

meets Food Chemical Codex specifications can be used in postharvest treatment of apples. Calcium treatment will be of little benefit to apples harvested after the projected optimum harvest date. Fruit injury from calcium chloride has been found to be associated with iron in the solution. Coat steel tanks or use plastic tanks and piping to minimize this problem.

11.4 Notes on Scald Control

11.4.1 Materials

All DPA (diphenylamine) formulations are suspensions and become weaker with use. Replenishment with full-strength material does not replace the DPA removed by the apples. Test kits are available to determine concentrations of make-up material. Do not exceed 30 bins or 750 bushels/100 gal of made-up DPA; empty the reservoir tank and start again with fresh material.

Cartons containing apples that have been treated postharvest with DPA and fungicide must be so labeled.

1-Methylcyclopropene (SmartFresh) reduces or prevents storage scald in most varieties of apple when applied within one week of harvest. SmartFresh does not prevent scald in Cortland. For application, fruit are held in an airtight room or other container while a fumigant is released from a premeasured amount inside a generator system that mixes the material with water. Fruit must remain in the seal room for 24 hours. After treatment, vent the room. Fruit may be treated at ambient or chilled temperatures.

11.4.2 Application Equipment

Bins of apples are sometimes dipped into a tank containing postharvest preservatives, but more often the bins are moved by conveyors, rollers, or truck bed under a cascade of the preservatives. The bins should be moved slowly under the cascade, with 35-40 gal of preservatives

being delivered into each bin. The pump should be sized to deliver 35-40 gal of preservatives/bin at the desired rate of bin movement under the cascade. If stacked bins are moved under the cascade, the top bins should receive 35-40 gal and side nozzles should be positioned to deliver additional gallonage to the lower bins, even though drainage holes are provided in the bin floors. Application equipment is commercially available, but operators usually fabricate their applicators to meet the needs of their own operation. Dirty truckloads should be rinsed with clean water before treatment to minimize the accumulation of dirt in the reservoir tank.

11.4.3 Variety Requirements

Materials and concentrations for the major apple varieties in New England are listed in Table 11.4.1. Important: DPA retards chlorophyll loss in Golden Delicious and, therefore, should not be used unless the apples have developed full yellow color at harvest.

The very low susceptibility of Empire, Honeycrisp and Gala to scald indicates that they can be safely stored without any preservative treatment. However, if preservative treatment is demanded, then use 1000 ppm DPA in the drench solution.

Table 11.4.1. Recommended diphenylamine concentrations for varieties subject to scald.

| Variety | Diphenylamine (ppm) |
|--|---------------------|
| Baldwin | 1000-1500 |
| Braeburn | 1000 |
| Cortland | 2000 |
| Delicious | 1000-1500 |
| Empire, Golden Delicious, Idared, Jonagold, McIntosh | 1000 |
| Mutsu | 2000 |
| Rome, Stayman | 1500 |

11.5 Apple Spray Table

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|---|------------------------------|--|----------------|--------------|---------------|------------------------|
| Silver Tip | | | | | | |
| Apple scab inoculum reduction | Urea fertilizer ground spray | | 40 lb/A | 0 | 0 | [2.1] |
| Crown rot (collar rot) | Ridomil Gold 4EC | 0.5 pt/100 gal (drench) | 2 qt/A (spray) | 12 | see comments | [7.2] |
| | OR Aliette 80WP | .5-1 gal | 2.5-5/A | 12 | 14 | [7.3] |
| European red mite, European fruit lecanium | (§) oil | 2-3 gal/100 gal | | 12 | 0 | [20.2] |

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| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|--|---|----------------|----------------------------|-----------------------------|--------------------------------------|
| Green Tip | | | | | | |
| Apple Scab | Captan 50WP | 1-2 lb/100 gal | 8 lb/A | 24 | 0 | [2.1, 2.2] |
| | or Captan 80WP | 0.65-1.25 lb/100 gal | 5 lb/A | 24 | 0 | |
| | or Captec or Captan 4L | 0.5-1 qt/100 gal | 4 qt/A | | | |
| | <i>OR</i> Dithane/Manzate/ Penncozeb 75DF or 80WP | 1-2 lb/100 gal | 3-6 lb/A | 24 | 77 | [1.3, 2.2] |
| | or Manzate/Dithane/ Penncozeb Flowables | | 2.4-4.8 qt/A | 24 | 77 | [1.3, 2.2] |
| | or Polyram 80DF | 1-2 lb/100 gal | 3-6 lb/A | | | |
| | <i>OR</i> Vanguard 75WG | | 3-5 oz/A | 12 | 72 | |
| | <i>OR</i> Scala 600SC | | 7-10 fl oz/A | 12 | 72 | |
| | <i>OR</i> Syllit FL | | 2 pt/A | 48 | 7 | |
| | | plus: Captan 50 WP | 1 lb/100 gal | | 24 (E) | 0 |
| | or Captan 80 WDG | .65-1.25 lb/100 gal | 2.5 lb/A | 24 | 0 | |
| | or Captec or Captan 4L | 1 pt/100 gal | 3-4 lb/A | 24 | 0 | |
| | or Manzate/Penncozeb 75DF, 80WP | 1 lb/100 gal | 2.5 lb/A | 24 | 0 | |
| Fire blight | Bordeaux mixture, 8-8-10 (copper sulfate) | 8 lb/100 gal | | 24 | BL | [8.4] |
| | (spray lime) | 8 lb/100 gal | | | | |
| | plus (§oil) | 1 qt/100 gal | | | | |
| | <i>OR</i> Champ Flowable | 1-2 qt/100 gal | 2.75-5.25 qt/A | 24 | HIG | |
| | or Champ Dry Prill | | 5.5-10.5 lb/A | 24 | HIG | |
| | or Champ WP | | 8-16 lb/A | 24 | HIG | |
| | or §Champ WG | | 8-16 lb/A | 24 | HIG | |
| | <i>OR</i> C-O-C-S WDG | 2-4 lb/100 gal | | 24 | HIG | |
| <i>OR</i> Cuprofix MZ Disperss or Cuprofix Ultra 40 Disperss | | 4-7 lb/A | 48 | HIG | | |
| | | 5-7.5 lb/A | 48 | HIG | | |
| <i>OR</i> Kocide 3000 | 1.11-2.3 lb/100 gal | 3.5-7.0 lb/A | 48 | HIG | | |
| or other (§)copper products | see comments | | | | | |
| European red mite | (§)oil | 2 gal/100 gal | | 12 | 0 | [20.3] |
| Rosy apple aphid | Beleaf 50SG | see label | 2.0-2.8 oz/A | 12 | 21 | [27.2] |
| | <i>OR</i> *Lorsban 4EC | 1 pt/100 gal | see label | 96 | PB | |
| | or Lorsban 75WG | 0.3-0.67 lb/100 gal | see label | 96 | PB | |
| | <i>OR</i> *Supracide 25WP | 1-2 lb/100 gal | 4-12 lb/A | (E) | PB | |
| | or *Supracide 2EC | 1-2 pt/100 gal | 3-12 pt/A | 12 | 35 | |
| <i>OR</i> *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | | |
| Half-Inch Green | | | | | | |
| Apple scab | Same materials as Green Tip spray | | | | | [2.3] |
| <i>OR</i> Flint 50WG | | 0.67-0.8 oz/100 gal | 2-2.5 oz/A | 12 | 14 | [2.4], [2.14] |
| <i>OR</i> Sovran 50WG | | 1.1-2.1 oz/100 gal | 3.2-6.4 oz/A | 12 | 30 | |

