



## **Phytosanitary work plan for the importation of *Persea* spp. fresh fruit from the Kingdom of Eswatini 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 on Annex 5.
- 1.3 Fruit in this consignment was inspected and found free from *Bactrocera dorsalis*.
- 1.4 The fruit has been produced and packed according to the *Bactrocera dorsalis* and 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 Organisation (NPPO) of Eswatini.
- 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) program.
  - 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 Eswatini for the exportation of avocado fruit to South Africa shall be made available to the Department of Agriculture, Rural development and Land Reform (DALRRD) annually. The NPPO of Eswatini shall send the list 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 Eswatini shall ensure that avocado fruit for export to South Africa shall only originate from production sites which comply with this phytosanitary workplan.

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

3.1 Monitoring for pests shall be conducted by the NPPO of Eswatini 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 Eswatini shall immediately notify the DALRRD for appropriate phytosanitary action to be taken. The DALRRD shall then notify the NPPO of Eswatini of any phytosanitary measures to be implemented and subsequent changes shall be made to the quarantine pest list in the Phytosanitary Workplan for *Persea* spp. importation from Kingdom of Eswatini.

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 the completion of harvest.

3.3. The NPPO of Eswatini 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.

3.4 Culled and fallen fruits will be buried, destroyed, or removed from the production site at least twice a week by the 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 Annex 5.

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 0, 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).
- 4.1.2 Avocado for export to South Africa shall be inspected and certified by the NPPO of Eswatini, 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 NPPO of Eswatini shall assure 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 Phytosanitary Certificate shall be issued by the NPPO of Eswatini 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 meets these phytosanitary requirements.
- 7.2 Prior to shipment of the first consignment of each season the NPPO of Eswatini shall send 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 work plan 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 Eswatini 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 Eswatini 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 Eswatini. The DALRRD and the NPPO of Eswatini 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 If a live specimen of *Bactrocera dorsalis* is detected during phytosanitary inspection upon arrival, the consignment shall be returned or destroyed; and the export of Avocados from Kingdom of Eswatini shall be suspended immediately. The DALRRD shall immediately notify the NPPO of Eswatini. The DALRRD and the NPPO of Eswatini shall consult and implement corrective measures as deemed necessary.
- 8.7 Should any quarantine pests of concern to South Africa be detected, the consignment/lot shall be rejected.
- 8.8 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.
- 8.9 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 sites in Kingdom of Eswatini to review and pre-test the quarantine status in cooperation with the NPPO of Eswatini, including pest surveillance system of quarantine management practices and the phytosanitary condition of the production areas, orchards, packing houses and storage facilities.
- 9.2 After program 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 Kingdom of Eswatini to conduct on-site inspections.

9.3 Based on the official documents and technical information provided by the NPPO of Eswatini and the report of the South African experts, the DALRRD may approve resumption of this program.

## ANNEX 1: SYSTEMS APPROACH FOR THE MANAGEMENT OF *BACTROCERA DORSALIS* ON AVOCADO FRUIT FROM KINGDOM OF ESWATINI TO SOUTH AFRICA

The following pre- and post-harvest practices reflect the current system for risk management overseen by the NPPO of Eswatini, 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 KINGDOM OF ESWATINI 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>.</li> </ul>
<ul style="list-style-type: none"> <li>• <i>Bactrocera dorsalis</i> 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 throughout the production season with the placement of <i>Bactrocera dorsalis</i> respondent insecticidal male lures or the male annihilation technique(MAT)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Reduced population of <i>Bactrocera dorsalis</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>Phyosanitary inspection and certification of consignments.</li> </ul>	<ul style="list-style-type: none"> <li>Certification by the NPPO of Eswatini 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 Eswatini 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 has 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

- Kingdom of Eswatini Avocado growers shall utilize pest control measures to reduce pre-harvest pest prevalence in commercially produced Avocado for export to other countries.
- These measures include a *Bactrocera dorsalis* control programme. , and compliance with Good Agricultural Practice (GAP) as outlined below.

## b) Good Agricultural Practice

- The GlobalGAP standard for Avocado production requires training programmes for farmers and provincial government representative's 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 such as removal/suppression of weeds and fallen fruit which act as reservoirs for pests. Avocado fruit damaged by *Thaumatotibia leucotreta* shall be removed and buried.

## c) *Bactrocera dorsalis* control programme

- A specific programme shall be in place for *Bactrocera dorsalis* in Kingdom of Eswatini and must include surveillance to detect and determine species composition, and infestation rates.
- The programme shall be maintained by the NPPO of Eswatini during the 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* 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	Green-skinned
Fuerte	Green-skinned
Hass	Black-skinned

The phytosanitary risk to 'greenskins' "Pinkerton" and "Fuerte" and the 'black-skinned' "Hass" by *B. dorsalis* 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 damaged by external or surface-feeding arthropods shall not be packed for export to South Africa.



