



# Oregon Blueberries to Korea

2023 Grower and Packer  
Information

April 7, 2023

# 2023 Updates

The phytosanitary certificate must contain the following two additional declarations:

“Fruits in this consignment are not infested with, *Argyrotaenia citrana*, *Choristoneura rosaceana*, *Grapholita packardi* and *Monilinia vaccinii-corymbosi*.”

AND

“The shipment was inspected and found free of Light Brown Apple Moth, *Epiphyas postvittana*.”



## 2023 Updates (cont.)

- Operational workplan – Revised March 13, 2023
- Operational guidelines – Revised March 31, 2023

# 2023 Updates (cont.) – On-site audit

APQA has been invited for an on site visit during the second week of August.





## 2022 Season

### Notices of Noncompliance – NNC's

- No pest interceptions!
- One NNC for non-compliance with sealing protocol
  - Rejected – sent to third country
  - Investigation

# 2020 was the sixth year of detections of orange tortrix in blueberries from Oregon

| Year | Number of pest detections | Pest identification | County of origin | Export Inspection Date                                  |
|------|---------------------------|---------------------|------------------|---|
| 2013 | 1                         | OT                  | Douglas          | July 31   |
| 2016 | 1                         | OT                  | Douglas          | June 17   |
| 2017 | 2*                        | OT (1)              | Marion           | July 5  |
| 2018 | 5                         | OT(3), CFW(2)       | Marion           | June 22(3);<br>June 29 (1)                              |
| 2019 | 1                         | OT                  | Marion           | July 12   |
| 2020 | 2                         | OT                  | Marion           | June 29<br>(ocean shipment)<br>July 8<br>(air shipment) |



So what did we learn about the  
2020 detection?



## OT Detections – Field situation

- A nearby field of caneberries (Rubus spp.), a preferred OT host, had been removed and replanted the previous fall/winter
- Migrating adults from that field likely contributed to the orange tortrix detection
- None of the trap catches exceeded the trap threshold for OT – the highest catch was 11 moths
- All other positive trap counts were in the single digits
- The climatic conditions of the 2020 season were especially favorable for a number of pests





# Reminders of things learned from previous detections

- It may be beneficial to target some scouting on edges of fields immediately bordering areas with preferred hosts and possible higher pressure areas
- Be aware of possible higher pressure areas outside of registered production fields
- Even when controls have been applied to obtain a low pest prevalence status in the production field, it may be difficult to obtain 100% control especially when using softer chemicals under continued high pest pressure situations
- Consider program implications of potential quarantine pest detections when making the decision to export blueberries from fields with higher pest pressures

# Improvement Measures that began with the 2019 Season

- Improvement measure will be continue to be implemented at three levels:
  - Program implementation
    - Mandatory training
  - Production field
    - Changes to trapping protocol
  - Packing facilities
    - Additional measures



# Mandatory training

- All new program participants MUST attend APHIS/ODA training before being approved to participate in the OR blueberries to Korea export program
- Training is also mandatory for all program participants involved in pest detections or other non-compliances the previous season

# Changes to Trapping Protocol – Response to Trap Catches Above Thresholds

Reminder: Trap Catch Thresholds:

- OT = 20 moths caught in any trap during any single week of the trapping survey
- OBLR = 20 moths caught in any trap during any single week of the trapping survey
- CFW = 2 moths caught in any trap during any single week of the trapping survey



# Response to Trap Catches Above Threshold During the Initial Month of Trapping

- During the initial month of trapping, if the trap catch threshold for OT or CFW is exceeded:
  - For two consecutive weeks
- OR
- In two or more traps during any week
  - These two conditions indicate increased pressure.
- Then a non-aerial application of a control targeting the relevant pest must be applied immediately **(before the next trap check)**

# Response to Trap Catches Above Threshold After Initial Lure Replacement

- If the **trap catch in any individual trap exceeds the trap threshold for OT or CFW** at any time after the initial lure replacement (required at the 4<sup>th</sup> trap check), then:
  - An intensified visual inspection must be conducted 6-8 days AFTER the date that the threshold was exceeded
  - If the grower wishes to harvest fruit before the intensified visual inspection is conducted, a non-aerial control must be applied

# Packing Facilities – Additional Measures

- Visual aids showing insect damage to blueberries must be posted in appropriate areas of the packing facility, such as at:
  - Sorting tables
  - QC stations
- Fruits will be tested upon arrival at the packing facility for larvae
- Packing facilities must have a designated area for fruit testing with good lighting and appropriate equipment and materials

## Additional Measures – Fruit testing

- Upon arrival at the packing facility, each load of fruit will be sampled and tested, using salt water (or sugar water) flotation method, to confirm freedom from OT, OBLR, and CFW larvae
- This procedure is the same as used to inspect for *Drosophila suzukii* (SWD) larvae)
- An example of the inspection process may be found in “*A Detailed Guide for Testing Fruit for the Presence of Spotted Winged Drosophila (SWD) Larvae*” located at: <https://catalog.extension.oregonstate.edu/em9096>



## Additional Measures – Fruit testing (cont.)

- A representative sample of fruit (about one quart or 1.5 lbs.) will be collected randomly from each load of fruit arriving at the packing facility.
- Each fruit sample will be subjected to either a salt or brown sugar water flotation test to confirm freedom from OT, OBLR and CFW larvae.
- The testing must be conducted by trained packing facility staff, and is subject to oversight/monitoring by regulatory officials

## Additional Measures – Fruit testing (cont.)

- The solution must be carefully inspected for larvae.
- Any larvae detected must be collected and provided to an APHIS approved regulatory official for identification, or confirmation of identification.

## Additional Measures – Fruit testing (cont.)

- Examples of solution composition follow:
  - Salt solution: Dissolve 1 cup of salt in one gallon of water.
  - Sugar solution: Dissolve 2.5 cups (650 gms) of brown sugar in one gallon of water. The resulting solution should have a brix reading of at least 15.
- The solution must be carefully inspected for larvae.

## Additional Measures – Fruit testing (cont.)

- Any larvae detected must be collected and provided to an APHIS approved regulatory official for identification, or confirmation of identification.
- The results of each fruit sample inspection must be documented on the form provided by APHIS (an equivalent document may be used if approved by APHIS).



## Additional Measures – Fruit testing (cont.)

- If any larvae of OT, OBLR or CFW is detected during this fruit sampling, fruit from that lot will not be eligible to pack for export to Korea.
- A copy of the inspection results confirming that all lots in the consignment were found to be free of larvae of OT, OBLR and CFW must be provided to ODA with the request for phytosanitary inspection.