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| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|--|--|--------------------------|--|---------------|------------------------------|
| Half-Inch Green (continued) | | | | | | |
| Dogwood borer, American plum borer | *Lorsban 4EC | 1.5 qt/100 gal/A | Trunk spray | 96 | 28 | [17.1] |
| | or Lorsban 75WG | 2 lb/100 gal/A | Trunk spray | 96 | 28 | |
| | or *Lorsban Advanced 3.8L | 1.5-4 pt/100 gal/A | Trunk spray | 96 | 28 | |
| European red mite | (§)oil | 2 gal/100 gal | see label | 12 | 0 | [20.4] |
| Redbanded leafroller | *Guthion 50WS | 0.5 lb/100 gal | 2-3 lb/A | 14-44 days (E) | 14-21 | [26.1] |
| | OR Imidan 70W | .75-1 lb/100 gal | 2.13-5.33 lb/A | 96 for workers 14 days for public | 7 | |
| Rosy apple aphid | Refer to Green Tip | | | | | |
| | OR Esteem 35WP | see label | 3-5 oz/A | 12 | 45 | [27.2] |
| San Jose scale | *Centaur 0.7WDG | see label | 34.5-46 oz/A | 12 | 14 | |
| | OR Esteem 35WP plus oil | 4-5 oz/A 2 gal/100 gal | | 12 12 | 45 0 | |
| | OR *Lorsban 4EC or Lorsban 75WG | 1 pt/100 gal 0.3-0.67 lb/100 gal | see label see label | 96 | PB | [28.3] |
| | OR (§)oil | 2 gal/100 gal | see label | 12 | 0 | |
| | OR *Supracide 25WP or *Supracide 2EC | 0.5 lb/100 gal 1-2 pt/100 gal | 4-12 lb/A 3-12 pt/A | 72 | PB | |
| | Tight Cluster | | | | | |
| Apple Scab | Adament 50WG | | 4-5 oz/A | 12 | 75 | |
| | OR Captan 50WP or Captan 80WP or Captec or Captan 4L | 1-2 lb/100 gal 0.65-1.25 lb/100 gal 0.5-1 qt/ 100gal | 8 lb/A 5 lb/A | 24 24 | 0 0 | |
| | OR Dithane/Manzate/ Penncozeb 75DF or 80WP or Manzate/Dithane/ Penncozeb Flowables or Polyram 80DF | 1-2 lb/100 gal 1-2 lb/100 gal | 3-6 lb/A 2.4-4.8 qt/A | 24 24 | 77 77 | [1.3], [2.2] [1.3], [2.2] |
| | OR Flint 50WG | 0.67-0.8 oz/100 gal | 2-2.5 oz/A | 12 | 14 | [2.4],[2.14] |
| | OR Indar 2F | | 6-8 fl oz/A | 12 | 14 | |
| | OR Inspire Super MP | | 8 oz/A | 12 | 72 | |
| | OR Sovran 50WG | 1.0-1.6 oz/100 gal | 3.2-6.4 oz/A | 12 | 30 | [2.4], [2.14] |
| | OR Rally 40WSP or Vintage SC or *Procure 50WS | 2-4 fl oz/100 gal 3-5 oz/100 gal | 5-8 oz/A 6-12 fl oz/A | 24 24 | 14 30 | [2.5],[2.13] |
| | plus: Captan 50WP or Captan 80WDG or Captec or Captan 4L | 1 lb/100 gal 0.65-1.25 lb/100 gal 1 pt/100 gal | | 24 (E) | 0 | |

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|---|---|---|-----------------|---------------------|----------------------|-------------------------------|
| Tight Cluster (continued) | | | | | | |
| Apple Scab (continued) | or Manzate/ Penncozeb 75DF, 80WP | 1 lb/100 gal | 2.5 lb/A | 24 | 77 | |
| | or Polyram 80DF | 1-2 lb/100 gal | 3-6 lb/A | 24 | 77 | |
| | OR Tebuzol 45DF | 2 oz/100 gal | 4-8 oz/A | 120 | 75 | |
| Powdery mildew | Adament 50WG | | 4-5 oz/A | 12 | 75 | |
| | OR Topsin M 70WP, WDG | 4-6 oz/100 gal | 0.75-1 lb/A | 48 | 1 | [2.12] |
| | OR Thiophanate-methyl 85WDG | .2-.3 lb/100 gal | .6-.8 lb/A | 48 | 1 | [2.12] |
| | OR §JMS Stylet-Oil | 1-2% solution | | 12 | 0 | [9.3] |
| | OR Rally 40WSP | | 5-10 oz/A | 24 | 14 | |
| | OR *Procure 50WS | 3-5 oz/100 gal | | 12 | 14 | |
| | OR Indar 2F | | 6-8 fl oz/A | 12 | 14 | |
| | OR Inspire Super MP | | 8.5-12 fl oz/A | 12 | 14 | |
| | OR Vintage SC | 3 fl oz/100 gal | | 24 | 30 | |
| | OR Sulfur 95WP or Sulfur 6F | 2 lb/100 gal 2 pt/100 gal | | 24 | 0 | |
| | or §Microthiol Disperss | | 10-20 lb/A | 24 | 0 | |
| | or (§)Sulfur, many other products; see label | | | | | |
| | OR Bayleton/Triadimefon 50DF | 1-2 oz/100 gal | | 12 | 45 | [9.4] |
| | OR Flint 50WG | 0.67-0.8 oz/100 gal | 2-2.5 oz/A | 12 | 14 | |
| | OR Sovran 50WG | 1.0-1.6 oz/100 gal | 4-6.4 oz/A | 12 | 30 | |
| OR Tebuzol 45DF | 2 oz/100 gal | 4-8 oz/A | 120 | 75 | | |
| Dogwood borer, American plum borer | *Lorsban 4EC | 1.5 qt/100 gal/A | Trunk spray | 96 | 28 | [17.1] |
| | or Lorsban 75WG | 2 lb/100 gal/A | Trunk spray | 96 | 28 | |
| | or *Lorsban Advanced 3.8L | 1.5-4 pt/100 gal/A | Trunk spray | 96 | 28 | |
| European red mite | Apollo 4SC | 1-2 fl oz/100 gal | 4-8 fl oz/A | 12 | 45 | [20.5] |
| | OR (§)oil | 1 gal/100 gal | see label | 12 | | [20.6] |
| | OR Envidor 2SC | | 16-18 fl oz/A | 12 | 7 | [20.5] |
| | OR Onager 1EC | see label | 12-24 fl oz/A | 12 | 28 | [20.5] |
| | OR Savey 50DF | see label | 3 oz/A | 12 | 28 | [20.5] |
| | OR Zeal 72WS | see label | 2-3 oz/A | 12 | 14 | [20.5] |
| Rosy apple aphid | Refer to Green Tip | | | | | [27.2] |
| | OR Beleaf 50SG | see label | 2.0-2.8 oz/A | 12 | 21 | |
| San Jose scale | Refer to Half-Inch Green | | | | | [28.3] |
| Tarnished plant bug | *Ambush 25WP | see label | 6.4-25 oz/A | 12 | PF | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 5-14.5 fl oz/A | 12 | 21 | |
| | OR Avaunt 30 WDG | Fixed rate per acre | 5-6 oz/A | 12 | 14 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.0-2.4 fl oz/A | 12 | 7 | |

