



ROHINI
COLLEGE OF ENGINEERING & TECHNOLOGY
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(AUTONOMOUS)

Department of Agricultural Engineering

Course Name : **Protected Cultivation**
Course Code : **AI3015**
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Year/Semester : **III / 06**
Faculty : **Mr. ARUNPANDIAN N (Asst. Professor)**

UNIT - III

PROTECTED CULTIVATION OF FLOWER CROPS

PART 4 : INTEGRATED PEST AND DISEASE MANAGEMENT

4.1 IPDM Principles in Protected Floriculture

Components of IPDM:

1. Preventive Measures: Sanitation, quarantine, resistant varieties
2. Monitoring: Regular scouting, sticky traps, pheromone traps
3. Intervention Thresholds: Economic/esthetic injury levels
4. Integration: Multiple compatible control methods

4.2 Major Pests and Management

Common Pests in Protected Flowers:

Pest Affected Crops Damage Symptoms Management

Two-spotted spider mite Rose, carnation, gerbera Stippling, webbing, leaf drop

Phytoseiulus persimilis (predator), abamectin

Thrips Rose, chrysanthemum, gerbera Silvering, distortion, bud damage Orius laevigatus, blue sticky traps, spinosad

Whitefly Poinsettia, gerbera Yellowing, sooty mold, virus transmission Encarsia formosa, yellow traps, imidacloprid

Aphids Most flowers Curling, honeydew, virus vectors Aphidius colemani, pirimicarb, neem oil

Biological Control Agents:

- Predators: Amblyseius, Cryptolaemus, Chrysoperla
- Parasitoids: Trichogramma, Aphidius, Encarsia
- Entomopathogens: Beauveria, Metarhizium, Bacillus thuringiensis

4.3 Disease Management

Major Diseases:

Disease	Pathogen	Crops	Management
Powdery mildew	Oidium spp.	Rose, gerbera	Sulfur vaporization, trifloxystrobin, proper ventilation
Botrytis blight	Botrytis cinerea	All cut flowers	Humidity <85%, iprodione, biologicals (Trichoderma)
Root rots	Pythium, Phytophthora	Gerbera, carnation	Sterilized media, metalaxyl, proper drainage
Bacterial wilt	Ralstonia solanacearum	Gerbera, anthurium	Resistant varieties, sanitation, copper compounds

Integrated Approaches:

- Cultural: Sanitation, spacing, ventilation, resistant varieties
 - Physical: Soil solarization, steam sterilization, UV treatment
 - Biological: Trichoderma, Pseudomonas, Bacillus species
 - Chemical: Judicious use following resistance management strategies
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