



## agriculture, land reform & rural development

Department:  
Agriculture, Land Reform and Rural Development  
REPUBLIC OF SOUTH AFRICA

### **Final Phytosanitary workplan for the importation of *Persea* spp. (Hass, Pinkerton and Fuerte varieties of avocado) fresh fruit from Tanzania to South Africa**

#### **1. Additional declaration on the phytosanitary certificate:**

- 1.1 The country of production is free from pests listed in Annex 2.
- 1.2 The fruit in this consignment is at the maturity levels stipulated in Table 2 of Annex 1.
- 1.3 Fruit in this consignment were inspected and found free from *Aleurodicus dispersus*, *Bactrocera dorsalis*, *Zeugodacus cucurbitae*, *Ceratitis fasciventris*, *Ceroplastes ceriferus*, *Ceroplastes floridensis*, *Icerya aegytiaca*, *Maconellicoccus hirsutus* and *Paracoccus marginatus*.
- 1.4 The fruit have been produced and packed according to the *Bactrocera dorsalis* and *Zeugodacus cucurbitae* risk mitigation measures as prescribed in Annex 1.

#### **2. Registration of Production Sites, Pack houses and Storage Facilities**

- 2.1 Avocado fruit for export to South Africa shall originate from production sites, pack houses and storage facilities that are approved and registered annually by the National Plant Protection Organization (NPPO) of Tanzania.
- 2.2 The list/database of the registered facilities that have been approved for export of avocado fruit to South Africa shall contain the following information:
  - 2.2.1 Name and registration number/code of each Production Site, and the area in which the production site is situated.
  - 2.2.2 List/database of the approved pesticide/fungicide applications used in each production site as part of its Integrated Pest Management (IPM) programme.
  - 2.2.3 Name and registration number/code of each pack house.
  - 2.2.4 Name and registration number/code of each storage facility.
- 2.3 The list/database of the registered facilities that have been inspected, approved and registered by the NPPO of Tanzania for the exportation of avocado fruit to

South Africa shall be made available to the Department of Agriculture, Land Reform and Rural Development (DALRRD) annually. The NPPO of Tanzania shall send the list/database of registered facilities to the DALRRD at least four weeks prior to the departure of the first consignment. The DALRRD shall assess the list/database and the approved facilities will be published on the DALRRD website.

- 2.4 The NPPO of Tanzania shall ensure that avocado fruit for export to South Africa shall only originate from production sites which comply with this phytosanitary work plan.

### **3. Pre-harvest good agricultural practices, pest management programmes and general surveillance**

- 3.1 Monitoring for pests shall be conducted by the NPPO of Tanzania regularly in the Production Sites destined for export to South Africa. Should new potential quarantine pests be detected that are not listed in Addendum A, and associated with *Persea* spp., the NPPO of Tanzania shall immediately notify the DALRRD for appropriate phytosanitary action to be taken. The DALRRD shall then notify the NPPO of Tanzania of any phytosanitary measures to be implemented and subsequent changes shall be made to the quarantine pests list in the Phytosanitary Work Plan for *Persea* spp. importation from Tanzania.

- 3.2 Fruit fly monitoring shall be initiated at least 3 months before harvesting OR when the crop for export to South Africa starts to flower as fruit flies are only a risk when the fruits are in season and, this shall continue through until after the completion of harvest.

- 3.3 The owner of the production site will maintain the surveillance data and submit a copy to the NPPO of Tanzania on quarterly basis and the NPPO of Tanzania will regularly monitor to ensure that the surveillance data are maintained. Trapping, pest control, inspections and other relevant records shall be made available to the DALRRD for review upon request.

- 3.4 Culled and fallen fruits will be buried, destroyed, or removed from the production site at least twice a week by producers.

### **4. Post-harvest measures**

- 4.1 Fruit shall be appropriately inspected, packed, stored and transported, so as to safeguard against consignment contamination with quarantine pests of concern to South Africa and to ensure that the level of maturity is according to Table 2 of Annex 1.

- 4.2 During harvest and packing of fruit, growers shall avoid bruising the fruit.

- 4.3 Rejected or over-ripe fruit shall be removed from the packing area and disposed of at the end of each day.