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| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|--|--|---|-------------------------|----------------------|------------------------|
| Tight Cluster (continued) | | | | | | |
| Tarnished plant bug (continued) | OR Beleaf 50SG | see label | 2.0–2.8 oz/A | 12 | 21 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.7–16 fl oz/A | 24 | 14 | |
| | OR *Pounce 25WP | see label | 6.4–25.6 oz/A | 12 | PF | |
| | OR *Proaxis 0.5CS | see label | 2.6–5.1 fl oz/A | 24 | 21 | |
| | OR *Voliam Xpress EC | see label | 6–12 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.3–2.5 fl oz/A | 24 | 21 | |
| Pink | | | | | | |
| Apple rusts | Adament 50WG | | 4-5 oz/A | 12 | 75 | [1.3] |
| | OR Dithane/Manzate/ Penncozeb 75DF or 80WP or Manzate/Dithane/ Penncozeb Flowables or Polyram 80DF | 1-2 lb/100 gal | 3-6 lb/A | 24 | 77 | [1.3],[2.2] |
| | | | 2.4-4.8 qt/A | 24 | 77 | [1.3], [2.2] |
| | OR Ferbam 76WDG | 1-1.5 lb/100 gal | 4-6 lb/A | 24 | 7 | |
| | OR Rally 40WSP | | 5-8 oz/A | 24 | 14 | |
| | OR Indar 2F | | 6-8 fl oz/A | 12 | 14 | |
| | OR Inspire Super MP | | 8.5-12 fl oz/A | 12 | 14 | |
| | OR *Procure 50WS | 3-5 oz/100 gal | | 24 | 14 | |
| | OR Vintage SC | 3 fl oz/100 gal | | 24 | 30 | |
| | Apple scab | Adament 50WG | | 4-5 oz/A | 12 | 75 |
| OR Captan 50WP or Captan 80 WDG or Captec or Captan 4L | | 1-2 lb/100 gal 0.65-1.25 lb/100 gal 0.5- 1 qt/100 gal | 4-8 lb/A 2.5-5 lb/A | 24 24 24 | 0 0 0 | [2.6], [2.7] |
| OR Sovran 50WG | | 1.0-1.6 oz/100 gal | 3.2-6.4 oz/A | 12 | 30 | [2.4], [2.14] |
| OR Cabrio EG | | 4 oz/100 gal | 12 oz/A | 12 | 0 | [2.4], [2.14] |
| OR Flint 50WG | | 0.67-0.8 oz/100 gal | 2-2.5 oz/A | 12 | 14 | [2.4], [2.14] |
| OR Inspire Super MP | | | 8.5-12 fl oz/A | 12 | 14 | |
| OR Tebuzol 45DF | | 2 oz/100 gal | 4-8 oz/A | 120 | 75 | |
| OR Topsin M 70WP | | 2-3 oz/100 gal | 0.75-1 lb/A | 48 | 1 | [2.12] |
| <i>plus :</i> | | | | | | |
| Captan 50WP or Captan 80WP or Captec or Captan 4L or Dithane/Manzate/ Penncozeb 75DF | | 1 lb/100 gal 5/8 lb/100 gal 1 pt/100 gal 1 lb/100 gal | 4 lb/A 2.5 lb/A 2 qt/A 3 lb/A | 24(E) 24 24 24 | 0 77 77 77 | [2.2] |
| or Manzate/Dithane/ Penncozeb Flowables or Polyram DF | | see label 1 lb/100 gal | 2.4 qt/A 3 lb/A | 24 24 | 77 77 | [1.3], [2.2] [2.2] |
| OR Rally 40WSP or Vintage SC or *Procure 50WS or *Procure 480SC | | | 5-8 oz/A 6-12 fl oz/A 8-16 oz/A 8-16 fl oz/A | 24 24 12 24 | 14 30 14 14 | [2.5],[2.13] |

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| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|---|---|---|-------------------------|----------------------------|-----------------------------|--------------------------------------|
| <i>Pink (continued)</i> | | | | | | |
| Apple scab <i>(continued)</i> | <i>plus:</i> | | | | | |
| | Captan 50WP | 1 lb/100 gal | 4 lb/A | 24(E) | 0 | |
| | or Captan 80WP | 5/8 lb/100 gal | 2.5 lb/A | | | |
| | or Captan 4L | 1 pt/100 gal | 2 qt/A | | | |
| | or Dithane/Manzate/ Penncozeb 75DF, 80WP, 80DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] |
| | or Manzate/Dithane/ Penncozeb Flowables | | 2.4 qt/A | 24 | 77 | [1.3], [2.2] |
| | or Polyram 80DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] |
| Black rot (frog-eye leafspot and fruit infections) | See comments | | | | | [4.2] |
| Blister spot | Aliette 80WDG | 0.5-1.0 lb/100 gal | 2.5-5 lb/A | 12 | 14 | [5.1] |
| Powdery mildew | Same materials as Tight Cluster spray | | | | | [9.5] |
| Dogwood borer, | *Lorsban 4EC | 1.5 qt/100 gal/A | Trunk spray | 96 | 28 | [17.1] |
| American plum borer, | <i>OR</i> *Lorsban 75WG | 2 lb/100 gal/A | Trunk spray | 96 | 28 | |
| Roundheaded apple tree borer | <i>OR</i> *Lorsban Advanced 3.8L | 1.5-4 pt/100 gal/A | Trunk spray | 96 | 28 | |
| European red mite | Envidor, Savey, Onager or Apollo, same as Tight Cluster | | | | | [20.7] |
| | <i>OR</i> *Vydate 2L | 1-2 pt/100 gal | 2-8 pt/A | 48 | 14 | |
| | <i>OR</i> Zeal 72WS | see label | 2-3 oz/A | 12 | 14 | [20.7] |
| Mullein plant bug | <i>OR</i> *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | <i>OR</i> Assail 30SG | Fixed rate per acre | 4 -8 oz/A | 12 | 7 | |
| | <i>OR</i> *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | <i>OR</i> *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | <i>OR</i> *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| Oriental fruit moth | (§)Pheromone mating disruption: | | | | | [14.2] |
| | Checkmate OFM-F | see label | 1.32-2.93 fl oz/A | 0 | 0 | |
| | or Isomate-M 100 | | 100 ties/A | 0 | 0 | |
| | or §Checkmate CM-OFM Duel | | 150-200 dispensers/A | 0 | 0 | |
| | or §Isomate-CM/OFM TT | | 200 ties/A | 0 | 0 | |
| Rosy apple aphid | Assail 30SG | Fixed rate per acre | 2.5-4.0 oz/A | 12 | 7 | |
| | <i>OR</i> Beleaf 50SG | see label | 2.0-2.8 oz/A | 12 | 21 | |
| | <i>OR</i> Calypso 4F | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| | <i>OR</i> Esteem 35WP | see label | 3-5 oz/A | 12 | 45 | |
| | <i>OR</i> *Lannate 2.4L | 0.75 pt/100 gal | 1.5-3 pt/A | 72 | 14 | |
| | or *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |

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|--|--|---|----------------------|---------------------|----------------------|-------------------------------|--------|
| Pink (continued) | | | | | | | |
| Rosy apple Aphid (continued) | OR *Lorsban 4EC | 1pt/100 gal | see label | | PB | | |
| | or Lorsban 75WG | 0.3-0.67 lb/100 gal | see label | | | | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | | |
| | OR *Thionex 50WP | .75 lb/100 gal | 4 lb/A | 20 days | 21 | | |
| | or *Thionex 3EC | 0.5 qt/100 gal | 2.67 qt/A | 7 days | 21 | | |
| | OR *Vydate 2L | 1-2 pt/100 gal | 2-8 pt/A | 48 | 14 | | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.3-2.5 fl oz/A | 24 | 21 | | |
| Spotted tentiform leafminer, Apple blotch leafminer | OR Altacor 35WDG | see label | 2.5-4.0 oz/A | 4 | 5 | | |
| | OR *Ambush 25WP | see label | 6.4-25.6 oz/A | 12 | PF | | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | | |
| | OR Assail 30SG | Fixed rate per acre | 2.5 oz/A | 12 | 7 | | |
| | OR Avaunt 30WDG | Fixed rate per acre | 5-6 oz/A | 12 | 14 | | |
| | OR §Aza-Direct 1.2L | see label | 11.5-42 fl oz/A | 4 | 0 | | |
| | OR Azatin XL 0.27EC | see label | 10-16 fl oz/A | 4 | 0 | | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.0-2.4 fl oz/A | 12 | 7 | | |
| | OR Belt 4SC | see label | 3-5 fl oz/A | 12 | 14 | | |
| | OR Calypso 4F | 0.5-1.0 fl oz/100 gal | 2-4 fl oz/A | 12 | 30 | | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.6-16 fl oz/A | 24 | 4 | | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | | |
| | OR §Neemix 4.5L | see label | 4-7 fl oz/A | 12 | 0 | | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48 (E) | 14 | | |
| | OR Pyrenone 0.5EC | see label | 12 fl oz/A | 12 | 1 | | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | | |
| | OR *Vydate 2L | 1 pt/100 gal | 2-4 pt/A | 48 | 14 | | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | | |
| | Tarnished plant bug | Refer to Tight cluster | | | | | [30.1] |
| Bloom | | | | | | | |
| Apple rusts | Refer to Pink spray for materials and comments | | | | | | |
| Apple scab | Same materials and rates as Pink spray | | | | | | |
| Black rot | Captan, Sovran, Flint, Topsin M, Thiophanate- methyl | Same rates as for scab, mildew and rusts | | | | | [4.2] |
| Blister spot | Aliette 80WDG | 0.5-1.0 lb/100 gal | 2.5-5 lb/A | 12 | 14 | [5.1] | |
| Blossom end rot | Captan, Sovran, Flint, Scala, Vanguard, Topsin M, Thiophanate-methyl | Same rates as for scab, mildew and rusts | | | | | [6.2] |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|---|--|-------------------------|--------------|---------------|------------------------|
| Bloom (continued) | | | | | | |
| Fire blight (blossom blight phase) | §Agri-Mycin 17WP | 0.5 lb/100 gal | | 12 | 50 | [8.3] |
| | or Firewall 17WP | 4-8 oz/ 100 gal | 2-4 lb/A | 12 | 50 | |
| | or Ag Streptomycin | 4-8 oz/ 100 gal | 2-4 lb/A | 12 | 50 | |
| | OR §Agri-Mycin 17WP | 0.25 lb/100 gal | | 12 | 50 | |
| | or Streptrol 17WP | | | | | |
| | or Firewall 17WP | | | | | |
| | <i>plus</i> Glycerine | | | | | |
| | <i>either</i> (CP or USP grade) | 2 qt/100 gal of finished spray (do not concentrate) | | | | |
| | or Regulaid | 1 pt/100 gal of finished spray (do not concentrate) | | | | |
| | OR Serenade ASO | 2-6 qt/A | | 4 | 0 | [8.7] |
| | OR Mycoshield | 1 lb/100 gal | | 12 | 60 | |
| Fire blight (shoot blight) | Apogee 27.5DF | 4.5-9 oz | | 12 | 45 | [8.6] |
| Powdery mildew | Same as Tight Cluster sprays | | | | | [9.2], [9.3] |
| Codling moth, Oriental fruit moth, Lesser appleworm | Checkmate OFM-F | | 1.32-2.93 fl oz/A | 0 | 0 | [14.2] |
| | OR Isomate-M 100 | | 100 ties/A | 0 | 0 | |
| | OR Checkmate CM-F | | 2.4-4.8 fl oz/A | 4 | 0 | |
| | OR §Isomate-C TT | | 200 ties/A | 0 | 0 | |
| | OR §Checkmate CM-OFM Duel | | 150-200 dispensers/A | 0 | 0 | |
| | OR §Isomate-CM/OFM TT | | 200 ties/A | 0 | 0 | |
| Mullein plant bug | Assail 30SG | Fixed rate per acre | 4-8 oz/A | 12 | 7 | [23.4] |
| | OR Calypso 4F | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| Obliquebanded leafroller | §Agree WG 3.8WS | see label | 1-2 lb/A | 4 | 0 | [24.1] |
| | OR §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR Intrepid 2F | see label | 8-16 oz/A | 4 | 14 | |
| | OR §Javelin 7.5WDG | 0.13-1 lb/100 gal | 0.5-4.0 lb/A | 4 | 0 | |
| Petal Fall | | | | | | |
| Apple rusts | Refer to Pink sprays for materials and comments | | | | | [4.2] |
| Apple scab | Adament 50WG | | 4-5 oz/A | 12 | 75 | |
| | OR Captan 50WP | 1-2 lb/100 gal | 8 lb/A | 24(E) | 0 | [2.7] |
| | or Captan 80WP | 0.65-1.25 lb/100 gal | 5 lb/A | 24 | 0 | |
| | or Captec or Captan 4L | 0.5- 1 qt/100 gal | | 24 | 0 | |
| | OR Dithane/Manzate/ Penncozeb 75DF or 80WP | 1-2 lb/100 gal | 3-6 lb/A | 24 | 77 | [1.3], [2.2] |
| | or Manzate/Dithane/ Penncozeb Flowables | | 2.4-4.8 qt/A | 24 | 77 | [1.3], [2.2] |
| | or Polyram 80DF | 1-2 lb/100 gal | 3-6 lb/A | | | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) | |
|--|--|--|----------------|--------------|---------------|------------------------|---------------|
| Petal Fall (continued) | | | | | | | |
| Apple scab (continued) | OR Flint 50WG | 0.67-0.8 oz/100 gal | | 12 | 14 | [2.4], [2.14] | |
| | OR Indar 2F | | 6-8 fl oz/A | 12 | 14 | | |
| | OR Inspire Super MP | | 8.5-12 fl oz/A | 12 | 14 | | |
| | OR Sovran 50WG | 1.0-1.6 oz/100 gal | | 12 | 30 | [2.4], [2.14] | |
| | OR Cabrio EG | 4 oz/100 gal | 12 oz/A | 12 | 0 | [2.4], [2.14] | |
| | OR Topsin M 70WP, WDG | 4-6 oz/100 gal | 0.75-1 lb/A | 48 | 1 | [2.12] | |
| | <i>plus:</i> | | | | | | |
| | Captan 50WP | 1 lb/100 gal | 8 lb/A | 24(E) | 0 | | |
| | or Captan 80WDG | 5/8 lb/100 gal | 5 lb/A | 24 | | | |
| | or Captec or Captan 4L | 1 pt/100 gal | | 24 | | | |
| | or Dithane/Manzate/ Penncozeb 75DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] | |
| | or Manzate/Dithane/ Penncozeb Flowables | | 2.4 qt/A | 24 | 77 | [1.3], [2.2] | |
| | or Polyram DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] | |
| | OR Rally 40WSP | | | 5-8 oz/A | 24 | 14 | [2.5], [2.13] |
| | or Vintage SC | 2-4 fl oz/100 gal | 6-12 oz/A | 24 | 30 | | |
| or *Procure 50WS | 3-5 oz/100 gal | | 12 | 14 | | | |
| <i>plus:</i> | | | | | | | |
| Captan 50WP | 1 lb/100 gal | 8 lb/A | 24(E) | 0 | | | |
| or Captan 80WDG | 5/8 lb/100 gal | 5 lb/A | 24 | | | | |
| or Captec or Captan 4L | 1 pt/100 gal | | 24 | | | | |
| or Dithane/Manzate/ Penncozeb 75DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] | | |
