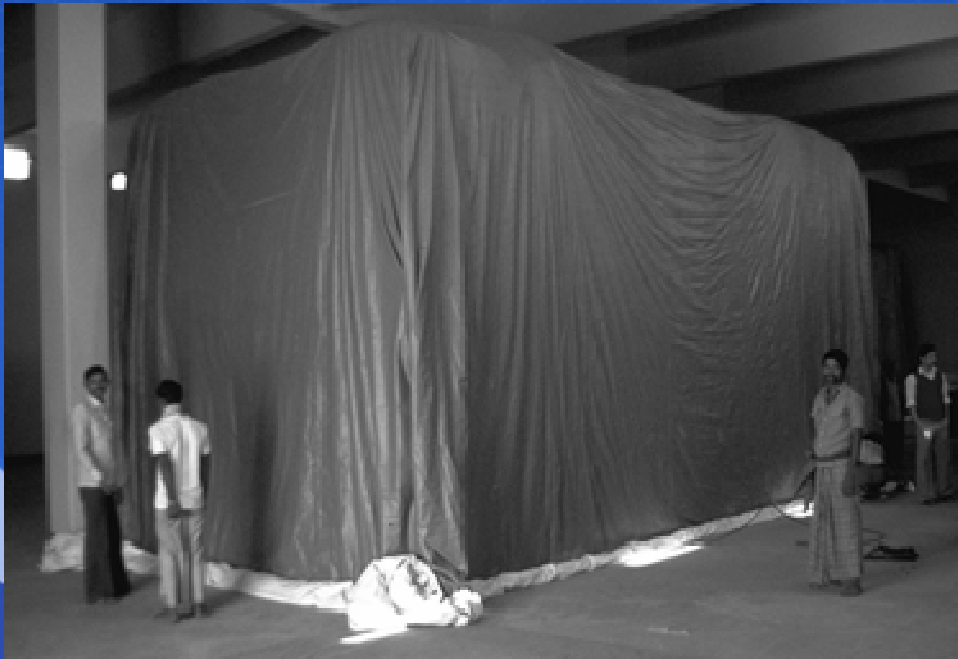
➤ **Food moved through several countries**

This can be helped by harmonised phytosanitary requirements e.g. KEPHIS regulations accepted by countries neighbouring Kenya

Precautions against movement of pests contd

WFP pest control operations – in country

- Phosphine fumigation to eliminate insects/mites
- Insecticide spray treatments as hygiene treatments



Phosphine Fumigation

Contractors work to WFP
Standard Operating Procedure

- Min 2g gas/tonne
- Min. 5 days duration
- Min. 150 ppm gas on day 5

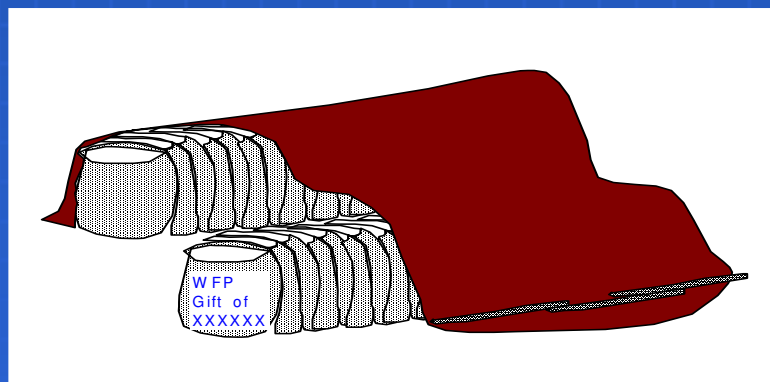


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Precautions against movement of pests contd

Special arrangements of the fumigation of blended foods

- Faulty bag-sealing resulted in consignments arriving with insect infestation (*Tribolium castaneum*)
- Bags balanced upright and opened to allow successful fumigation under gastight sheets



- After fumigation blended foods were sifted to remove insect bodies
- Bags were then resealed and distributed

Summary

- WFP observes national phytosanitary regulations
- Superintending companies check food aid shipments for any signs of infestation
- Where relevant, food aid shipments are accompanied by a valid fumigation certificate
- WFP expects its fumigation contractors to follow approved SOPs to ensure successful treatments
- WFP investigates any claims in relation to food infestation