- 4.4 Post-harvest inspections shall be conducted according to the ISPM 31: *Methodologies for sampling consignments* (FAO, 2008). This should be able to identify with at least 95% reliability; a level of infection of 5% or above.
- 4.5 Should any quarantine pest of concern be detected; the consignment shall be rejected and not exported to South Africa.
- 4.6 Fruit shall be free from leaves and plant debris.
- 4.7 Only symptomless fruit shall be packed for export to South Africa.
- 4.8 The registered pack house(s) and storage facility(ies) shall be maintained clean, free of pests, soil and plant debris; safeguarded and equipped to avoid fruit contamination.
- 4.9 The packaging material for avocado fruit destined for South Africa shall be new and clean cardboard boxes/cartons or plastic crates.
- 4.10 No packaging material of plant origin, including straw, shall be used.
- 4.11 Should wood packaging material be used, it shall comply with ISPM 15: *Regulation of wood packaging material in international trade* (FAO, 2009).
- 4.12 Avocado for export to South Africa shall be inspected and certified by the NPPO of Tanzania, and shall be maintained in secure storage to prevent mixing with Avocado for export to other destinations or the domestic market and kept in secure storage until export.
- 4.13 The NPPO of Tanzania shall ensure that pack houses have a defined traceability system to the approved farms for exports to South Africa by maintaining the integrity of lots.

## **5. Labelling**

- 5.1 Each carton (box) of Avocado fruit shall be marked in English with correct and accurate information as indicated in Annex 4.

## **6. Phytosanitary regulation**

- 6.1 An import permit is required in terms of the Agricultural Pests Act, 1983 (Act No. 36 of 1983) and associated Regulations R.111 of 27 January 1987 as amended.

## **7. Phytosanitary certification**

- 7.1 A Phytosanitary Certificate shall be issued by the NPPO of Tanzania prior to shipment. Entry of the consignment to South Africa shall be subject to the availability of the original Phytosanitary Certificate. A Phytosanitary Certificate

- shall only be issued for Avocado fruit that meet these phytosanitary requirements.
- 7.2 Prior to shipment of the first consignment of each season the NPPO of Tanzania shall send a void sample phytosanitary certificate to the DALRRD.
- 8. Phytosanitary inspection on arrival**
- 8.1 Once a shipment of avocados arrives at the designated port of entry, the DALRRD shall examine the consignment, relevant documents and markings.
- 8.2 Any consignment with certification that does not conform to the specifications set out in this phytosanitary workplan shall be rejected.
- 8.3 Upon arrival of the consignment at the port of entry, a representative sample shall be drawn and inspected for all quarantine pests listed in Annex 3 and suspect fruit shall be dissected to determine the status of infestation.
- 8.4 Should pests or symptoms of infection be found, the samples shall be sent for laboratory identification, and the shipment shall be detained pending the result of laboratory identification. The DALRRD shall notify the NPPO of Tanzania of such interception immediately.
- 8.5 Should any of the quarantine pests in Annex 2 be detected on arrival, the consignment shall be rejected and the DALRRD shall immediately notify the NPPO of Tanzania in accordance with the notification procedures outlined in ISPM 13: *Guidelines for the notification of non-compliance and emergency action* (FAO, 2001). The production site shall then be suspended while an investigation is carried out by the NPPO of Tanzania. The DALRRD and the NPPO of Tanzania shall consult and implement corrective measures as deemed necessary. Fruit certified for South Africa prior to the date of suspension and which are already en route shall remain eligible for export. Such consignments shall be detained, inspected and a sample shall be taken and laboratory tests conducted for the quarantine pests in Annex 2.
- 8.6 Should *Aleurodicus dispersus*, *Bactrocera dorsalis*, *Zeugodacus cucurbitae*, *Ceratitis fasciventris*, *Ceroplastes ceriferus*, *Ceroplastes floridensis*, *Icerya aegytiaca*, *Maconellicoccus hirsutus* and *Paracoccus marginatus* be detected on arrival, the consignment shall be rejected in accordance with the relevant section of the Agricultural Pests Act, 1983 (Act No. 36 of 1983) and the DALRRD will immediately notify the NPPO of Tanzania.
- 8.7 If a live specimen of *Bactrocera dorsalis* and *Zeugodacus cucurbitae* is detected during phytosanitary inspection upon arrival, the export of Avocados from Tanzania shall be suspended immediately. The DALRRD shall immediately notify the NPPO of Tanzania. The DALRRD and the NPPO of Tanzania shall consult and implement corrective measures as deemed necessary.
- 8.8 Should any quarantine pests of concern to South Africa be detected, the consignment/lot shall be rejected.