| or Manzate/Dithane/ Penncozeb Flowables | | 2.4 qt/A | 24 | 77 | [1.3], [2.2] | | |
| or Polyram DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] | | |
| Black rot | Captan, Sovran, Flint, Topsin M, Thiophanate- methyl | Same rates as for scab, mildew and rusts | | | | | |
| Blossom end rot | Captan, Sovran, Flint, Scala, Vanguard, Topsin M, Thiophanate-methyl | Same rates as for scab, mildew and rusts | | | | [6.2] | |
| Fire blight (Shoot blight) | Apogee 27.5D | 6-12 oz | | 12 | 45 | [8.6] | |
| Powdery mildew | Same as Tight Cluster sprays | | | | | [9.2], [9.3] | |
| Codling moth, Lesser appleworm, Oriental fruit moth | See Additional Summer Sprays | | | | | | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | | REI (hrs) | PHI (days) | Comments (see text) |
|---|--|--|-------------------|--------------|---------------|------------------------|
| | | | Amt/A | | | |
| Petal Fall (continued) | | | | | | |
| Comstock Mealybug | Assail 30SG | Fixed rate per acre | 4-8 oz/A | 12 | 7 | [15.2] |
| | OR *Centaur 0.7WDG | See label | 34.5 oz/A | 12 | 14 | |
| | OR Movento 240SC | see label | 6-9 fl oz/A | 24 | 7 | |
| | OR Portal 0.4EC | see label | 2 pt/A | 12 | 14 | |
| Dogwood borer, American plum borer | *Lorsban 4EC | 1.5 qt/100 gal/A | Trunk spray | 96 | 28 | [17.1] |
| | or Lorsban 75WG | 2 lb/100 gal/A | Trunk spray | 96 | 28 | |
| | or *Lorsban Advanced 3.8L | 1.5-4 pt/100 gal/A | Trunk spray | 96 | 28 | |
| European apple sawfly | *Guthion or Imidan same as for codling moth at this time | | | | | [18.1] |
| | OR Actara 25WDG | | 4.5-5.5 oz/A | 12 | 35 | [18.2] |
| | OR Altacor 35WDG | | 2.5-4.5 oz/A | 4 | 5 | |
| | OR Assail 30SG | Fixed rate per acre | 5-8 oz/A | 12 | 7 | |
| | OR Avaunt 30WDG | Fixed rate per acre | 5-6 oz/A | 12 | 14 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Calypso 4F | 1-2 fl oz/100 gal | | 12 | 30 | |
| | OR *Lannate 2.4L# | 1.5 pt/100 gal | | 72 | 14 | |
| European red mite | Acramite 50WS | see label | 0.75-1.0 lb/A | 12 | 7 | [20.9] |
| | OR *Agri-Mek 0.15EC | 2.5-5 oz/100 gal | 10-20 fl oz/A | 12 | 28 | [20.8] |
| | OR Apollo 4SC | 1-2 oz/100 gal | 480 fl oz/A | 12 | 45 | |
| | OR Envidor 2SC | | 16-18 fl oz/A | 12 | 7 | [20.9] |
| | OR Kanemite 15SC | see label | 31 fl oz/A | 12 | 14 | [20.9] |
| | OR Nexter 75 WS | see label | 4.4-5.2 oz/A | 12 | 25 | [20.9] |
| | OR Omni Supreme | 0.5-2 gal/100gal | see label | 12 | 0 | [20.10] |
| | OR Onager 1EC | see label | 12-24 fl oz/A | 12 | 28 | |
| | OR Portal 0.4EC | see label | 1-2 pt/A | 12 | 14 | |
| | OR §PureSpray Green | 1 qt-1.5 gal/100 gal | see label | 12 | 0 | [20.10] |
| | OR Savey 50DF | see label | 3-6 oz/A | 12 | 28 | |
| | OR §Stylet-Oil | 0.5-2 gal/100 gal | see label | 12 | 0 | [20.10] |
| | OR *Vendex 50WP | 4-8 oz/100 gal | 1-2 lb/A | 48 | 14 | |
| | OR Zeal 72WS | see label | 2-3 oz/A | 12 | 14 | [20.9] |
| Green fruitworms | Altacor 35WDG | see label | 2.5-4.0 oz/A | 4 | 5 | [21.1] |
| | OR *Ambush 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8- 14.5 fl oz/A | 12 | 28 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 1.4-2.0 fl oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3-5 oz/A | 12 | 14 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 16 fl oz/A | 24 | 14 | |
| | OR *Lannate 2.4L | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| | or *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR *Pounce 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|---|---------------------------------------|--|------------------------------|-------------------|---------------|------------------------|
| Petal Fall (continued) | | | | | | |
| Green fruitworms (continued) | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48 (E) | 14 | |
| | OR *Thionex 50WP or *Thionex 3EC | .75 lb/100 gal 0.5 qt | 4 lb/A 2.67 qt/A | 20 days 7 days | 21 21 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| Mullein plant bug | Actara 25WDG | see label | 4.5-5.5 oz/A | 12 | 35 | [23.3] |
| | OR Assail 30SG | Fixed rate per acre | 4 -8 oz/A | 12 | 7 | |
| | OR Calypso 4F | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| Obliquebanded leafroller | §Agree WG 3.8WS | see label | 1-2 lb/A | 4 | 0 | [24.2] |
| | OR Altacor 35WDG | see label | 2.5-4.5 oz/A | 4 | 5 | |
| | OR *Ambush 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3-5 oz/A | 12 | 14 | |
| | OR §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 16 fl oz/A | 24 | 14 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR §Deliver 18WG | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Entrust 80WP | 0.67-1 oz/100 gal | 2-3 oz/A | 4 | 7 | |
| | OR Intrepid 2F | see label | 12-16 fl oz/A | 4 | 14 | |
| | OR §Javelin 7.5WDG | 0.13-1 lb/100 gal | 0.5-4.0 lb/A | 4 | 0 | |
| | OR *Lannate 2.4LV or *Lannate 90SP | 0.75 pt/100 gal 0.25 lb/100 gal | 3.0 pt/A 1.0 lb/A | 72 72 | 14 14 | |
| | OR *Pounce 25WP | see label | 6.4-25.6 oz/A | 12 | 14 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48 (E) | 14 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| | OR SpinTor 2SC | Fixed rate per acre | 6-10 fl oz/A | 4 | 7 | |
| | OR *Voliam Xpress EC | See label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.3-2.5 fl oz/A | 24 | 21 | |
| | Oystershell scale | *Centaur 0.7WDG | | 34.5 oz/A | 12 | 14 |
| OR *Guthion Solupak | | 0.5 lb/100 gal | 2-3 lb/A | | 14/21 | |
| OR *Sevin 80WS, 80S or Sevin XLR Plus 4F | | see label 0.5 to 1.5 pt/100 gal | 1.88-3.75 lb/A 1.5-3 qt/A | 12 12 | 1 3 | [24.1] |
| Plum curculio | Actara 25WDG | see label | 4.5–5.5 oz/A | 12 | 35 | [25.1], |
| | OR Avaunt 30WDG | Fixed rate per acre | 5–6 oz/A | 12 | 14 | [25.3] |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|-------------------------------------|---|--|-----------------|---|---------------|------------------------|
| Petal Fall (continued) | | | | | | |
| Plum curculio (continued) | OR Calypso 4F | 1-2 fl oz/100 gal | 4–8 fl oz/A | 12 | 30 | |
| | OR *Guthion Solupak | 0.5-0.75 lb/100 gal | 2–3 lb/A | 14 Days | 14/21 | |
| | OR Imidan 70W | 0.75-1 lb/100 gal | 2.1–5.3 lb/A | 96 for workers; 14 Days public | 7 | |
| | OR *Leverage 360 1L | 0.6-0.7 fl oz/100 gal | 2.4–2.8 fl oz/A | 12 | 7 | |
| | OR *Voliam Xpress EC | Fixed rate per acre | 6–12 oz/A | 24 | 21 | |
| | <i>Insecticide options with at least a “Fair” efficacy rating against Plum curculio</i> | | | | | |
| OR Agri-Flex SC | 1.0–2.0 fl oz | 5.5–8.5 fl oz | 4 | 35 | | |
| OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 5–14.5 fl oz/A | 12 | 21 | | |
| OR Assail 30SG | Fixed rate per acre | 4–8 oz/A | 12 | 7 | | |
| OR *Battalion 0.2L | Fixed rate per acre | 7–14 fl oz/A | 12 | 21 | | |
| OR *Battalion 1.5 C | Fixed rate per acre | 0.9–1.9 fl oz/A | 12 | 21 | | |
| OR *Baythroid XL 1L | Fixed rate per acre | 2.4–2.8 fl oz/A | 12 | 7 | | |
| OR *Danitol 2.4EC | Fixed rate per acre | 16 fl oz/A | 24 | 14 | | |
| OR Delegate 25WG | Fixed rate per acre | 6–7 oz/A | 4 | 7 | | |
| OR *Endigo ZC | Fixed rate per acre | 5–6 fl oz/A | 24 | 35 | | |
| OR *Lannate 2.4LV | 0.75 pt/100 gal | 3 pt/A | 72 | 14 | | |
| OR *Lannate 90SP | 0.25 lb/100 gal | 1 lb/A | 72 | 14 | | |
| OR *Pounce 25W | 1.6-4 oz/100 gal | 6.4–16 oz/A | 12 | PF | | |
| OR *Proaxis 0.5CS | see label | 2.6–5.1 fl oz/A | 24 | 21 | | |
| OR Sevin XLR Plus, 4F | 0.75–1.5 pt/100 gal | 1–3 qt/A | 12 | 3 | | |
| OR Sevin 80S | 0.45–0.9 lb/100 gal | 1.9–3.75 lb/A | 12 | 3 | | |
| OR §Surround 95WP | 25-50 lbs./100 gal | 25–50 lb/A | 4 | 0 | [25.2] | |
| OR *Voliam Flexi WDG | Fixed rate per acre | 6–7 oz/A | 12 | 35 | | |
| OR *Warrior 1CS | Fixed rate per acre | 2.5–5.1 fl oz/A | 24 | 21 | | |
| OR *Warrior II 2CS | Fixed rate per acre | 1.3–2.5 fl oz/A | 24 | 21 | | |
| Redbanded leafroller | §Agree WG 3.8WS | see label | 1-2 lb/A | 4 | 0 | [27.2] |
| | OR Altacor 35WDG | see label | 2.5-4.5 oz/A | 4 | 5 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | |
| | OR Belt 4SC | see label | 3-5 oz/A | 12 | 14 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR §Deliver 18WG | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 oz/A | 24 | 35 | |
| | OR *Guthion 50WS | 0.5 lb/100 gal | 2-3 lb/A | 14 days(E) | 14 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|-----------------------------|--|---------------------|--|---------------|------------------------|
| Petal Fall (continued) | | | | | | |
| Redbanded leafroller (continued) | OR Imidan 70W | 0.75-1 lb/100 gal | 2.13-5.33 lb/A | 96 for workers 14 Days public | 7 | |
| | OR §Javelin 7.5WDG | 0.13-1 lb/100 gal | 0.5-4.0 lb/A | 4 | 0 | |
| | OR *Lannate 2.4L | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48(E) | 14 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | Rosy apple aphid | Assail 30SG | Fixed rate per acre | 2.5-4 oz/A | 12 | 7 |
| OR Beleaf 50SG | | see label | 2.0-2.8 oz/A | 12 | 21 | |
| OR Calypso 4F | | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| OR *Lannate 2.4L | | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| or *Lannate 90SP | | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| OR *Leverage 360 | | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| OR Movento 240SC | | see label | 6-9 fl oz/A | 24 | 7 | |
| OR *Thionex 50WP | | .75 lb/100 gal | 4 lb/A | 20 days | 21 | |
| or *Thionex 3EC | | 0.5 qt/100 gal | 2.67 qt/A | 7 days | 21 | |
| OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | | |
| Spotted tentiform leafminer, Apple blotch leafminer | Actara 25WDG | see label | 4.5-5.5 oz/A | 2 | 35 | [29.2] |
| | OR *Agri-Mek 0.15EC | 2.5-5 oz/100 gal | 10-20 fl oz/A | 12 | 28 | |
| | OR Altacor 35WDG | see label | 2.5-4.0 oz/A | 4 | 5 | |
| | OR *Ambush 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | OR Assail 30SG | Fixed rate per acre | 2.5 oz/A | 12 | 7 | |
| | OR Avaunt 30WDG | Fixed rate per acre | 5-6 fl oz/A | 12 | 14 | |
| | OR Actara 25WDG | see label | 4.5-5.5 oz/A | 2 | 35 | |
| | OR Admire Pro | see label | 2.8 oz/A | 12 | 7 | |
| | OR Altacor 35WDG | see label | 2.5-4 oz/A | 4 | 5 | |
| | OR Assail 30SG | see label | 2.5 oz/A | 12 | 7 | |
| | OR §Aza-Direct 1.2L | see label | 12.5-42 fl oz/A | 4 | 0 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.0-2.4 fl oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3-5 fl oz/A | 12 | 14 | |
| | OR Calypso 4F | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.7-16 fl oz/A | 24 | 14 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR *Lannate 2.4L# | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|---------------------------------------|--|--------------------------------|-----------------|---------------|------------------------|
| Petal Fall (continued) | | | | | | |
| Spotted tentiform leafminer, Apple blotch leafminer (continued) | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR §Neemix 4.5L | see label | 7-16 fl oz/A | 12 | 0 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48 (E) | 14 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2CS | Fixed rate per acre | 1.3-2.5 fl oz/A | 24 | 21 | |
| Tarnished plant bug | *Ambush 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.0 -2.4 fl oz/A | 12 | 7 | |
| | OR Beleaf 50SG | see label | 2.0-2.8 oz | 12 | 21 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.7-16 fl oz/A | 24 | 14 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 oz/A | 24 | 35 | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR *Pounce 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| White apple leafhopper, Rose leafhopper, Potato leafhopper | Actara 25WDG | see label | 2-2.75 oz/A | 12 | 14 | [32.1] |
| | OR Admire Pro | see label | 2.8 fl oz/A | 12 | 7 | |
| | OR *Agri-Mek 0.15EC | 2.5-5 fl oz/100 gal | 10-20 fl oz/A | 12 | 28 | |
| | OR *Ambush 25WP | see label | 6.4-25.6 oz/A | 12 | PF | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 28 | |
| | OR Assail 30SG | Fixed rate per acre | 2.5-4 oz/A | 12 | 7 | |
| | OR Avaunt 30WDG | Fixed rate per acre | 5-6 oz/A | 12 | 14 | |
| | OR §Aza-Direct 1.2L | see label | 12.5-42 fl oz/A | 4 | 0 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 1.4 -2.0 fl oz/A | 12 | 7 | |
| | OR Calypso 4F | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| | OR *Centaur 0.7WDG | see label | 34.5 oz/A | 12 | 14 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.67-16 fl oz/A | 24 | 14 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR §Neemix 4.5L | see label | 7-16 fl oz/A | 12 | 0 | |
| | OR Portal 0.4L | 1 pt/100 gal | 2 pt/A | 12 | 14 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR Sevin 80S or Sevin XLR Plus, 4F | 1.5 lb/100 gal 0.25-0.75 pt/100 gal | 0.63-0.88 lb/A 0.5-1.5 qt/A | 12 | 3 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|-------------------------------------|---|--|---------------------------|--------------|---------------|------------------------|
| Petal Fall (continued) | | | | | | |
| White apple leafhopper, | OR *Thionex 50WP | .75 lb/100 gal | 4 lb/A | 20 days | 21 | |