# Review of Production Field Requirements

- Each registered production field must be identified with a unique code (referred to as the “grower lot”)
- The grower lot is made up of two parts:
  - The grower code (assigned by ODA)
  - The individual field number (assigned by the grower)
    - Field numbers shall consist of three digits, or three alpha-numeric characters.
- The grower lot number is used throughout the program to identify that specific production lot

# Example of Production Field Identification Code (Grower Lot)

- Grower Name:
  - Bodacious Blues
- ODA Assigned Grower Code:
  - 777
- Production Field:
  - Borderline Ranch
    - Field number assigned by grower: 100
- Blueberries grown by Bodacious Blues at their Borderline Ranch will be identified as:
  - **Grower Lot Number 777-100**



# Quarantine Pests Requiring Specific Mitigation Measures

- Pathogens:
  - *Monilinia vaccinii-corymbosi* (Mummy Berry)
- Insects:
  - *Argyrotaenia citrana* (Orange Tortrix)
  - *Choristoneura rosaceana* (Oblique Banded Leafroller)
  - *Grapholita packardi* (Cherry Fruitworm)

## Other Quarantine Pests of Concern

- ODA must be notified immediately if any of the following four quarantine pests are detected in Oregon blueberry production:
  - *Conotrachelus nenuphar* (plum curculio)
  - *Rhagoletis mendax* (blueberry maggot)
  - *Rhagoletis tabullaria* (white banded fruitfly)
  - *Acrobasis vaccinii* (cranberry fruitworm)

## Other Quarantine Pests of Concern

- The following four pests occur in Oregon but are also considered by Korea to be quarantine pests:
  - *Ericaphis fimbriata*\* (blueberry aphid)
  - *Ericaphis scammelli*\* (blueberry aphid)
  - *Hemiberlesia rapax* (Greedy scale)
  - *Leptocoris trivittatus* (Eastern Boxelder bug)

\* *New additions to the quarantine pest list in 2021*

# Official Field Inspections for Pathogens

- Official field inspections conducted by the Oregon Department of Agriculture (ODA) to certify absence of SOD are no longer required





# Low Pest Presence or Pest Freedom in Production Fields

- Low pest populations or pest freedom must be maintained in each production field for:
  - *Monilinia vaccinii-corymbosi* (Mummy Berry)
  - *Argyrotaenia citrana* (Orange Tortrix)
  - *Choristoneura rosaceana* (Oblique Banded Leafroller)
  - *Grapholita packardi* (Cherry Fruitworm)

# Confirmation of Low Pest Presence or Pest Freedom in Production Fields

- Monitoring and/or trapping surveys must be conducted by commercial pest consultants (PCAs) or ODA in each registered production field for :
  - Mummy berry disease
  - Orange Tortrix (OT)
  - Oblique Banded Leafroller (OBLR)
  - Cherry Fruitworm (CFW)

# Monitoring and Trap Survey Requirements

- Scouting (visual inspection) for mummy berry must be conducted:
  - During the growing season when fruit is beginning to size and prior to harvest
- Trap surveys and scouting for the presence of OT, OBLR and CFW must be conducted:
  - During the growing season from petal fall through harvest

# Recording Monitoring and Trap Survey Results

- Results must be recorded on the standard APHIS forms
- Copies of monitoring records, trap survey records, records of intensified visual inspection (if applicable) and pesticide application records (if applicable) must be provided to:
  - Packing facilities prior to packing fruit from that production field
  - APHIS and ODA when requested

# Monitoring Record for Mummyberry Showing Production Field Information

OREGON BLUEBERRIES TO KOREA  
SCOUTING RECORD FOR MUMMYBERRY

|   |   |       |  |
|---|---|-------|--|
| GROWER NAME: BODACIOUS BLUES                    |   | DATE: |  |
| GROWER CODE: 777                                | FIELD LOCATION: WEST VALLEY RANCH - 767 |       |  |
| DOES FIELD HAS HISTORY OF MUMMYBERRY INFECTION: |   |       |  |

**MONITORING OF SPRING GROWTH FOR MUMMYBERRY**

Inspect the spring growth of each of the specific site location(s) for evidence of primary infections on vegetative and floral growth • Within the designated area visit three sites. • At each of the three sites, inspect 10 bushes. These bushes should be spaced 3-5 plants apart and on both sides of the row, in order to cover a larger area at each site. • Inspect bushes for symptoms of shoot blight and browning along the major veins. Look for wilted, brown foliage and bent twig tips resembling shepherd's crook. Look for grayish green tufts of fungus associated with wilted foliage and blackened stems. Record number of infected shoots on each bush.

| Number of bush | Site 1 - Number of Infected shoots | Site 2 - Number of Infected shoots | Site 3 - Number of Infected shoots | Other Notes |
|----------------|------------------------------------|------------------------------------|------------------------------------|-------------|
| Bush 1         |                                    |                                    |                                    |             |
| Bush 2         |                                    |                                    |                                    |             |
| Bush 3         |                                    |                                    |                                    |             |
| Bush 4         |                                    |                                    |                                    |             |
| Bush 5         |                                    |                                    |                                    |             |
| Bush 6         |                                    |                                    |                                    |             |
| Bush 7         |                                    |                                    |                                    |             |
| Bush 8         |                                    |                                    |                                    |             |
| Bush 9         |                                    |                                    |                                    |             |
| Bush 10        |                                    |                                    |                                    |             |

**FRUIT MONITORING FOR MUMMYBERRY AFTER FRUIT HAS SIZED AND PRE-HARVEST**

|                         |                          |                      |
|-------------------------|--------------------------|----------------------|
| SCOUTING AFTER          | SCOUTING AT PRE-HARVEST: | EST. DATE OF HARVEST |
| FRUIT HAS SIZED: YES NO | YES NO                   |                      |

Monitor fruit as it sizes and immediately prior to harvest to determine whether there are mummyberry infections in the production field • Within the designated area visit three sites. • At each of the three sites, inspect 10 bushes. These bushes should be spaced 3-5 plants apart and on both sides of the row, in order to cover a larger area at each site. • Inspect at least 10 fruit clusters for discolored, shriveled fruit or for any evidence of mummyberry infection (such as early coloring of fruit) • Search the ground underneath the bushes and gently shake the bushes to look for any evidence of mummyberry infected fruit. Infected fruit shrivels and appears mummified as it develops; those "mummyberries" will drop to the soil. Record the number of fruit clusters with infected fruit (IFC) and/or bushes with damaged fruit (DF).

| Number of bush | Site 1-IFC | Site 1-DF | Site 2-IFC | Site 2-DF | Site 3-IFC | Site 3-DF | Other Notes |
|----------------|------------|-----------|------------|-----------|------------|-----------|-------------|
| Bush 1         |            |           |            |           |            |           |             |
| Bush 2         |            |           |            |           |            |           |             |
| Bush 3         |            |           |            |           |            |           |             |
| Bush 4         |            |           |            |           |            |           |             |
| Bush 5         |            |           |            |           |            |           |             |
| Bush 6         |            |           |            |           |            |           |             |
| Bush 7         |            |           |            |           |            |           |             |
| Bush 8         |            |           |            |           |            |           |             |
| Bush 9         |            |           |            |           |            |           |             |
| Bush 10        |            |           |            |           |            |           |             |

APHIS 04-04-12

Grower Code

Field Location

Grower Name



# Mummy Berry Requirements are determined by the history of the disease in the production field



**Previous season -  
Mummy Berry**

**Previous season- No  
Mummy Berry**



# Production Fields with History of Mummy Berry Infection

- A preventative spring fungicide must be applied
  - Controls must be specifically identified on pesticide usage records
- Intensified monitoring must include:
  - Monitoring of spring growth
  - Fruit monitoring