- 8.9 The detection of any quarantine pest not listed in Addendum A shall result in a review of these phytosanitary import requirements to ensure that phytosanitary measures provide the appropriate level of phytosanitary protection for South Africa.
- 8.10 The importer is responsible for all costs relating to disposal, removal or rerouting, including costs incurred by the DALRRD to monitor the action taken.

**9. Visit by the DALRRD**

- 9.1 As part of initial market access, the DALRRD shall send quarantine experts to the relevant Avocado producing areas in Tanzania to review the production practices.
- 9.2 After programme initiation, when necessary and agreed upon by both sides (i.e any significant changes in pest status and/or detections of quarantine pests on arrival), the DALRRD may send quarantine officials to Tanzania to conduct on-site inspections.
- 9.3 Based on the official documents and technical information provided by the NPPO of Tanzania and the report of the South African experts, the DALRRD may approve resumption of this programme.

**ANNEX 1: SYSTEMS APPROACH FOR THE MANAGEMENT OF *BACTROCERA DORSALIS* AND *ZEUGODACUS CURCUBITAE* ON AVOCADO FRUIT FROM TANZANIA TO SOUTH AFRICA**

The following pre- and post-harvest practices reflect the current system for risk management overseen by the NPPO of Tanzania, employed by producers of Avocado to be imported to South Africa:

**TABLE 1. OVERVIEW OF THE SYSTEM FOR THE COMMERCIAL PRODUCTION AND EXPORT OF AVOCADO FROM TANZANIA TO SOUTH AFRICA**

ACTIVITIES	OUTCOMES
<p><b>Pre-Harvest</b></p> <ul style="list-style-type: none"> <li>• In-field pest control activities</li> <li>• Good Agricultural Practice (GAP).</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced pre-harvest pest prevalence.</li> </ul>
<ul style="list-style-type: none"> <li>• Control of false codling moth (<i>Thaumatotibia leucotreta</i>).</li> <li>• Removal and burying of avocado fruit damaged by <i>Thaumatotibia leucotreta</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• To avoid infestation of <i>Bactrocera dorsalis</i> and <i>Zeugodacus cucurbitae</i></li> </ul>
<ul style="list-style-type: none"> <li>• <i>Bactrocera dorsalis</i> and <i>Zeugodacus cucurbitae</i> control programme including: <ul style="list-style-type: none"> <li>a) seven-day cycle field/orchard sanitation infestations</li> <li>b) application of insecticidal protein bait throughout the production cycle or Bait application technique (BAT)</li> <li>c) male annihilation technique (MAT) by application of insecticidal male lures and Cue lures throughout the production season</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Reduced population of <i>Bactrocera dorsalis</i> and <i>Zeugodacus cucurbitae</i></li> </ul>
<p><b>Post-Harvest</b></p> <ul style="list-style-type: none"> <li>• Phytosanitary inspection</li> </ul>	<ul style="list-style-type: none"> <li>• Inspection of fruit and removal of external arthropod pests or infested/infected fruit or punctured/cracked fruit.</li> </ul>

<p><b>Regulatory/Official</b></p> <ul style="list-style-type: none"> <li>Phytopsanitary inspection and certification of consignments.</li> </ul>	<ul style="list-style-type: none"> <li>Certification by the NPPO of Tanzania that consignments are free from regulated pests.</li> </ul>
<ul style="list-style-type: none"> <li>Post-inspection product security</li> </ul>	<ul style="list-style-type: none"> <li>Certification by the NPPO of Tanzania that fruit in the consignment (s) are of the varieties Pinkerton, Fuerte and/or Hass</li> </ul>
<ul style="list-style-type: none"> <li>DALRRD inspection of documentation and consignment on arrival in South Africa</li> <li>Non-conformance contingencies</li> </ul>	<ul style="list-style-type: none"> <li>Prevention of post-treatment infestation of consignments by regulated pests e.g. pest-proof packaging.</li> </ul>
<ul style="list-style-type: none"> <li>Pathway monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Verification that the phytosanitary import requirements have been met.</li> <li>Treat/re-ship/destroy non-conforming consignment.</li> </ul>