## 1.2. Management of *Bactrocera dorsalis*

- The production site control program for *B. dorsalis* shall include an Integrated Pest Management (IPM) program using appropriate, effective and compatible measures at critical stages of development of the pest and crop.
- Population monitoring shall be based on production site inspections and forecasts of infestations.
- Information pertaining to production site control program for *B. dorsalis* shall be made available to 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 Kingdom of Eswatini 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 Kingdom of Eswatini to South Africa consists of:
  - ✓ pre-export inspection by the NPPO of Eswatini;
  - ✓ phytosanitary certification by NPPO of Eswatini ; and
  - ✓ on-arrival quarantine inspection by DALRRD in South Africa.

### A. Pre-export inspection and remedial action by the NPPO OF ESWATINI

- ✓ The NPPO of Eswatini shall conduct official visual inspection using a sampling scheme able to identify with at least 95% reliability a level of infection of 0,5% or above in accordance with ISPM No 31.

### B. Phytosanitary certification by the NPPO OF ESWATINI

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

### C. On-arrival quarantine inspection

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

## ANNEX 2: QUARANTINE PESTS OF AVOCADO FRESH FRUIT NOT OCCURING IN KINGDOM OF ESWATINI

- Mites:
- Eotetranychus sexmaculatus* [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 cucurbitae* [Tephritidae]
  - Bactrocera facialis* [Tephritidae]
  - Bactrocera passiflorae* [Tephritidae]
  - Bactrocera tryoni* [Tephritidae]
  - Ceroplastes ceriferus* [Coccidae]
  - Ceroplastes floridensis* [Coccidae]
  - Conotrachelus aquactae* [Curculionidae]
  - Conotrachelus perseae* [Curculionidae]
  - Ephiphyas postvittana* [Tortricidae]
  - Heilipus lauri* [Curculionidae]
  - Heilipus pittier* [Curculionidae]
  - Heilipus perseae* [Curculionidae]
  - Icerya aegytiaca* [Margarodidae]
  - Kilifia acuminata* [Coccidae]
  - Maconellicoccus hirsutus* [Pseudococcidae]
  - Parthenolecanium persicae persicae* [Fabricius]
  - Planococcus minor* [Pseudococcidae]
  - Planococcus njalensis* [Pseudococcidae]
  - Pseudococcus cryptus* [Pseudococcidae]
  - Pseudococcus jackbeardsleyi* [Pseudococcidae]
  - Rastrococcus invadens* [Pseudococcidae]
  - Stenoma catenifer* [Oecophoridae]
  - Vinsonia stellifera* [Coccidae]
- Viroid:
- Potato spindle tuber

**ANNEX 3: QUARANTINE PESTS OF AVOCADO FRESH FRUIT OCCURING IN KINGDOM OF ESWATINI**

*Bactrocera dorsalis* [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

**ANNEX 5: MATURITY LEVELS OF AVOCADO FRUIT FOR EXPORT TO SOUTH AFRICA**

<b>VARIETY</b>	<b>MATURITY LEVEL</b>
Pinkerton	Green-skinned
Fuerte	Green-skinned
Hass	Black-skinned

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

- Mites: *Eotetranychus sexmaculatus* [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 cucurbitae* [Tephritidae]  
*Bactrocera dorsalis* [Tephritidae]  
*Bactrocera dorsalis* (complex) including: *B. caryeae*, *B. kandiensis*, *B. occipitalis*, *B. pyrifoliae* [Tephritidae]  
*Bactrocera facialis* [Tephritidae]  
*Bactrocera passiflorae* [Tephritidae]  
*Bactrocera tryoni* [Tephritidae]  
*Ceroplastes ceriferus* [Coccidae]  
*Ceroplastes floridensis* [Coccidae]  
*Conotrachelus aquactae* [Curculionidae]  
*Conotrachelus perseae* [Curculionidae]  
*Ephiphyas postvittana* [Tortricidae]  
*Heilipus lauri* [Curculionidae]  
*Heilipus pittier* [Curculionidae]  
*Heilipus perseae* [Curculionidae]  
*Icerya aegytiaca* [Margarodidae]  
*Kilifia acuminata* [Coccidae]  
*Maconellicoccus hirsutus* [Pseudococcidae]  
*Parthenolecanium persicae persicae* [Fabricius]  
*Planococcus minor* [Pseudococcidae]  
*Planococcus njalensis* [Pseudococcidae]  
*Pseudococcus cryptus* [Pseudococcidae]  
*Pseudococcus jackbeardsleyi* [Pseudococcidae]  
*Rastrococcus invadens* [Pseudococcidae]  
*Stenomoma catenifer* [Oecophoridae]  
*Vinsonia stellifera* [Coccidae]
- Viroid: Potato spindle tuber viroid