# Example of Pesticide Usage Record Showing Preventative Fungicide

|         |                           |   |
|---------|---------------------------|---|
| 4/8/13  | Pyraclostrobin + Boscalid | Fungus Control (Mummyberry , Botrytis, Anthracnos, Alternaria)              |
| 4/16/13 | Iprodione                 | Fungus Control (Mummyberry, Botrytis, Anthracnos , Alternaria)              |
| 4/25/13 | Cyprodinil + Fludioxonil  | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)               |
| 5/2/13  | Pyraclostrobin + Boscalid | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)               |
| 5/24/13 | Cyprodinil + Fludioxonil  | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)               |
| 6/5/13  | Methomyl                  | Cleanup/Preventative spray for OBLR, Orange tortrix , Cherry Fruitworm, SWD |
| 6/5/13  | Thiamethoxam              | Cleanup/Preventative spray for OBLR, Orange tortrix, Cherry Fruitworm, SWD  |
| 6/14/13 | Cypermethrin              | Cleanup/Preventative spray for OBLR, Orange tortrix, Cherry Fruitworm, SWD  |

# Monitoring (Scouting) Record for Mummy berry

Record of  
monitoring  
during spring  
growth

Record of  
fruit  
monitoring

| OREGON BLUEBERRIES TO KOREA<br>SCOUTING RECORD FOR MUMMYBERRY  |                                    |                                    |                                    |                       |            |           |             |
|--|------------------------------------|------------------------------------|------------------------------------|-----------------------|------------|-----------|-------------|
| GROWER NAME:   |                                    | FIELD LOCATION:                    |                                    | DATE:                 |            |           |             |
| GROWER CODE:   |                                    |                                    |                                    |                       |            |           |             |
| DOES FIELD HAS HISTORY OF MUMMYBERRY INFECTION:  |                                    |                                    |                                    |                       |            |           |             |
| MONITORING OF SPRING GROWTH FOR MUMMYBERRY   |                                    |                                    |                                    |                       |            |           |             |
| Inspect the spring growth at each of the specific site location(s) for evidence of primary infections on vegetative and floral growth • Within the designated area visit three sites. • At each of the three sites, inspect 10 bushes. These bushes should be spaced 3-5 plants apart and on both sides of the row, in order to cover a larger area at each site. • Inspect bushes for symptoms of shoot blight and browning along the major veins. Look for wilted, brown foliage and bent twig tips resembling shepherd's crook. Look for grayish green tufts of fungus associated with wilted foliage and blackened stems. Record number of infected shoots on each bush.   |                                    |                                    |                                    |                       |            |           |             |
| Number of bush   | Site 1 - Number of Infected shoots | Site 2 - Number of Infected shoots | Site 3 - Number of Infected shoots | Other Notes           |            |           |             |
| Bush 1   |                                    |                                    |                                    |                       |            |           |             |
| Bush 2   |                                    |                                    |                                    |                       |            |           |             |
| Bush 3   |                                    |                                    |                                    |                       |            |           |             |
| Bush 4   |                                    |                                    |                                    |                       |            |           |             |
| Bush 5   |                                    |                                    |                                    |                       |            |           |             |
| Bush 6   |                                    |                                    |                                    |                       |            |           |             |
| Bush 7   |                                    |                                    |                                    |                       |            |           |             |
| Bush 8   |                                    |                                    |                                    |                       |            |           |             |
| Bush 9   |                                    |                                    |                                    |                       |            |           |             |
| Bush 10  |                                    |                                    |                                    |                       |            |           |             |
| FRUIT MONITORING FOR MUMMYBERRY AFTER FRUIT HAS SIZED AND PRE-HARVEST  |                                    |                                    |                                    |                       |            |           |             |
| SCOUTING AFTER FRUIT HAS SIZED:  |                                    | SCOUTING AT PRE-HARVEST:           |                                    | EST. DATE OF HARVEST: |            |           |             |
| YES  | NO                                 | YES                                | NO                                 | YES                   | NO         |           |             |
| Monitor fruit as it sizes and immediately prior to harvest to determine whether there are mummyberry infections in the production field • Within the designated area visit three sites. • At each of the three sites, inspect 10 bushes. These bushes should be spaced 3-5 plants apart and on both sides of the row, in order to cover a larger area at each site. • Inspect at least 10 fruit clusters for discolored, shriveled fruit or for any evidence of mummyberry infection (such as early coloring of fruit) • Search the ground underneath the bushes and gently shake the bushes to look for any evidence of mummyberry infected fruit. Infected fruit shrivels and appears mummified as it develops; those "mummyberries" will drop to the soil. Record the number of fruit clusters with infected fruit (IFC) and/or bushes with dropped fruit (DF). |                                    |                                    |                                    |                       |            |           |             |
| Number of bush   | Site 1-IFC                         | Site 1-DF                          | Site 2-IFC                         | Site 2-DF             | Site 3-IFC | Site 3-DF | Other Notes |
| Bush 1   |                                    |                                    |                                    |                       |            |           |             |
| Bush 2   |                                    |                                    |                                    |                       |            |           |             |
| Bush 3   |                                    |                                    |                                    |                       |            |           |             |
| Bush 4   |                                    |                                    |                                    |                       |            |           |             |
| Bush 5   |                                    |                                    |                                    |                       |            |           |             |
| Bush 6   |                                    |                                    |                                    |                       |            |           |             |
| Bush 7   |                                    |                                    |                                    |                       |            |           |             |
| Bush 8   |                                    |                                    |                                    |                       |            |           |             |
| Bush 9   |                                    |                                    |                                    |                       |            |           |             |
| Bush 10  |                                    |                                    |                                    |                       |            |           |             |
| Estimated level of field infection (if any) (None) (Very Low) (Low) (Medium) (Medium High) ( High) :   |                                    |                                    |                                    |                       |            |           |             |



# Production Fields with No History of Mummy Berry Infection

## Required:

- Standard monitoring guidelines must be followed
- Fruit monitoring must be conducted

## Optional:

- Application of a preventive spring fungicide
- Monitoring of spring growth





# Detection of mummy berry infection in production fields during fruit monitoring

The infection level must be estimated and documented on the scouting record for that field