## CULTIVARS

- Pinkerton, Fuerte and Hass

## PRE-HARVEST ACTIVITIES

### a) In-field pest control practices

- Tanzanian Avocado growers shall utilize pest control measures to reduce pre-harvest pest prevalence in commercially produced Avocado orchards for export to other countries.
- These measures include a *Bactrocera dorsalis* and *Zeugodacus cucurbitae* control programme., and compliance with Good Agricultural Practices (GAPs) as outlined below.

## b) Good Agricultural Practices

- The GlobalGAP standard for Avocado production requires training programmes for farmers and provincial government representatives' safe use of agri-chemicals, on-farm recording of fertilizer applications and crop protection products, inventory, sales, keeping receipts of input purchases and sales record-keeping, and safe fruit handling.
- The cultural control practices to be undertaken include removal/suppression of weeds and fallen fruit which act as reservoirs for pests. Avocado fruit damaged by *Thaumatotibia leucotreta* shall be removed and buried or destroyed.

## c) *Bactrocera dorsalis* and *Zeugodacus cucurbitae* control programme

- A specific programme shall be in place for *Bactrocera dorsalis* and *Zeugodacus cucurbitae* in Tanzania and should include surveillance to detect and determine species prevalence, and infestation rates.
- The programme shall be maintained by the NPPO of Tanzania during Avocado production in the selected production areas
- The surveillance programme shall incorporate trapping using protein bait and methyl eugenol, Avocado orchard surveys, periodic random and targeted cutting of fruit collected from orchards and local markets.
- A protein bait spray and insecticide shall be applied in the orchards for *Bactrocera dorsalis* and *Zeugodacus cucurbitae* control (Table 1).

## POST-HARVEST ACTIVITIES

### a) Maturity levels

**Table 2. Maturity levels of Avocado and cultivars for export to South Africa**

VARIETY	MATURITY LEVEL
Pinkerton	Hard, unripe. Minimum 20% fruit dry matter.
Fuerte	Hard, unripe. Minimum 20% fruit dry matter.
Hass	Hard, unripe. Minimum 23% fruit dry matter

The phytosanitary risk to 'greenskins' "Pinkerton" and "Fuerte" and the 'black-skinned' "Hass" by *B. dorsalis* and *B. cucurbitae* is negligible under standard export conditions (Table 2).

## 1. RISK MANAGEMENT MEASURES AND PHYTOSANITARY PROCEDURES (Table 1)

### 1.1. Management damaged fruits/ infested fruit by external feeders



- Fruit with punctures/cracks or fruit pierced or damaged by arthropods shall not be packed for export to South Africa.

### **1.2. Management of *Bactrocera dorsalis* and *Zeugodacus cucurbitae***

- The production site control programme for *B. dorsalis* and *Z. cucurbitae* shall include an Integrated Pest Management (IPM) programme using appropriate, effective and compatible measures at critical stages of development of the pest and crop.
- Population monitoring can be based on production site inspections and forecasts of infestations.
- Information pertaining to the production site control programme for *B. dorsalis* and *Z. cucurbitae* shall be made available to the DALRRD on request (Table 1).

### **1.3. Supporting operational maintenance systems and verification of phytosanitary status**

- A system of operational procedures shall be in place to ensure that the phytosanitary status of Avocado from Tanzania is maintained and verified during the process of production and export to South Africa.
- The proposed system of operational maintenance for the production and export of Avocado from Tanzania to South Africa consists of:
  - ✓ pre-export inspection by the NPPO of Tanzania;
  - ✓ phytosanitary certification by the NPPO of Tanzania; and
  - ✓ on-arrival quarantine inspection by the DALRRD in South Africa.

#### **A. Pre-export inspection and remedial action by the NPPO of Tanzania**

- ✓ The NPPO of Tanzania shall conduct official visual inspection using a sampling scheme able to identify with at least 95% reliability a level of infection of 5% or above in accordance with ISPM No 31.

