

# Insecticide resistance management guidelines in the Philippines

#### **Cultural/Mechanical**

- Sanitation
- Synchronized Planting
- Crop Rotation; Fallowing
- Use of Resistant Varieties
- Minimum Tillage
- Proper Fertilization (eg. Nitrogen)

#### **Biological / Bio-control**

- Knowing the Natural Enemies of the pest
- Diadegma and Cotesia for Cabbage DBM control
- Spiders, Lady Beetles, Trichrogama,
- Bacillus sp.

#### Chemical

- Need based approach in the use of pesticides
- High risk pests include Diamond Back Moth, Hoppers (BPH, MLH),
   Eggplant Fruit and Shoot Borer, Thrips
- Continuous use of pesticides of same of mode of action leads to development of resistance
- Role of Insecticide Resistance Management





#### **Incorporate IPM practices**

- Identify the Pest
- Monitor Pest populations
- Use the right and registered insecticides as needed
- Seek expert advise (e.g.
   Extension workers, industry)

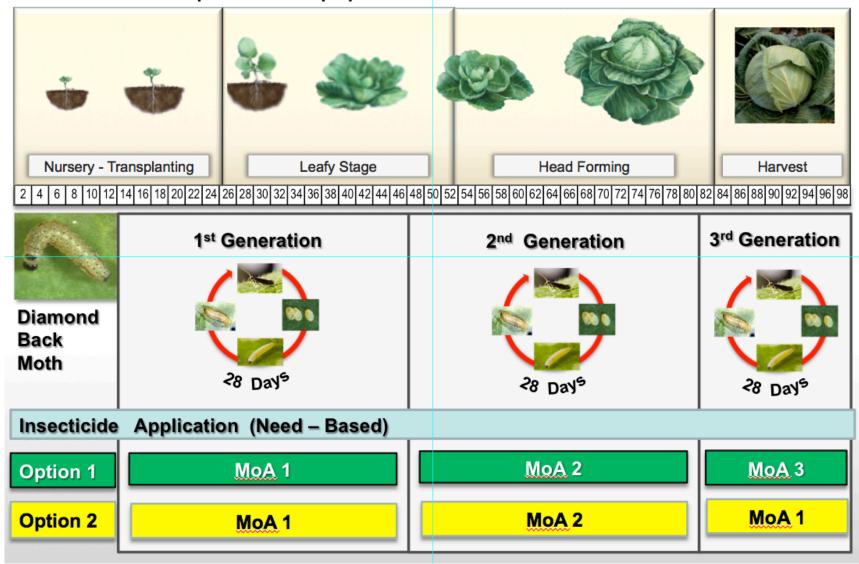
### To Avoid Development of Insecticide Resistance

- 1. Incorporate IPM practices
- 2. Follow GAP Principles
- 3. Know the mode of action (MoA) of insecticide products / brands
- 4. Rotate Insecticide MoA group / NOT brands





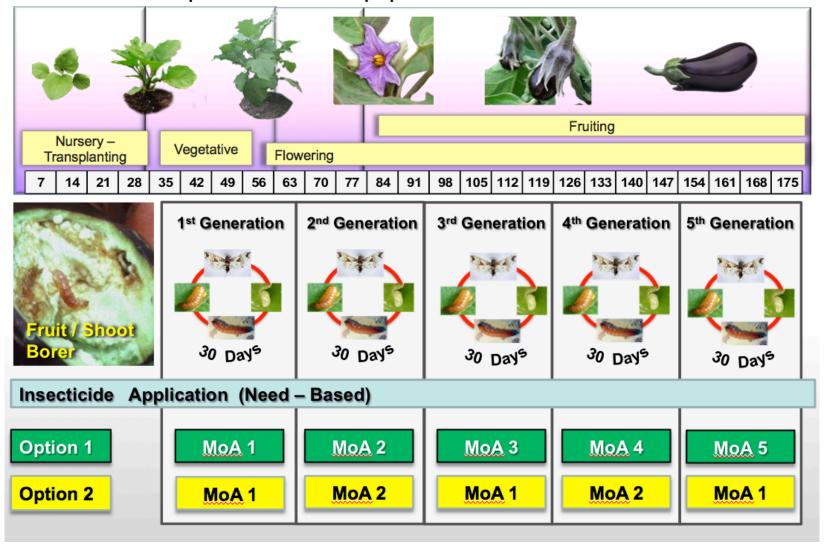
## Insecticide Resistance Management (IRM) Strategy in Cabbage To ensure susceptible DBM population







## Insecticide Resistance Management (IRM) Strategy in Eggplant To ensure susceptible Fruit Borer population







Insecticide Resistance Management (IRM) Strategy in Rice Seedling Leaf Development Tillerina Stem Elongation - Booting Flowering Ripening 105 | 110 | 115 | 120 5 10 15 20 25 30 35 45 50 55 60 65 70 75 80 85 90 95 | 100 40 3<sup>rd</sup> Generation 1st Generation 2<sup>nd</sup> Generation 35 Days 35 Days 35 Days Stemborer **Brown Plant** 32 Days 32 Days 32 Days Hopper **Green Leaf** 30 Days Hopper Insecticide Application (Need – Based) Option 1 MoA 3 MoA 1 MoA 2 **Option 2** MoA 1 MoA 2 MoA 1