| OREGON BLUEBERRIES TO KOREA<br>SCOUTING RECORD FOR MUMMYBERRY  |                                    |                                    |                                    |                      |            |           |             |
|--|------------------------------------|------------------------------------|------------------------------------|----------------------|------------|-----------|-------------|
| GROWER NAME:   |                                    | FIELD LOCATION:                    |                                    | DATE:                |            |           |             |
| GROWER CODE:   |                                    |                                    |                                    |                      |            |           |             |
| DOES FIELD HAS HISTORY OF MUMMYBERRY INFECTION:  |                                    |                                    |                                    |                      |            |           |             |
| MONITORING OF SPRING GROWTH FOR MUMMYBERRY   |                                    |                                    |                                    |                      |            |           |             |
| Inspect the spring growth at each of the specific site location(s) for evidence of primary infections on vegetative and floral growth • Within the designated area visit three sites. • At each of the three sites, inspect 10 bushes. These bushes should be spaced 3-5 plants apart and on both sides of the row, in order to cover a larger area at each site. • Inspect bushes for symptoms of shoot blight and browning along the major veins. Look for wilted, brown foliage and bent twig tips resembling shepherd's crook. Look for grayish green tufts of fungus associated with wilted foliage and blackened stems. Record number of infected shoots on each bush.   |                                    |                                    |                                    |                      |            |           |             |
| Number of bush   | Site 1 - Number of Infected shoots | Site 2 - Number of Infected shoots | Site 3 - Number of Infected shoots | Other Notes          |            |           |             |
| Bush 1   |                                    |                                    |                                    |                      |            |           |             |
| Bush 2   |                                    |                                    |                                    |                      |            |           |             |
| Bush 3   |                                    |                                    |                                    |                      |            |           |             |
| Bush 4   |                                    |                                    |                                    |                      |            |           |             |
| Bush 5   |                                    |                                    |                                    |                      |            |           |             |
| Bush 6   |                                    |                                    |                                    |                      |            |           |             |
| Bush 7   |                                    |                                    |                                    |                      |            |           |             |
| Bush 8   |                                    |                                    |                                    |                      |            |           |             |
| Bush 9   |                                    |                                    |                                    |                      |            |           |             |
| Bush 10  |                                    |                                    |                                    |                      |            |           |             |
| FRUIT MONITORING FOR MUMMYBERRY AFTER FRUIT HAS SIZED AND PRE-HARVEST  |                                    |                                    |                                    |                      |            |           |             |
| SCOUTING AFTER FRUIT HAS SIZED:  |                                    | SCOUTING AT PRE-HARVEST:           |                                    | EST. DATE OF HARVEST |            |           |             |
| YES NO   |                                    | YES NO                             |                                    |                      |            |           |             |
| Monitor fruit as it sizes and immediately prior to harvest to determine whether there are mummyberry infections in the production field • Within the designated area visit three sites. • At each of the three sites, inspect 10 bushes. These bushes should be spaced 3-5 plants apart and on both sides of the row, in order to cover a larger area at each site. • Inspect at least 10 fruit clusters for discolored, shriveled fruit or for any evidence of mummyberry infection (such as early coloring of fruit) • Search the ground underneath the bushes and gently shake the bushes to look for any evidence of mummyberry infected fruit. Infected fruit shrivels and appears mummified as it develops; those "mummyberries" will drop to the soil. Record the number of fruit clusters with infected fruit (IFC) and/or bushes with dropped fruit (DF). |                                    |                                    |                                    |                      |            |           |             |
| Number of bush   | Site 1-IFC                         | Site 1-DF                          | Site 2-IFC                         | Site 2-DF            | Site 3-IFC | Site 3-DF | Other Notes |
| Bush 1   |                                    |                                    |                                    |                      |            |           |             |
| Bush 2   |                                    |                                    |                                    |                      |            |           |             |
| Bush 3   |                                    |                                    |                                    |                      |            |           |             |
| Bush 4   |                                    |                                    |                                    |                      |            |           |             |
| Bush 5   |                                    |                                    |                                    |                      |            |           |             |
| Bush 6   |                                    |                                    |                                    |                      |            |           |             |
| Bush 7   |                                    |                                    |                                    |                      |            |           |             |
| Bush 8   |                                    |                                    |                                    |                      |            |           |             |
| Bush 9   |                                    |                                    |                                    |                      |            |           |             |
| Bush 10  |                                    |                                    |                                    |                      |            |           |             |
| Estimated level of field infection (if any) (None) (Very Low) (Low) (Medium) (Medium High) ( High) :   |                                    |                                    |                                    |                      |            |           |             |

# Estimated Level of Mummy Berry During Fruit Monitoring

- If the estimated level of mummy berry field inspection is “none”, “very low” or “low”:
  - The fruit from that field is eligible to pack for export to Korea
- If the estimated level of mummy berry field inspection anything above a “low” level:
  - The fruit from that field is NOT eligible to pack for export to Korea

# Additional Requirements for Fields with Low Levels of Mummy Berry Infection

- Fruits with symptoms of mummy berry infection should not be harvested
- All fruit exhibiting symptoms of mummy berry must be removed during packing and sorting



# End of Part One



## Questions?



# Monitoring Requirements for Orange Tortrix, Oblique Banded Leafroller and Cherry Fruitworm

- Trap surveys and intensified visual inspection (scouting) must be used to monitor for:
  - Orange Tortrix (OT)
  - Oblique Banded Leafroller (OBLR)
  - Cherry Fruitworm (CFW)
- Monitoring results must confirm low pest presence (prevalence) or freedom for all three listed pests





# Trap Surveys



- Trap type:
  - Delta or standard wing-type traps
- Pheromone Lures:
  - Traps using the pheromone lure for OT may also be used to survey for OBLR
  - Traps using a pheromone lure specific for CFW must be placed separately for that insect

# Trap Surveys – Timing and Trap Density

Timing for trap survey:

- Traps must be in place from petal fall and until the final harvest of fruit of the latest maturing variety in that production field

Density:

- Each production field requires a minimum of:
  - 2 traps for OT/OBLR **AND**
  - 2 traps for CFW
- **In addition**, production fields of 10 acres or more require one additional trap of each type for every additional 10 acres or fraction thereof

## Replacement Intervals for Lures and Bottoms

- Pheromone lures must be replaced at least every 30 days or the lot will not qualify to pack for export to Korea
- Trap bottoms should be replaced when the effectiveness is compromised or at least every 30 days (replace when the pheromone lure is replaced).

# Trap Placement

- Trap Placement
  - In the upper third of the bush (or equivalent height)
  - Openings need to be free of obstructions
  - CFW traps should be placed near edges that border woods or tree-lines, if applicable
- Flagging of trap locations is recommended
- A map showing the location of each trap in the production field must be provided to regulatory officials upon request





# Trap Labeling

- Trap labeling
  - Each trap will be identified and labelled with a number and a code for the pheromone - either “OT/OBLR” or “CFW”
  - **The trap placement date will be recorded on the trap body**
- Each servicing visit must be recorded on the trap body
  - When the trap bottoms and/or the lures are replaced, that information must be recorded on the trap body



## Responsibility for Trap Monitoring

- Trap monitoring will be conducted by commercial pest consultants
- Personnel working under the supervision of a commercial pest consultant may service traps under this program if they are qualified to identify :
  - OT, OBLR, and CFW moth adults and
  - Other moths which might be attracted to the lures (such as Carnation Tortrix)

## Responsibility for Trap Monitoring (cont.)

- The responsibility for the trap monitoring and documentation of the results remains with the supervising pest consultant
- Growers who are also commercial pest consultants may not monitor traps in their own production fields
- Upon request, ODA will also conduct trap monitoring for a fee

## Trap Monitoring Intervals

- Traps must be monitored every week until the last harvest of the latest maturing variety in the registered production field
- Traps checks must take place either 6 days, 7 days or 8 days after the last servicing check
- With one exception, any other trap check interval is not acceptable and the lot will not be eligible to pack for Korea

## Exception to Trap Monitoring Intervals

- When an application of pesticides prevents entry to the field to check the traps within the 6, 7, or 8 day required servicing interval, the PCA should indicate on the trapping record that an application of pesticide prevented entry into the field by:
  - **Entering a letter code “PA” on the date that the trap check was scheduled to occur .**
- The PCA should check the traps as soon as possible in accordance with the re-entry period indicated on the pesticide label and enter the trap data on that day.