#### **B. Phytosanitary certification by the NPPO of Tanzania**

- ✓ Before a phytosanitary certificate is issued, the NPPO of Tanzania shall conduct a phytosanitary inspection.

#### **C. On-arrival quarantine inspection**

- ✓ On arrival in South Africa, each consignment shall be inspected by the DALRRD.

**ANNEX 2: QUARANTINE PESTS OF FRESH AVOCADO (*PERSEA AMERICANA*)  
FRUIT NOT OCCURRING IN TANZANIA**

- Fungi: *Colletotrichum fructicola*  
*Colletotrichum godetiae*  
*Pestalotiopsis clavispora*
- Viroid: Potato spindle tuber viroid
- Mites: *Eotetranychus sexmaculatus* [Acari]  
*Oligonychus biharensis* [Acari]  
*Oligonychus perseae* [Acari]  
*Oligonychus punicae* [Acari]  
*Oligonychus yothersi* [Acari]  
*Tegolophus myersi* [Acari]  
*Tetranychus tumidus* [Acari]
- Insects:
- Amorbia cuneana* [Tortricidae]  
*Amorbia emigratella* [Tortricidae]  
*Anastrepha fraterculus* [Tephritidae]  
*Anastrepha ludens* [Tephritidae]  
*Anastrepha serpentina* [Tephritidae]  
*Anastrepha striata* [Tephritidae]  
*Argyotaenia citrana* [Tortricidae]  
*Bactrocera aquilonis* [Tephritidae]  
*Bactrocera carambolae* [Tephritidae]  
*Bactrocera facialis* [Tephritidae]  
*Bactrocera jarvisi* [Tephritidae]  
*Bactrocera passiflorae* [Tephritidae]  
*Bactrocera tryoni* [Tephritidae]  
*Conotrachelus aquactae* [Curculionidae]  
*Conotrachelus perseae* [Curculionidae]  
*Cryptaspasma perseana* [Tortricidae]  
*Crypticerya multicatrices* [Margarodidae]  
*Dysmicoccus grassii* [Pseudococcidae]  
*Epiphyas postvittana* [Tortricidae]  
*Gymnandrosoma aurantianum* [Tortricidae]  
*Heilipus lauri* [Curculionidae]  
*Heilipus pittier* [Curculionidae]  
*Heilipus perseae* [Curculionidae]  
*Kilifia acuminata* [Coccidae]  
*Parthenolecanium persicae* [Fabricius]  
*Planococcus minor* [Pseudococcidae]  
*Planococcus njalensis* [Pseudococcidae]  
*Pseudococcus cryptus* [Pseudococcidae]  
*Pseudococcus jackbeardsleyi* [Pseudococcidae]  
*Rastrococcus invadens* [Pseudococcidae]  
*Stenoma catenifer* [Oecophoridae]  
*Thrips palmi* [Thripidae]

**ANNEX 3: QUARANTINE PESTS OF FRESH AVOCADO FRUIT OCCURRING IN TANZANIA**

**Insects:** *Aleurodicus dispersus* [Aleyrodidae]  
*Bactrocera dorsalis* [Tephritidae]  
*Ceratitis fasciventris* [Tephritidae]  
*Ceroplastes ceriferus* [Coccidae]  
*Ceroplastes floridensis* [Coccidae]  
*Icerya aegytiaca* [Margarodidae]  
*Maconellicoccus hirsutus* [Pseudococcidae]  
*Paracoccus marginatus* [Pseudococcidae]  
*Zeugodacus cucurbitae* [Tephritidae]

