

# Quality Assurance at the Grower Level

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# Role of the Producer

- Ensure that regular and effective Quality Control procedures are in place
- Develop dating system or at least a confidential batch date system
- Constantly evaluate culture for negative characteristics
- Regularly challenge culture for promised traits (eg. Non-diapausing)
- Ensure packaging is effective

# Role of the Grower

- Buy from a reputable distributor
- Immediately open the shipping package
- Inspect products immediately
- Apply products as soon as possible
- Immediately inform supplier of any concerns or problems
- Monitor the development in the crop

# Simple Quality Assurance tests

- Arranged by product type
- Intended to be immediate
- Uses a minimum of equipment
- Should either reassure the customer or point out a potential problem with the product

# Predatory Mites in a Granular Carrier; Method A

- Remove container from carton and inspect for damage
- Gently rotate to mix
- Bang down on table and leave for 1 min.
- Look through container or open lid to observe movement of mites
- Leave for 10 min. to get an idea of numbers



# Predatory Mites in a Granular Carrier; Method B

- Gently and thoroughly mix container and remove 10% of volume
- Pour sample out onto a clean white piece of paper
- Gently disturb the carrier and squish mites as you find them
- Note general condition and speed of mites
- Continue disturbing carrier for entire test as some mites may be reluctant to leave carrier if food is present



# Predatory Mites on a Leaf Carrier

- Examine leaves for sign of freezing
- Mix leaves by hand
- Select a range of samples (ie; small leaves, dark, damaged etc.), representative size.
- With hand lens or microscope, count all mobiles and eggs on all sides



# Predatory Mites in a Bran Carrier



- Difficult to do simple test
- Experience allows simpler testing
- “Pour on – pour off” type testing
- Pour onto white paper or hand
- Predators are fast, food mites are slow

# Beetles and Predatory Bugs



- Chill container for at least 15 min.
- Go to release site and pour contents out onto white paper
- Count all stages and estimate those remaining in container

# Predatory Midges in Pupae form

- *A. aphidimyza*
- Allow adults to emerge in a clear, flat surfaced container
- Mark off a representative area on the lid and count



# Parasitoids in Pupae form, mounted on Cards; Method A

- Select a random card
- Using microscope, count all pupae, noting empty cases
- Mark count on card, flag card, and hang in crop
- After 2 weeks, remove card and count again



# Parasitoids in Pupae form, Method B

- Select random card
- Place in 40 dram vial with yellow sticky card disc on inside of lid
- Place assembly in crop ensuring no direct sunlight
- After 2 weeks, count adults on yellow disc, also count adults on bottom of container
- An even distribution of adults on yellow disc suggests flight capability



# Parasitoids in Loose form



- Measure out representative sample
- Put pupae in 40 dram clear vial with yellow sticky disc on inside of lid
- Leave in protected area of crop for 2 weeks
- Count adults on yellow disc

# Summary

- Grower should appoint one person to regularly inspect beneficials
- This person should also direct application in crop and order beneficials
- Use these tests or develop your own
- Monitor performance in crop and keep an accurate record of application rates and dates