# Recording Trap Survey Results

- Trap surveys must be recorded on an official APHIS trap survey record
- Trap catches for OT/OBLR traps must distinguish between OT and OBLR
- Numbers of OT, OBLR and CFW must be recorded separately for each set of traps





| MONTH:   | OREGON BLUEBERRIES TO KOREA - APHIS TRAP SERVICING RECORD |                 | YEAR               |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
|--|---|-----------------|--------------------|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| GROWER NAME:   | GROWER CODE:  | FIELD LOCATION: | GROWER FIELD ID #: |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| INITIAL LURE PLACEMENT DATE:   | BLUEBERRY VARIETY(S):                                     | ACRES:          | # OF TRAP SETS:    |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| TRAP LABELLING CODES: OT = ORANGE TORTRIX ( <i>Argyrotaenia citrana</i> ) OBLR = OBLIQUE BANDED LEAFROLLER ( <i>Choristoneura rosaceana</i> ) CFW = CHERRY FRUIT WORM ( <i>Grapholita packardii</i> )<br>Note: One trap with OT lure may be used for both OT and OBLR but each moth type must be recorded separately |   |                 |                    |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| TRAP NO.   | DAYS OF THE MONTH   |                 |                    |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
|  | 1   | 2               | 3                  | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |   |
| OT-1   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OBLR-1   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| CFW-1  | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OT-2   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OBLR-2   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| CFW-2  | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OT-3   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OBLR-3   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| CFW-3  | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OT-4   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| OBLR-4   | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| CFW-4  | B   | P               | B                  | P | B | P | B | P | B | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P  | B  | P |
| Initials   |   |                 |                    |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |

INSTRUCTIONS: Put the number of moths found in the trap under the appropriate day of the month.  
 If you change the trap bottom, put a "X" in the "B" box on the date you made the change.  
 If you change the pheromone, put an "X" in the "P" box on the date you made the change.  
 When you have completed harvest of your orchard, draw a vertical line through the next column.  
 If fewer than four sets of traps are placed, draw a line through any unused trap numbers or delete unused trap numbers.

TRAP DENSITY: Minimum of two traps of each type for less than 10 acres; for 10 acres or more, add one trap for every additional 10 acres or fraction thereof  
 NOTE: TRAP RECORDS ARE TO BE SUBMITTED TO APHIS AND APHIS COOPERATORS UPON REQUEST. COMPLETED RECORDS MUST BE PROVIDED TO THE PACKING FACILITY PRIOR TO PACKING.  
 Updated March 26, 2012

## Trap Survey Records

- Copies of trap survey records will be made available to APHIS and ODA upon request
- Completed trap survey records must be provided to packing facilities prior to packing fruit from that production field

# Response to Trap Catches Above the Threshold

During the initial month of trapping:

- A non-aerial application of a control targeting the relevant pest must be applied immediately (before the next trap check) if the trap catch threshold for OT or CFW is exceeded:
  - For two consecutive weeks OR
  - In two or more traps during any week

# Response to Trap Catches Above the Threshold

After the initial lure replacement (required at the 4<sup>th</sup> trap check):

- If the trap catch in any individual trap exceeds the trap threshold for OT or CFW, then an intensified visual inspection must be conducted.
- The intensified visual inspection must be conducted 6-8 days after the date that the threshold was exceeded.
- If the grower wishes to harvest prior to the time of the visual inspection, then a non-aerial application of a control must be applied.



# Intensified Visual Inspections

- After the initial lure replacement, an intensified visual inspection must be conducted 6-8 days after the date that the number of moths caught in any single trap during any week of the trapping survey exceeds the established threshold of:
  - **Twenty (20) moths of OT or OBLR OR**
  - **Two (2) moths of CFW**



# Intensified Visual Inspection Protocol

- A ten (10) acre maximum area per trap site will be designated for a visual search for larvae and eggs
- The designated search area will be in the vicinity of the trap where the trap catch threshold was exceeded
- Within the designated area, three separate sites shall be selected
  - At each selected site, ten (10) bushes will be inspected that are:
    - spaced three to five plants apart
    - located on both sides of the row

# Intensified Visual Inspection Protocol (cont.)

- Ten (10) leaf tips and/or fruit clusters per bush shall be closely examined for:
  - Lepidoptera larvae, if the trap catch threshold was exceeded for OT and/or OBLR

**OR**

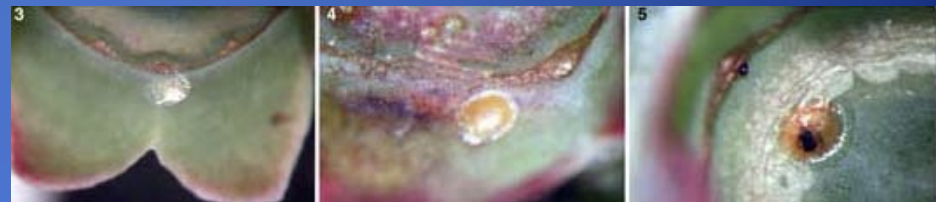
- Eggs and larvae, if the trap catch threshold was exceeded for CFW
  - Early season inspections for CFW should target calyx cups



**Webbing  
typical of OT  
and OBLR**



**OBLR larva**



**CFW eggs in calyx cups**

## Intensified Visual Inspection Protocol (cont.)

- Any eggs or larvae found must be:
  - Identified at the time of detection or
  - Be collected and labeled for follow-up identification
- The identification, number of specimens and location of the detection(s) must be recorded
- The results of the intensified visual inspection must be recorded on the standard Record of Intensified Visual Inspection or on a similar record form.



# Record of Intensified Visual Inspection

| Oregon Blueberries to Korea- Record of Intensified Visual Inspection -Trap Count Instigated Larvae Search |    |      |     |              |   |    |      |                  |  |   |    |      |     |
|---|----|------|-----|--------------|---|----|------|------------------|--|---|----|------|-----|
| Grower Name:  |    |      |     | Grower Code: |   |    |      | Field Code:      |  |   |    |      |     |
| Name of Pest Consultant:  |    |      |     |              |   |    |      |                  |  |   |    |      |     |
| Date Threshold Exceeded and Intensified Inspection Triggered:   |    |      |     |              |   |    |      | Inspection Date: |  |   |    |      |     |
| Trap Set Number that exceeded 20 Orange Tortrix, 20 Oblique Banded Leafrollers or 2 Cherry Fruitworms:    |    |      |     |              |   |    |      | Initials:        |  |   |    |      |     |
| <b>Site 1</b>   | OT | OBLR | CFW |              | <b>Site 2</b>                                 | OT | OBLR | CFW              |  | <b>Site 3</b>                                 | OT | OBLR | CFW |
| bush 1  |    |      |     |              | bush 1  |    |      |                  |  | bush 1  |    |      |     |
| bush 2  |    |      |     |              | bush 2  |    |      |                  |  | bush 2  |    |      |     |
| bush 3  |    |      |     |              | bush 3  |    |      |                  |  | bush 3  |    |      |     |
| bush 4  |    |      |     |              | bush 4  |    |      |                  |  | bush 4  |    |      |     |
| bush 5  |    |      |     |              | bush 5  |    |      |                  |  | bush 5  |    |      |     |
| bush 6  |    |      |     |              | bush 6  |    |      |                  |  | bush 6  |    |      |     |
| bush 7  |    |      |     |              | bush 7  |    |      |                  |  | bush 7  |    |      |     |
| bush 8  |    |      |     |              | bush 8  |    |      |                  |  | bush 8  |    |      |     |
| bush 9  |    |      |     |              | bush 9  |    |      |                  |  | bush 9  |    |      |     |
| bush 10   |    |      |     |              | bush 10                                       |    |      |                  |  | bush 10                                       |    |      |     |
| Location Notes (Grid Location if Applicable):   |    |      |     |              | Location Notes (Grid Location if Applicable): |    |      |                  |  | Location Notes (Grid Location if Applicable): |    |      |     |
| Trap Set Number that exceeded 20 Orange Tortrix, 20 Oblique Banded Leafrollers or 2 Cherry Fruitworms:    |    |      |     |              |   |    |      | Initials:        |  |   |    |      |     |
| <b>Site 1</b>   | OT | OBLR | CFW |              | <b>Site 2</b>                                 | OT | OBLR | CFW              |  | <b>Site 3</b>                                 | OT | OBLR | CFW |
| bush 1  |    |      |     |              | bush 1  |    |      |                  |  | bush 1  |    |      |     |
| bush 2  |    |      |     |              | bush 2  |    |      |                  |  | bush 2  |    |      |     |
| bush 3  |    |      |     |              | bush 3  |    |      |                  |  | bush 3  |    |      |     |
| bush 4  |    |      |     |              | bush 4  |    |      |                  |  | bush 4  |    |      |     |
| bush 5  |    |      |     |              | bush 5  |    |      |                  |  | bush 5  |    |      |     |
| bush 6  |    |      |     |              | bush 6  |    |      |                  |  | bush 6  |    |      |     |
| bush 7  |    |      |     |              | bush 7  |    |      |                  |  | bush 7  |    |      |     |
| bush 8  |    |      |     |              | bush 8  |    |      |                  |  | bush 8  |    |      |     |
| bush 9  |    |      |     |              | bush 9  |    |      |                  |  | bush 9  |    |      |     |
| bush 10   |    |      |     |              | bush 10                                       |    |      |                  |  | bush 10                                       |    |      |     |
| Location Notes (Grid Location if Applicable):   |    |      |     |              | Location Notes (Grid Location if Applicable): |    |      |                  |  | Location Notes (Grid Location if Applicable): |    |      |     |