| | or *Thionex 3EC | 0.5 qt/100 gal | 2.67 qt/A | 7 days | 21 | |
| Rose leafhopper, | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Vydate 2L# | 1-2 pt/100 gal | 2-8 pt/A | 48 | 14 | |
| Potato leafhopper (continued) | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| Additional Summer Sprays | | | | | | |
| Apple rust diseases | Refer to Pink sprays for materials and comments | | | | | |
| Apple scab | Captan 50WP | 1-2 lb/100 gal | 4-8 lb/A | 24 | 0 | [2.91] |
| | or Captan 80 WDG or Captec or Captan 4L | 0.65-1.25 lb/100 gal 0.5- 1 qt/100 gal | 2.5-5 lb/A | 24 | 0 | |
| OR | Dithane/Manzate/ Penncozeb 75DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.10] |
| | or Manzate/Dithane/ Penncozeb Flowables or Polyram DF | see label 1 lb/100 gal | 2.4 qt/A 3 lb/A | 24 | 77 | |
| OR | Flint 50WG | 0.67-0.8 oz/100 gal | | 12 | 14 | [2.4, 2.14] |
| OR | Indar 2F | | 6-8 fl oz/A | 12 | 14 | |
| OR | Inspire Super MP | see label | 8.5-12 fl oz/A | 12 | 14 | |
| OR | Sovran 50WG | 1.0-1.6 oz/100 gal | 4-6 oz/A | 12 | 30 | [2.4, 2.14] |
| OR | Pristine 38WP | | 14.5-18.5 oz/A | 12 | 0 | |
| OR | Cabrio EG | | 12 oz/A | 12 | 0 | [2.14] |
| OR | Topsin M 70WP | 4-6 oz/100 gal | 0.75-1 lb/A | 48 | 1 | [2.12] |
| | or Thiophanate-methyl 85WDG | .2-.3 lb/100 gal | .6-.8 lb/A | 48 | 1 | |
| <i>plus:</i> | | | | | | |
| OR | Captan 50WP | 1 lb/100 gal | 4 lb/A | 24(E) | 0 | |
| | or Captan 80WP or Captec or Captan 4L | 5/8 lb/100 gal 1 pt/100 gal | 2.5 lb/A 2 qt/A | | | |
| OR | or Dithane/Manzate/ Penncozeb 75DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] |
| | or Manzate/Dithane/ Penncozeb Flowables or Polyram DF | see label 1 lb/100 gal | 2.4 qt/A 3 lb/A | 24 | 77 | [1.3, 2.2] [2.2] |
| OR | Rally 40WSP | | 5-8 oz/A | 24 | 14 | [2.5],[2.13] |
| | or Vintage SC or *Procure 50WS or *Procure 480SC | 2-4 fl oz/100 gal 3-5 oz/100 gal | 6-12 fl oz/A 8-16 oz/A | 24 12 | 30 14 | |
| <i>plus:</i> | | | | | | |
| OR | Captan 50WP | 1 lb/100 gal | 4 lb/A | 24(E) | 0 | |
| | or Captan 80WP | 5/8 lb/100 gal | 2.5 lb/A | | | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | | REI (hrs) | PHI (days) | Comments (see text) |
|--|--|--|----------------|--------------|---------------|------------------------|
| | | Amt/A | | | | |
| Additional Summer Sprays (continued) | | | | | | |
| Apple scab (continued) | or Captec or Captan 4L | 1 pt/100 gal | 2 qt/A | | | |
| | or Dithane/Manzate/ Penncozeb 75DF, 80WP, 80DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] |
| | or Manzate/Dithane/ Penncozeb Flowables | | 2.4 qt/A | 24 | 77 | [1.3], [2.2] |
| | or Polyram 80DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.2] |
| Bitter Rot | Adament 50WG | | 6 oz/A | 120 | 75 | |
| | OR Captan 50WP | 1 lb/100 gal | 4 lb/A | 24 (E) | 0 | [3.1] |
| | or Captan 80WDG | 5/8 lb/100 gal | 2.5 lb/A | 24 | 0 | |
| | or Captan 4L | 1 pt/100 gal | | 24 | 0 | |
| Black rot, White rot | Adament 50WG | | 6 oz/A | 12 | 75 | |
| | OR Cabrio EG | | 12 oz/A | 12 | 0 | |
| | OR Captan 50WP | 1-2 lb/100 gal | | 24 (E) | 0 | [4.3] |
| | or Captan 80WP | 0.65-1.25 lb/100 gal | | | | |
| | or Captec or Captan 4L | 0.5-1 qt/100 gal | | | | |
| | OR Flint 50WG | 0.5 oz/100 gal | 1.5 oz/A | 12 | 14 | [2.14] |
| | OR Sovran 50WG | 1.0-1.6 oz/100 gal | 4-6.4 oz/A | 12 | 30 | [2.14] |
| | OR Pristine 38WP | | 14.5-18.5 oz/A | 12 | 0 | |
| | OR Topsin M 70WP | 4-6oz/100 gal | 0.75-1 lb/A | 48 | 1 | [10.3], [10.4] |
| | plus: Captan 50WP | 1 lb/100 gal | 4 lb/A | 24(E) | 0 | |
| or Captan 80WP | 5/8 lb/100 gal | 2.5 lb/A | | | | |
| or Captec or Captan 4L | 1 pt/100 gal | 2 qt/A | | | | |
| or Dithane/Manzate/ Penncozeb 75DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | | |
| or Manzate/Dithane/ Penncozeb Flowables | see label | 2.4 qt/A | 24 | 77 | | |
| or Polyram DF | 1 lb/100 gal | 3 lb/A | 24 | 77 | | |
| Blister spot | Aliette 80WDG | 0.5-1 lb/100 gal | | 12 | 14 | [5.1] |
| Fire blight (Shoot blight) (Shoot blight, after hailstorm ONLY) | Apogee 27.5DF | 6-12 oz | | 12 | 45 | [8.6] |
| | OR §Agrimycin 17WP | 0.5 lb | | 12 | 50 | [8.5] |
| Powdery mildew | Adament 50WG | | 4-5 oz/A | 12 | 75 | |
| | OR Indar 2F | | 6-8 fl oz/A | 12 | 14 | |
| | OR Inspire Super MP | | 8.5-12 fl oz/A | 12 | 14 | |
| | OR §JMS Stylet-Oil | 1-2% solution | | 12 | 0 | [9.3] |
| | OR Rally 40WSP | | 5-8 oz/A | 24 | 14 | [2.11] |
| | OR *Procure 50WS | 3-5 oz/100 gal | | 12 | 14 | |
| | OR Vintage SC | 3 fl oz/100 gal | | 24 | 30 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|---|--|--|------------------------------|-------------------|---------------|------------------------|
| Additional Summer Sprays (continued) | | | | | | |
| Powdery mildew (continued) | OR Sovran 50WG | 1.0-1.6 oz/100 gal | | 12 | 30 | [2.14] |
| | OR Sulfur 95WP or § Microthiol Disperss | 2 lb/100 gal | 10-20 lb/A | 24 | 0 | |
| Sooty blotch and Flyspeck | Adament 50WG | | 4-5 oz/A | 12 | 75 | |
| | OR Cabrio EG | | 12 oz/A | 12 | 0 | |
| | OR Indar 2F | | 6-8 fl oz/A | 12 | 14 | |
| | OR Topsin M 70WP, WDG or Thiophanate-methyl 85WDG | 4-6 oz/100 gal .2-.3 lb/100 gal | 0.75-1 lb/A .6-.8 lb/A | 48 | 1 | [10.1], [10.2] |
| | <i>plus:</i> Captan 50WP or Captan 80WDG or Captan 4L | 1 lb/100 gal 5/8 lb/100 gal 1 pt/100 gal | 4 lb/A 2.5 lb/A | 24 (E) 24 | 0 0 | |
| | or Manzate/ Penncozeb 75DF or 80WP | 1 lb/100 gal | 3 lb/A | 24 | 77 | [2.8] |
| | or Manzate/Dithane/ Penncozeb Flowable or Polyram 80DF | see label 1 lb/100 gal | 2.4 qt/A 3 lb/A | 24 | 77 | |
| | OR Flint 50WG | 0.67-0.8 oz/100 gal | 2-2.5 oz/A | 12 | 14 | |
| | OR Pristine 38WP | | 14.5-18.5/A | 12 | 0 | |
| | OR Sovran 50WG | 1.0-1.6 oz/100 gal | 4-6.4 oz/A | 12 | 30 | [2.14] |
| | OR Ziram 76DF, 76WDG | 1 lb/100 gal | | 48 | 14 | |
| | OR Ziram 76DF, 76WDG <i>plus</i> Sulfur 95WP | 1 lb/100 gal 2 lb/100 gal | | 48 24 | 14 | [10.5] |
| Apple aphid, Spirea aphid | *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8- 14.5 fl oz/A | 12 | 28 | [11.1] |
| | OR Assail 30SG | Fixed rate per acre | 2.5-4.0 oz/A | 12 | 7 | |
| | OR §Aza-Direct 1.2L | see label | 12.5-42 fl oz/A | 4 | 0 | |
| | OR Beleaf 50SG | see label | 2.0-2.8 oz/A | 12 | 21 | |
| | OR Calypso 4F | 0.5-1.0 fl oz/100gal | 2-4 fl oz/A | 12 | 30 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 16 fl oz/A | 24 | 14 | |
| | OR *Lannate 2.4L or *Lannate 90SP | 0.75 pt/100 gal 0.25 lb/100 gal | 1.5-3.0 pt/A 0.5-1.0 lb/A | 72 | 14 | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Movento 240SC | see label | 6-9 fl oz/A | 24 | 7 | |