**ANNEX 4: THE PACKING MARK**

**Country of origin**

**Production site name or its registered unique code**

**Packing facility name or its registered unique code**

For the Republic of South Africa

**ADDENDUM A: NATIONAL QUARANTINE PESTS OF AVOCADO FRESH FRUIT**

- Fungi: *Colletotrichum fructicola*  
*Colletotrichum godetiae*  
*Pestalotiopsis clavispora*
- Viroid: Potato spindle tuber viroid
- Mites: *Eotetranychus sexmaculatus* [Acari]  
*Oligonychus biharensis* [Acari]  
*Oligonychus perseae* [Acari]  
*Oligonychus punicae* [Acari]  
*Oligonychus yothersi* [Acari]  
*Tegolophus myersi* [Acari]  
*Tetranychus tumidus* [Acari]
- Insects: *Aleurodicus dispersus* [Aleyrodidae]  
*Amorbia cuneana* [Tortricidae]  
*Amorbia emigratella* [Tortricidae]  
*Anastrepha fraterculus* [Tephritidae]  
*Anastrepha ludens* [Tephritidae]  
*Anastrepha serpentina* [Tephritidae]  
*Anastrepha striata* [Tephritidae]  
*Argyotaenia citrana* [Tortricidae]  
*Bactrocera aquilonis* [Tephritidae]  
*Bactrocera carambolae* [Tephritidae]  
*Bactrocera dorsalis* (complex) including: *B. caryeae*, *B. kandiensis*, *B. occipitalis*, *B. pyrifoliae* [Tephritidae]  
*Bactrocera facialis* [Tephritidae]  
*Bactrocera jarvisi* [Tephritidae]  
*Bactrocera passiflorae* [Tephritidae]  
*Bactrocera tryoni* [Tephritidae]  
*Ceratitis fasciventris* [Tephritidae]  
*Ceroplastes ceriferus* [Coccidae]  
*Ceroplastes floridensis* [Coccidae]  
*Conotrachelus aquactae* [Curculionidae]  
*Conotrachelus perseae* [Curculionidae]  
*Cryptaspasma perseana* [Tortricidae]  
*Crypticerya multicatrices* [Margarodidae]  
*Dysmicoccus grassii* [Pseudococcidae]  
*Epiphyas postvittana* [Tortricidae]  
*Gymnandrosoma aurantianum* [Tortricidae]  
*Heilipus lauri* [Curculionidae]  
*Heilipus pittier* [Curculionidae]  
*Heilipus perseae* [Curculionidae]  
*Icerya aegytiaca* [Margarodidae]  
*Kilifia acuminata* [Coccidae]  
*Maconellicoccus hirsutus* [Pseudococcidae]  
*Paracoccus marginatus* [Pseudococcidae]  
*Parthenolecanium persicae* [Fabricius]  
*Planococcus minor* [Pseudococcidae]

*Planococcus njalensis* [Pseudococcidae]  
*Pseudococcus cryptus* [Pseudococcidae]  
*Pseudococcus jackbeardsleyi* [Pseudococcidae]  
*Rastrococcus invadens* [Pseudococcidae]  
*Stenoma catenifer* [Oecophoridae]  
*Thrips palmi* [Thripidae]  
*Zeugodacus cucurbitae* [Tephritidae]

## **ADDENDUM B: SUMMARY OF THE SYSTEMS APPROACH**

The components of the system approach are: a poor host status of three avocado cultivars (Pinkerton, Fuerte and Hass); undertaking a sanitary standard for avocado production; implementing a fruit fly (*Bactrocera dorsalis* and *Zeugodacus cucurbitae*) Integrated Pest Management (IPM) programme; farm monitoring audits; post harvest measures; port of exit inspections and certification as well as ensuring appropriate packing and labelling.

### **1. Poor host status of avocado cultivars**

- The NPPO of Tanzania shall certify only three cultivars for export to South Africa namely Pinkerton, Fuerte and Hass. The quarantine risk of the varieties due to fruit flies has been reported as negligible under standard export conditions in Tanzania. The fruits will be harvested at a mature hard stage

### **2. Sanitary standard for avocado production**

- This undertaking shall include training programmes for avocado growers and local extension staff on the safe use of agri-chemicals, on-farm recording of fertilizer applications and crop protection products, inventory, sales, keeping receipts of input purchases and sales record-keeping, and safe fruit handling.
- The growers shall also be trained in orchard sanitation that entails removal/suppression of weeds and fallen fruits at avocado production sites which act as reservoirs for pests. Avocado fruit damaged by *Thaumatotibia leucotreta* and other pests should be removed on a weekly basis and appropriately disposed off by burying or destroying the infested fruit.