**Note:** Indicate in location notes section if feeding damage is detected at a site, but no larva or eggs are detected. Feeding damage triggers additional actions - either expanded additional visual inspection or application of controls. Refer to the operational guidelines for details.

March 27, 2019

## Control and Records

- Appropriate controls must be applied if OT and/or OBLR larvae and/or CFW eggs or larvae are detected in the production field
- Controls must be specifically identified on pesticide usage records
- Records of control applications must be provided to packing facilities prior to packing fruit from that orchard and to APHIS and/or ODA upon request

# Detection of Feeding Damage but no OT, OBLR or CFW Larvae

If evidence of OT, OBLR, or CFW larval feeding damage is present (but no larvae are found):

- The intensified visual inspection must be expanded to include:
  - An inspection of at least ten (10) additional leaf tip and fruit bud clusters on the bush where feeding evidence was present
  - An intensified visual inspection of all bushes immediately adjacent to the bush where feeding damage was found.



## Detection of Feeding Damage but no OT, OBLR or CFW Larvae (cont.)

- Appropriate controls must be applied if during that additional inspection:
  - OT, OBLR larvae, or CFW eggs or larvae are detected, or
  - Feeding damage is found on multiple bushes
- Appropriate controls may be applied in lieu of the additional intensified visual inspection
- Application of controls shall be recorded



# Example of Control Application Record

## Pesticide Application Records

**Bodacious Blues** Grower Code: 777 Field Location: West Valley Ranch (697)

| Date    | Chemical Name             | Application Purpose  |
|---------|---------------------------|--|
| 3/13/13 | Captan                    | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)              |
| 4/8/13  | Pyraclostrobin + Boscalid | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)              |
| 4/16/13 | Iprodione                 | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)              |
| 4/25/13 | Cyprodinil + Fludioxonil  | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)              |
| 5/2/13  | Pyraclostrobin + Boscalid | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)              |
| 5/24/13 | Cyprodinil + Fludioxonil  | Fungus Control (Mummyberry, Botrytis, Anthracnos, Alternaria)              |
| 6/5/13  | Thiamethoxam              | Cleanup/Preventative spray for OBLR, Orange tortrix, Cherry Fruitworm, SWD |
| 6/14/13 | Cypermethrin              | Cleanup/Preventative spray for OBLR, Orange tortrix, Cherry Fruitworm, SWD |

# Regulatory Monitoring

- USDA/APHIS and/or ODA may:
  - Review any records associated with the program for compliance
  - Inspect any registered blueberry production field to confirm that low pest prevalence or pest freedom is maintained for mummy berry, OT, OBLR and CFW.



# Submission of Records

- The **grower** is responsible for submitting completed records to the packing facility
  - Records must be submitted prior to, or upon arrival, of the first blueberries from that field to the packing facility
  - Current records (trap check within 8 days of delivery) must be submitted for subsequent fruit deliveries from that field
- The **packing facility** must submit the applicable records to ODA, prior to, or at the time of delivery of the lot to the packing facility.

# Submission of Records

- Required records include:
  1. Mummy berry monitoring record
  2. Current trap survey records
  3. Record(s) of intensified visual inspection (if applicable)
  4. Copies of pesticide application records (if applicable)
  5. Arrival Inspection Record- Results of Fruit Extraction Tests
- Copies of all records will be made available to APHIS and/or ODA upon request.



## Submission of Records (cont.)

- Trap survey records must:
  - Be inclusive for all months from trap placement to harvest
  - Show a last trap service date that is no more than 8 days prior to receipt of fruit at the facility (with exception for pesticide application)
  - Be accompanied by a copy of the relevant pesticide application record if a pesticide application prevented entry into the field on the scheduled date of trap servicing (indicated by “PA” on the trap record)

## Submission of Records (cont.)

- Record(s) of intensified visual inspection (if applicable) must be provided for:
  - All dates that any trap counts exceeded trapping thresholds
  - Every trap with a count that exceeds the trap threshold
- Copies of pesticide application records (if applicable)
  - Must have targeted pest(s) highlighted

# Record Review and Verification

- Packing facilities must designate a records coordinator (and an alternate to act in their absence).
- The records coordinator or designee will be responsible for:
  - Reviewing the records submitted by the grower
  - Completing the Record Verification Checklist
  - Verifying that the monitoring requirements for Mummy Berry, OT, OBLR and CFW and the requirement for the application of controls (if applicable) have been met

# Record Verification Checklist

## RECORD VERIFICATION CHECKLIST FOR THE EXPORT OF OREGON BLUEBERRIES TO KOREA

REGISTERED GROWER LOT NUMBER: \_\_\_\_\_ HARVEST DATE: \_\_\_\_\_

NAME OF REGISTERED PACKING FACILITY: \_\_\_\_\_

NAME OF REVIEWER: \_\_\_\_\_ DATE: \_\_\_\_\_

CHECK (✓) IF YOU ARE THE:

