

CONTROL OF GREENHOUSE TOMATO PESTS

Certain cultural practices play a significant role in reducing or eliminating many insect problems in greenhouses. The following cultural practices will aid in the control of insect pests:

1. Maintain a clean, closely mowed area adjacent to the greenhouse.
2. Dispose of any trash, boards, or old plant debris in the area.
3. Keep doors, screens, and ventilation fan screens in good repair.
4. Use clean sterile soils, tools, flats, and other equipment.
5. At the conclusion of the season remove all plants and any plant debris, clean greenhouse thoroughly, and fumigate.
(See Insecticide Use Suggestions)

“An ounce of prevention is worth a pound of cure.”

CHEMICAL SAFETY IN THE GREENHOUSE

When used as recommended on the labels pesticides are safe and effective. However, all pesticides are poisonous and if misused, they may be hazardous to humans and animals and may also contribute to the pollution of the environment.

Before using any pesticide read the label in its entirety. Note any special precautions such as the necessity of wearing special protective clothing when applying the chemical. Follow all safety precautions set forth on the label. The following suggestions will aid in developing safe pesticide-use practices in greenhouses.

1. Become familiar with the use of a pesticide before using it. Know its toxicity and the necessary precautions for its safe use.
2. Keep all safety equipment such as facemasks, respirators, and protective clothing on hand and in good working order.
3. When mixing pesticides use a well-ventilated area or mix outdoors. Avoid contact with skin and do not breathe vapors.
4. Do not save used pesticide containers. Dispose of old containers properly.
5. Store all pesticides in a secure place away from pets, children, and unknowledgeable persons. Never store pesticides in unmarked containers.
6. Post caution signs during fumigation and after treatment of greenhouse to avoid contact with chemicals.
7. Apply correct dosage of the pesticide. Using less than the correct amount may result in poor control of the pest. Using more than the correct amount may result in excessive residue or damage to plants.
8. Obey specified time intervals between treatments and cutoff dates before harvest. A failure to observe these restrictions may result in excessive residue or damage to plants.
9. The use of certain chemicals may be phytotoxic to some varieties of plants. This should be checked before using a chemical.
10. Special restrictions apply to greenhouses connected to living quarters. Read label restrictions where this applies and follow all restrictions carefully.

TABLE OF MEASURES

Liquid:

1 level tablespoonful = 3 level teaspoonfuls
1 fluid ounce = 2 tablespoonfuls = 29.57 milliliters
1 cupful = 8 fluid ounces
1 pint = 2 cupfuls = 16 fluid ounces
1 quart = 2 pints = 32 fluid ounces
1 gallon = 4 quarts = 128 fluid ounces

Weight:

1 ounce = 28.3 grams
1 pound = 16 ounces = 454 grams
1 ton = 2,000 pounds

DILUTION TABLES

Wettable Powders

Number of ounces of wettable powder to use in small sprayers when amount per 100 gallons is known:

| 100 gals | 10 gals | 5 gals | 2 gals | 1 gal |
|-----------------|----------------|---------------|---------------|--------------|
| 0.5 lb | 0.8 oz | 0.4 oz | 0.2 oz | 0.1 oz |
| 1.0 lb | 1.6 ozs | 0.8 oz | 0.3 oz | 0.2 oz |
| 2.0 lbs | 3.2 ozs | 1.6 ozs | 0.6 oz | 0.3 oz |
| 3.0 lbs | 4.8 ozs | 2.4 ozs | 1.0 oz | 0.5 oz |
| 4.0 lbs | 6.4 ozs | 3.2 ozs | 1.3 ozs | 0.6 oz |
| 5.0 lbs | 8.0 ozs | 4.0 ozs | 1.6 ozs | 0.8 oz |

Emulsifiable Concentrates

Number of fluid ounces of emulsifiable concentrate to use in small sprayers when amount per 100 gallons is known:

| 100 gals | 10 gals | 5 gals | 2 gals | 1 gal |
|-----------------|----------------|---------------|---------------|--------------|
| 1 pt | 1.6 fl ozs | 0.8 fl oz | 0.3 fl oz | 0.2 fl oz |
| 1 qt | 3.2 fl ozs | 1.6 fl ozs | 0.7 fl ozs | 0.3 fl oz |
| 2 qts | 6.4 fl ozs | 3.2 fl ozs | 1.3 fl ozs | 0.6 fl oz |
| 1 gal | 12.8 fl ozs | 6.4 fl ozs | 2.6 fl ozs | 1.3 fl ozs |

Mist Blower

Quantity of emulsifiable concentrate (EC) needed to make a 25X concentrate:

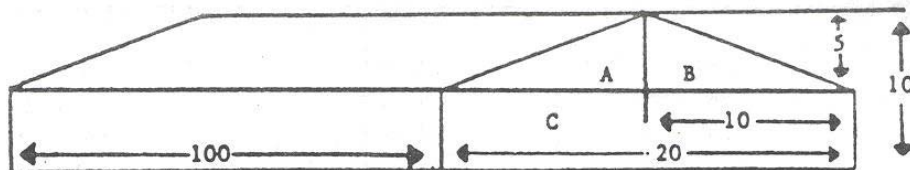
| If amount per 100 gals for a high volume spray is: | Use this amount in a mist blower | | | |
|---|---|----------------|---------------|--------------|
| | 25 gals | 10 gals | 2 gals | 1 gal |
| 1 pt | 6.25 pts | 2.5 pts | 8.0 fl ozs | 4.0 fl ozs |
| 1 qt | 6.25 qts | 5.0 pts | 1.0 pt | 8.0 fl ozs |
| 2 qts | 3.13 gals | 5.0 qts | 1.0 qt | 1.0 pt |
| 1 gal | 6.25 gals | 2.5 gals | 2.0 qts | 1.0 qt |

YOUR COUNTY AGENT CAN GIVE YOU FURTHER HELP WITH DILUTIONS.