### **3. Implementing a fruit fly (*B. dorsalis* and *Z. cucurbitae*) Integrated Pest Management programme**

The production site control programme for *B. dorsalis* and *Z. cucurbitae* shall have an IPM and monitoring programme using appropriate, effective and compatible measures at critical stages of development of the pest and crop. The specific programme which shall be in place for managing *B. dorsalis* and *Z. cucurbitae* will include:

- The NPPO of Tanzania led monitoring surveillance to detect and determine species prevalence, and infestation rates, at least for three months before the start of the export season using methyl eugenol and other locally available fruit fly management products.
- Mass trapping using locally available fruit fly trapping devices such as methyl eugenol traps and protein baits, throughout the avocado production season
- Upholding orchard sanitation
- Training and awareness creation to growers and extension staff on fruit fly management
- Control of false codling moth (*Thaumatotibia leucotreta*).
- Removal and burying or destruction of avocado fruit damaged by *Thaumatotibia leucotreta* to avoid infestation by *Bactrocera dorsalis* and/or *Zeugodacus cucurbitae*.
- Information pertaining to the production site control programme for *B. dorsalis*

shall be made available to the DALRRD upon request

#### 4. Farm monitoring audits

- Monitoring for pests shall be regularly audited by the NPPO of Tanzania in the Production Sites destined for export to South Africa. Should new potential quarantine pests be detected that are not listed in Addendum A, and associated with *Persea* spp., the NPPO of Tanzania shall immediately notify the DALRRD for appropriate phytosanitary action to be taken. The DALRRD shall then notify the NPPO of Tanzania of any phytosanitary measures to be implemented and subsequent changes shall be made to the quarantine pests list in the Phytosanitary Work Plan for *Persea* spp. importation from Tanzania.
- Fruit fly monitoring shall be initiated at least three months before harvest begins and will continue through until after the completion of harvest.
- The NPPO of Tanzania shall keep records of fruit fly finds for each trap. Trapping, pest control, inspection and other relevant records shall be made available to the DALRRD for review upon request.
- Culled and fallen fruits were buried, destroyed, or removed from the production site twice every week.

#### 5. Post-harvest measures

- Fruit shall be appropriately inspected, packed, stored and transported, so as to safeguard against consignment contamination with quarantine pests of concern to South Africa and to ensure that the level of maturity is as stipulated.
- During harvest and packing of fruit, exporters shall avoid bruising the fruit.
- Rejected or over-ripe fruit shall be removed from the packing area and disposed of at the end of each day.
- The NPPO of Tanzania shall ensure that Pack houses have a defined traceability system on the approved farms for exports to South Africa by maintaining the integrity of lots. The registered pack house(s) and storage facility(ies) shall be maintained clean, free of pests, soil and plant debris; safeguarded and equipped to avoid fruit contamination.

#### 6. Port of exit Inspections and certification

- The NPPO of Tanzania shall conduct post-harvest inspections according to the ISPM 31: *Methodologies for sampling consignments* (FAO, 2008). This should be able to identify with at least 95% reliability a level of infection of 5% or above.
- Should any quarantine pest of concern be detected; the consignment shall be rejected for export to South Africa. The NPPO of Tanzania shall ensure that the fruit are free from leaves and plant debris, bruises, cracks or pest/disease symptoms.
- Avocado for export to South Africa shall be inspected and certified by the NPPO of Tanzania, and shall be maintained in secure conditions to prevent mixing with Avocado for export to other destinations or the domestic market and kept in secure storage until export. A Phytosanitary Certificate shall be issued by the NPPO of Tanzania for avocado consignments that meet all the phytosanitary requirements for South Africa prior to shipment. Additional declarations on the phytosanitary certificate is outlined in paragraph 1 of the phytosanitary workplan.



Prior to shipment of the first consignment of each season, the NPPO of Tanzania shall send a void sample phytosanitary certificate to the DALRRD.

## **7. Packing and Labelling**

- The packaging material for avocado fruit destined for South Africa shall be new and clean cardboard boxes/cartons or plastic crates. No packaging material of plant origin, including straw, shall be used. Should wood packaging material be used, it shall comply with ISPM 15: *Regulation of wood packaging material in international trade* (FAO, 2009).
- Each carton (box) of avocado fruit shall be marked in English with correct and accurate information as indicated