PACKING FACILITY RECORDS COORDINATOR: \_\_\_\_\_ ODA CERTIFYING OFFICIAL: \_\_\_\_\_

| A. VERIFICATION OF MONITORING FOR MUMMY BERRY  |   | ✓ applicable column below for each entry |    |
|--|---|--|----|
| 1  | RECORDS FOR THE REGISTERED LOT CONFIRM THAT:  | YES                                      | NO |
|  | a. Mummy berry monitoring was conducted in the production field as fruit was beginning to size  |  |    |
|  | b. Mummy berry monitoring was conducted in the production field pre-harvest   |  |    |
|  | c. Mummy berry is absent from the production field or present only at a low infection level*  |  |    |
| *Note: Extra care must be taken when harvesting and sorting lots of fruit with low infection levels of mummy berry |   |  |    |
| B. VERIFICATION OF MONITORING FOR ORANGE TORTRIX (OT), OBLIQUEBANDED LEAFROLLER (OBLR), AND CHERRY FRUITWORM (CFW) |   |  |    |
| 1  | TRAP SURVEY RECORDS FOR THE REGISTERED LOT CONFIRM THAT:  | YES                                      | NO |
|  | a. Traps were in place from petal fall through harvest  |  |    |
|  | b. A minimum of 2 traps were placed for OT/OBLR and a minimum of 2 traps were placed for CFW, with an additional trap of each type for every additional 10 acres                      |  |    |
|  | c. Pheromone lures were replaced at least every 30 days   |  |    |
|  | d. All trap checks were conducted at 6, 7 or 8 day intervals unless no entry was allowed during the scheduled trap check due to pesticide applications as noted on trap survey record |  |    |
|  | e. Intensified visual inspections were conducted each time that a trap threshold was exceeded   |  |    |
| * Note: The trap threshold for OT and OBLR is 30 moths per trap per week, for CFW it is 2 moths per trap per week  |   |  |    |
| 2  | INTENSIFIED VISUAL INSPECTION RECORDS FOR THE REGISTERED LOT CONFIRM THAT: (Note: Enter "N/A" if not applicable)  | YES                                      | NO |
|  | a. Three sites were inspected in the area of each trap where the threshold was exceeded   |  |    |
|  | b. A minimum of 10 bushes per site were inspected   |  |    |
|  | c. There were no detections of eggs or larvae of OT, OBLR or CFW or appropriate controls were applied if eggs or larvae of OT, OBLR or CFW were detected - see below                  |  |    |
| C. VERIFICATION OF CONTROLS APPLIED FOR MUMMY BERRY, OT, OBLR AND/OR CFW   |   |  |    |
| 1  | PESTICIDE APPLICATION RECORDS FOR THE REGISTERED LOT CONFIRM THAT: (Note: Enter "N/A" if not applicable)  | YES                                      | NO |
|  | a. Preventative controls were applied if the production field has a history of mummy berry infection  |  |    |
|  | b. Appropriate controls were applied if OT, OBLR or CFW eggs or larvae were detected during intensified visual inspections  |  |    |
| D. VERIFICATION OF LAST TRAP SURVEY DATE VS. DATE OF PACKING   |   | YES                                      | NO |
|  | a. Is the date of harvest 8 days or less after the last trap survey record?   |  |    |
| E. VERIFICATION OF PACKING FACILITY ARRIVAL INSPECTION RESULTS   |   | YES                                      | NO |
|  | Did all of the packing facility arrival inspections confirm freedom from OT, OBLR and CFW?  |  |    |

IF "NO" IS CHECKED IN ANY COLUMN ABOVE - STOP - THIS LOT IS NOT ELIGIBLE TO PACK FOR KOREA!

THIS LOT QUALIFIES TO BE PACKED AND INSPECTED FOR EXPORT TO KOREA (circle yes YES or no) NO  
APHIS March 27, 2019



## Record Review and Verification

- The registered production field will be disqualified from export to Korea for the current shipping season if:
  - Records are not provided to document that the requirements for low pest prevalence or pest freedom for Mummy Berry, OT, OBLR and CFW have been met
  - Provided records do not show that the requirements for low pest prevalence or pest freedom for Mummy Berry, OT, OBLR and CFW have been met

## Record Retention

- All records pertaining to the program shall be retained for a minimum of one year or until the end of the APQA onsite survey, whichever is later.

# Packing Facility Requirements

- Packing facilities and cold storage areas must be:
  - Clean
  - Equipped with pest exclusion devices such as insect screens, air curtains, plastic or rubber curtains, or automatic closing doors
- APHIS and/or ODA will verify each year before the start of exports
- Packing facilities that will ship blueberries to Korea via airfreight must provide APHIS with the name of any freight forwarder(s) they will use by May 15

# Packing and Sorting Requirements

- Blueberry fruit for export to Korea must be kept separate from fruit that is not eligible to pack for export to Korea
  - Sorting or commingling with fruit that is not eligible for export to Korea is not allowed





# Packing and Sorting Requirements

- If blueberries not eligible for export to Korea are packed in the same packing room:
  - Before any lots qualified for Korea are packed, a general cleaning shall be conducted and,
  - The packing facility must verify that the packing lines are clear of any loose blueberries or debris

# Packing and Sorting Requirements

- Fruit that is shrunken, shriveled, scarred, discolored, deformed, over-ripe or otherwise of poor quality will be removed manually by packing facility sorting personnel during the normal sorting process.



# Packing and Sorting Requirements

- Shipments for export to Korea:
  - Must be free of contaminants such as leaves, branches and soil
  - Must be handled in a manner to prevent insect infestation during storage and transportation



# Packaging and Labeling Requirements

- Each clamshell of blueberries will be labeled with information to identify the production orchard
- Each packed carton or pallet will be clearly marked with the name of the packing facility
- Each packed carton or pallet will be clearly marked with the designation “For Korea”
  - Either upper or lower case font is acceptable for carton markings
  - Pallet identification labels will use upper case font



# Pallet Identification Label

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**FOR  
KOREA**

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# Pallet Identification Label REMINDER

- IF PALLET IDENTIFICATION LABELS (FOR KOREA) ARE USED IN LIEU OF LABELLING EVERY CLAMSHELL, THEN
  - EVERY PALLET IN THE SHIPMENT MUST HAVE A PALLET IDENTIFICATION LABEL
- KOREA WILL REFUSE ENTRY OF ANY PALLET NOT HAVING THE REQUIRED PALLET IDENTIFICATION LABEL

## Pallet Stacking

- If the name of the blueberry packing facility and the words “For Korea” are marked on each carton:
  - Cartons should be stacked to ensure that those markings face out from the center of each pallet
  - Those markings should be visible from all sides of each pallet

# Phytosanitary Inspection

- Packing facilities shall **ONLY** submit shipments for phytosanitary inspection that meet the requirements of this protocol
- Before inspecting the submitted lot, the ODA certifying official will:
  - Review all documentation
  - Complete the Record Verification Checklist
  - Confirm that lots submitted for export inspection meet the conditions of this protocol
- ODA will not inspect any lot for export to Korea that does not meet the conditions of this protocol



## Phytosanitary Inspection Requirements (cont.)

- The ODA certifying official will take a random sample of at least 2 percent of the fruits to inspect for each shipment
  - The selection of samples should be representative of all the lots in the shipment
- The phytosanitary inspection should especially be targeted for *Monilinia vaccinii-corymbosi*, *Argyrotaenia citrana*, *Choristoneura rosaceana*, *Grapholita packardi* and *Epiphyas postvittana*
- The consignments must be free of pests of concern to Korea

## Phytosanitary Certification Requirements (cont).

- The name of the packing facility must be included on the phytosanitary certificate
- The phytosanitary certificate must contain the following two additional declarations:

“Fruits in this consignment are not infested with, *Argyrotaenia citrana*, *Choristoneura rosaceana*, *Grapholita packardi* and *Monilinia vaccinii-corymbosi*.”

AND

“The shipment was inspected and found free of Light Brown Apple Moth, *Epiphyas postvittana*.”