GREENHOUSE TOMATO PESTICIDE RECOMMENDATIONS

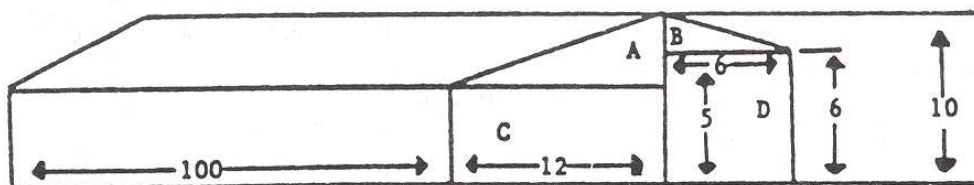
| PESTICIDE | FORMULATION | DOSAGE | WAITING PERIOD FROM APPLICATION TO HARVEST | RESIDUE TOLERANCE IN ppm | REMARKS |
|--------------------|---------------------------------|---|--|--------------------------|---|
| Admire | 2F | 1.4 ozs/1,000 plants (not more than 24 fl ozs per acre per year as a single soil application) | 0 | | One application per season applied after populations of aphids or white flies found on mature producing plants; apply as drench, drip irrigation or hand held or motorized calibrated irrigation equipment; may cause repelling of pollinators. |
| Dibrom (Naled) | 4 or 8 lbs EC | 1.0 oz/10,000 cu ft | 1 day | 0.5 | |
| Kelthane (Dicofol) | 35 WP | 0.75-1.5 pts | 2 days | | |
| Lannate (Methomyl) | 1.8 EC | 1-2 qts/200 gals water | 1 qt-7 days over 1 qt-14 days | | Complete coverage essential. |
| Lannate (Methomyl) | 90 WP | 0.5-1 lb/200 gals water | 0.5 lb-7 days Over 1/2 lb--14 days | | Complete coverage essential. |
| M-PEDE | | 1% | 0 | 0 | |
| Malathion | 10% aerosol | 1 lb/50,000 cu ft | 15 hrs | 8.0 | |
| Malathion | 57% EC | 1 qt/100 gals water | 1 day | 8.0 | |
| Malathion | 25% WP | 4 lbs/100 gals water | 1 day | 8.0 | |
| Malathion | 4%-5% dust | 0.5 lb/1,000 sq ft | 1 day | 8.0 | Apply to soil at base of plant. |
| Metaldehyde | Bail formulation | 0.5 lb actual/1,000 sq ft | -- | NF | Apply to soil around plants. Do not contaminate edible parts. |
| Methyl bromide | Liquid or pressurized container | 3 lbs/1,000 cu ft | -- | NF | Space fumigation. Make airtight. Expose for 48 hrs. |
| Methyl bromide | Liquid or pressurized container | 11 lbs/1,000 cu ft | | NF | Crates or boxes for harvesting or storing fumigation; expose for 24 hours. |
| Methyl bromide | Liquid or pressurized container | 3 lbs/1,000 cu ft | | 20.0 | Plant fumigation in greenhouse. Expose 4 hrs. Do not fumigate if temperature is above 90°F. |
| Pydrone | | Follow label. | 0 | 0 | |
| Thiodan | 10% aerosol | 1 lb/50,000 cu ft | 15 hours | 2.0 | Keep greenhouse tightly closed for 2 hours after application. |
| Thiodan | 50% WP | 1 lb/100 gals water | 1 day | 2.0 | Keep greenhouse tightly closed for 2 hours after application. |
| Thiodan | 2 lbs/gal EC | 1 qt/100 gals water | 1 day | 20.0 | Keep greenhouse tightly closed for 2 hours after application. |
| Vapona | 10% aerosol | 0.32 oz/1,000 cu ft | 1 day | 0.5 | |

CALCULATION OF GREENHOUSE VOLUME



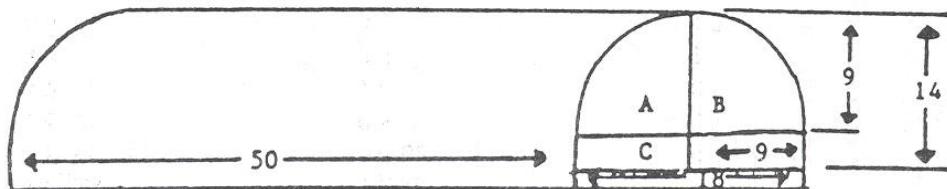
EVEN SPAN STRUCTURE

Area A and B = $.5(5 \times 10) = 25$
 Area C = $20 \times 5 = 100$
 Total Area = $A + B + C = 100 + 25 + 25 = 150$
 Volume = Length x Total Area = $100 \times 150 = 15,000$ cu.ft.



3/4 SPAN HOUSE

Area A = $.5(12 \times 5) = 30$
 Area B = $.5(4 \times 6) = 12$
 Area C = $12 \times 5 = 60$
 Area D = $6 \times 6 = 36$
 Total Area = $A + B + C + D = 30 + 12 + 60 + 36 = 138$ sq. ft.
 Volume = Length x Total Area = $100 \times 138 = 13,800$ cu. ft.



ROUNDTOP STRUCTURE

Area A + B = $.5(\pi r^2) = 127$
 Area C = $5 \times 18 = 90$ sq. ft.
 Total Area = $A + B + C = 127 + 90 = 217$
 Volume = Length x Total Area = $50 \times 217 = 10,850$ cu. ft.