## Sealing Requirement – Ocean Freight

- Ocean Freight:
  - After the shipment is loaded into the shipping container, the container will be sealed by the packing facility
  - The number of that seal will be included on the shipping documents

# Sealing Requirement – Air Freight

- Stacking on pallets:
  - A solid sheet of cardboard (no holes or openings), plastic, screening (1.6 mm or smaller mesh size) or other insect proof material must be placed on the pallet surface before stacking cartons of fruit
  - This is to provide a barrier to exclude the movement of insects onto the cartons of fruit through the open areas of the pallet.
- Each pallet of fruit shall be wrapped with screening (1.6 mm or smaller mesh size), plastic, or other materials such as “Cool-Guard” to completely enclose all cartons on the pallet.
- The wrapping material will then be sealed to itself and to the pallet and/or barrier covering the pallet surface with USDA/APHIS/ official tape



# Example of Official Sealing Tape

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U.S. EXPORT TO KOREA

Tampering With Shipment Is Prohibited While in Transit

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- Text will be in green letters on two inch wide clear tape
  - The words "U.S. EXPORT TO KOREA" will be in one-inch high letters. "Tampering With Shipment Is Prohibited While In Transit" will be in as large a type size as possible not to exceed one-half inch tall letters and will be centered below the words "U.S. EXPORT TO KOREA".
  - The blocks of text will repeat continuously at a spacing of one-half inch.
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U.S. EXPORT TO KOREA

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## Freight Forwarders – Air Freight

- Air freight shipments that will be subjected to TSA screening must be handled by a freight forwarding facility that is under compliance with USDA/APHIS to handle shipments of fresh blueberries from Oregon for export to Korea.
- Packing facilities must provide APHIS with the name of any freight forwarder(s) they will use by May 15

# TSA Screening?

- Blueberry shipments on planes with passengers
- When TSA does not have large enough equipment to scan the entire pallet at one time

# What is required of the freight forwarders?

- 1. Prior to the export season, TSA cargo screening facilities must **notify USDA-APHIS** of their intent to handle fresh blueberry fruit from Oregon which is to be exported to Korea.
- 2. TSA cargo screening facilities which handle fresh blueberry fruit to be exported to Korea are required to sign and maintain a current **Compliance Agreement (CA)**. Compliance agreements are valid for a period of one year from the date of signature.
- 3. The agreement must include **current contact information** for the responsible party at the facility. If that contact information changes at any time during the term of the compliance agreement it is the responsibility of the facility to inform USDA-APHIS of the changes.
- 4. The person deemed as the responsible party for the TSA cargo screening facility is responsible to **train all employees at the facility** in regards to the requirements of this agreement. As part of this training, a current copy of the operational guidelines (work plan) for the export of fresh blueberry fruit from the State of Oregon to Korea will be provided (or will be available) to each employee for review.
- 5. Shipments of fresh blueberry fruit being screened for export to Korea must be kept **segregated from other shipments of fruit** at all times while in the facility. Shipments of fresh blueberry fruit destined to Korea may not be commingled, simultaneously screened or mixed with any other fresh fruit while in the facility. While being stored at the screening facility, shipments of fresh blueberry fruit must be kept separate from other shipments by a minimum distance of 100mm. **The integrity and identity** of all shipments of fresh blueberry fruit destined to Korea must be maintained during storage and screening at the facility. Fresh blueberry fruit shipments must not be mixed with each other.



## Freight forwarders cont.

- 6. Screening facility storage areas should be **kept broom clean.**
- 7. **After the individual cartons of blueberry fruit have passed screening, the cartons must be restacked on pallets in a manner that will ensure that the name of the blueberry packing facility and the words “FOR KOREA” face out from the center of each pallet and are visible from all sides of each pallet. Before placing the first layer of individual cartons of fruit on the pallets, a solid sheet of cardboard (no holes or openings), plastic, screening (1.6 mm or smaller mesh size) or other insect proof material must be placed on the pallet surface to provide a barrier to exclude the movement of insects onto the cartons of fruit through the open areas of the pallet.**
- 8. After the shipments have been screened, the restacked pallets must be **entirely wrapped with screen (1.6 mm or smaller mesh size), plastic, or other materials** such as “Cool-Guard” to completely enclose all the cartons on the pallet. Guidance as to the preferred type of wrapping material to be used may be provided by the exporter.
- 9. The wrapping material will then be sealed to itself and to the pallet and/or to the barrier covering the pallet surface with **USDA-APHIS official tape.** All seams must be sealed completely, preventing any openings between seams. An image of the USDA-APHIS official tape is included at the end of these requirements.
- 10. Pallets of blueberries destined to Korea **must only be sealed with official USDA-APHIS tape.** No substitution of other tape is allowed. The screening facility is responsible for ensuring that only USDA-APHIS official tape is used to seal fresh blueberry fruit pallets exported to Korea.

## Freight forwarders cont.

- 11. USDA-APHIS official tape **cannot be used to seal, wrap, or bind any other cargo nor may it be used for any other purpose.** The only approved use is for fresh blueberry fruit exports to Korea.
- 12. It is the **responsibility of the screening facility to purchase the official tape.** USDA-APHIS will provide contact information for approved sources of the tape.
- 13. USDA-APHIS official tape must be protected from misuse. The screening facility must develop and maintain an accounting system to **track the tape from purchase through use.** At the time of purchase, the screening facility will provide USDA-APHIS with a copy of the invoice depicting the amount of tape ordered. The tape must be stored in a secure location when not in use. Rolls of unused tape may not leave the facility. The facility cannot provide USDA-APHIS official tape to any other facility. Tape accountability **records must be kept for 3 years.**
- 14. TSA cargo screening facilities will be **subject to audits** performed by USDA-APHIS and APHIS Cooperators.
- 15. Violations of this agreement may result in suspension of the compliance agreement. If a facility is suspended, all TSA cargo screening of fresh blueberry fruit for export to Korea will be terminated. In the event that all the non-compliance issues which caused the suspension are corrected to the satisfaction of USDA-APHIS, the facility may request, and be granted, reinstatement of the compliance agreement.

# Official Tape

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## U.S. EXPORT TO KOREA

Tampering With Shipment Is Prohibited While In Transit

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# Tape Vendors

- Lisa Poulson  
Michelsen Packaging Company  
509-853-2885 direct  
lisa@mpcyak.com

Natureworx - Environmentally Intelligent Packaging  
Tia Ross  
503-709-1153  
tia@natureworxpkg.com

H.R. Spinner Corporation  
509-453-9111

- Washington Packing  
206-286-1000  
sales@washingtonpacking.com

# APHIS Approved TSA Certified Cargo Screening Facilities

## California

Able Freight Services Inc.  
5340 W 104th Street  
Los Angeles, CA 90045 (310)-568-8883

Able Freight Services Inc.  
332 East Grand Ave.  
San Francisco, CA 94080 (650) 877-0854

Commodity Forwarders Inc.  
11101 S La Cienega Blvd.  
Los Angeles, CA 90650 (310)-348-8855

HPL Apollo  
5330 West 102nd Street  
Los Angeles, CA 90045 (310) 258-6148

Vizion Logistics / LAX Warehouse  
5343 West Imperial Highway  
Suite 300  
Los Angeles, CA 90045 (310) 322-1888



# APHIS Approved TSA Certified Cargo Screening Facilities

## Washington

Commodity Forwarders, Inc.

19034 13th Place South

Building 3

Seattle, WA 98148 (206) 439-6765

Jetstream Freight Forwarding

21024 24th Avenue South

Suite 114

SeaTac, WA 98198 (206) 824-0495

Summit Northwest

21607 88th Ave S,

Kent, WA 98031 (206) 214-0109

# Questions?