| | OR §M-Pede 49L | 2 gal/100 gal | see label | 12 | 0 | |
| | OR §Neemix 4.5L | see label | 7-16 fl oz/A | 12 | 0 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR Pyrenone 0.5EC | see label | 12 fl oz/A | 12 | 1 | |
| | OR *Thionex 50WP or *Thionex 3EC | .75 lb/100 gal 0.5 qt/100 gal | 4 lb/A 2.67 qt/A | 20 days 7 days | 21 21 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|--|--|----------------------|---|---------------|------------------------|
| Additional Summer Sprays (continued) | | | | | | |
| Apple aphid, Spirea aphid (continued) | OR *Vydate 2L | 1-2 pt/100 gal | 2-8 pt/A | 48 | 14 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| Apple maggot | *Asana XL | 2–5.8 fl oz | 4.8–14.5 oz./A | 12 | 21 | [12.1] |
| | OR Assail 30SG | Fixed rate per acre | 8 oz/A | 12 | 7 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.4–2.8 fl oz/A | 12 | 7 | |
| | OR Calypso 4F | 1–2 fl oz | 4–8 fl oz/A | 12 | 30 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 16 fl oz/A | 24 | 14 | |
| | OR Endigo ZC | Fixed rate per acre | 5–6 fl oz/A | 24 | 35 | |
| | OR *Guthion Solupak | 0.5–0.75 lb/100 gal | 2–3 lb/A | 14 Days | 14/21 | |
| | OR Imidan 70W | 0.75–1 lb/100 gal | 2.1–5.3 lb/A | 96 for workers; 14 Days public | 7 | |
| | OR *Leverage 360 1L | 0.6–0.7 fl oz/100 gal | 2.4–2.8 fl oz/A | 12 | 7 | |
| | OR §Surround 95WP | 25–50 lb/100 gal | 25–50 lb/A | 4 | 0 | [12.2] |
| | OR *Warrior 1CS | Fixed rate per acre | 2.5–5.1 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2CS | Fixed rate per acre | 1.3–2.5 fl oz/A | 24 | 21 | |
| | <i>Insecticide options below have at least a “Fair” efficacy rating for Apple maggot</i> | | | | | |
| Apple rust mite | OR Altacor 35WDG | see label | 2.5–4.5 oz/A | 4 | 5 | |
| | Avaunt 30WDG | Fixed rate per acre | 5–6 oz/A | 12 | 14 | [12.2] |
| | OR *Battalion 0.2L | Fixed rate per acre | 7–14 fl oz/A | 12 | 21 | |
| | OR *Battalion 1.5 C | Fixed rate per acre | 0.9–1.9 fl oz/A | 12 | 21 | |
| | OR Delegate 25WG | Fixed rate per acre | 6–7 oz/A | 4 | 7 | |
| | OR §Entrust | 0.7–1 oz/100 gal | 2–3 oz/A | 4 | 7 | |
| | OR GF-120 | Requires splatter droplet applicator | 10–20 oz/A | 4 | 0? | |
| | OR *Lannate 2.4L | 0.75 pt/100 gal | 1.5–3 pt/A | 72 | 14 | |
| | OR Sevin XLR Plus, 4F | 0.75–1.5 pt/100 gal | 1–3 qt/A | 12 | 3 | |
| | OR Sevin 80S | 0.45–0.9 lb/100 gal | 1.88–3.75 lb/A | 12 | 3 | |
| | OR §Surround 95WP | 25–50 lb/100 gal | 25–50 lb/A | 4 | 0 | [12.2] |
| | OR *Voliam Xpress EC | Fixed rate per acre | 6–12 fl oz/A | 24 | 21 | |
| | Apple rust mite | Nexter 75WS | see label | 5.2–10.7 oz/A | 12 | 25 |
| OR Portal 0.4EC | | see label | 1–2 pt/A | 12 | 14 | |
| Codling moth, Lesser Appleworm, Oriental fruit moth | Altacor 35WDG | see label | 2.5–4.5 oz/A | 4 | 5 | [14.1], [14.3] |
| | OR Assail 30SG | Fixed rate per acre | 4–8 oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3–5 fl oz/A | 12 | 14 | |
| | OR Calypso 4F | 1–2 fl oz/100 gal | 4–8 fl oz/A | 12 | 30 | |
| | OR §Carpovirusine 0.99SC | 0.5–1 pt/100 gal | 0.25–0.4 qt/A | 4 | 0 | |
| | OR §Cyd-X 0.06SC | see label | 1–6 fl oz/A | 4 | 0 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5–7.0 oz/A | 4 | 7 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|---------------------------|--|-----------------|--|---------------|------------------------|
| Additional Summer Sprays (continued) | | | | | | |
| Codling moth, Lesser Appleworm, Oriental fruit moth (continued) | OR *Guthion 50WS | 0.5 lb/100 gal | 2–3 lb/A | 14 days(E) | 14/21 | |
| | OR Imidan 70W | 0.75 lb/100 gal | 2.13–5.33 lb/A | 96 for workers 14 Days public | 7 | |
| | OR *Lannate 2.4L | 1.5 pt/100 gal | 1.5–3.0 pt/A | 72 | 14 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5–1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4–2.8 fl oz/A | 12 | 7 | |
| | OR *Rimon 0.83EC | See label | 20–40 fl oz/A | 12 | 14 | |
| | OR *Voliam Xpress EC | Fixed rate per acre | 6–12 fl oz/A | 24 | 21 | |
| <i>Insecticide options below have at least a “Fair” efficacy rating for Codling moth</i> | | | | | | |
| OR *Asana XL 0.66EC | 2–5.8 fl oz/100 gal | 4.8–14.5 fl oz/A | 12 | 21 | | |
| OR Avaunt 30WDG | Fixed rate per acre | 5–6 oz/A | 12 | 14 | | |
| OR §Aza-Direct 1.2L | see label | 12.5–42 fl oz/A | 4 | 0 | | |
| OR *Battalion 0.2L | Fixed rate per acre | 7–14 fl oz/A | 12 | 21 | | |
| OR *Battalion 1.5 C | Fixed rate per acre | 0.9–1.9 fl oz/A | 12 | 21 | | |
| OR *Baythroid XL 1L | Fixed rate per acre | 2.0–2.4 fl oz/A | 12 | 7 | | |
| OR Belay (with suppl. Label) | 1.5 – 3 fl oz/100 gal | 6 – 12 fl oz/A | 12 | 7 | | |
| OR §Biobit XL 2.1 FC | see label | 1.5–5.5 pt/A | 4 | 0 | | |
| OR *Danitol 2.4EC | Fixed rate per acre | 16–21.3 fl oz/A | 24 | 14 | | |
| OR §Deliver 18WG | see label | 0.5–2 lb/A | 4 | 0 | | |
| OR §Dipel 10.3DF | see label | 0.5–2 lb/A | 4 | 0 | | |
| OR Endigo ZC | Fixed rate per acre | 5–6 fl oz/A | 24 | 35 | | |
| OR §Entrust 80WP | 0.67–1 oz/100 gal | 2–3 oz/A | 4 | 7 | | |
| OR Esteem 35WP | Fixed rate per acre | 4–5 oz/A | 24 | 45 | | |
| OR Intrepid 2F | see label | 12–16 fl oz/A | 4 | 14 | | |
| OR §Neemix 4.5L | see label | 7–16 fl oz/A | 12 | 0 | | |
| OR Mating disruption: | | | | | | [14.2] |
| | Checkmate CM-F | Fixed rate per acre | 2.4-4.8 fl oz/A | 4 | 0 | |
| | or §Isomate-C TT | | 200 ties/A | 0 | 0 | |
| | or §Checkmate CM-OFM Duel | | 150–200 ties/A | 0 | 0 | |
| | or §Isomate-CM/OFM TT | | 200 ties/A | 0 | 0 | |
| OR *Mustang Max | 0.33–1 oz/100 gal | 1.28–4 oz/A | 12 | 14 | | |
| OR *Proclaim 5SG | 0.8–1.2 oz/100 gal | 3.2–4.8 oz/A | 12 or 48 (E) | 14 | | |
| OR Sevin XLR Plus, 4F | 0.5–1.5 pt/100 gal | 1–3 qt/A | 12 | 3 | | |
| OR Sevin 80S | 0.3–0.9 lb/100 gal | 1.25–3.75 lb/A | 12 | 3 | | |
| OR §Surround 95WP | 25–50 lb/100 gal. | 25–50 lb/A | 4 | 0 | [12.2] | |
| OR Turismo | Fixed rate per acre | 15–17 fl oz/A | 12 | 14 | | |
| OR Voliam Flexi WDG | Fixed rate per acre | 4–7 oz/A | 12 | 35 | | |
| OR *Warrior 1CS | Fixed rate per acre | 2.6-5.1 fl oz/A | 24 | 21 | | |
| OR *Warrior II 2.08CS | Fixed rate per acre | 1.3-2.5 fl oz/A | 24 | 21 | | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | | REI (hrs) | PHI (days) | Comments (see text) |
|--|---------------------------|--|------------------|--------------|---------------|------------------------|
| | | | Amt/A | | | |
| Additional Summer Sprays (continued) | | | | | | |
| Comstock mealybug | Assail 30SG | Fixed rate per acre | 4-8 oz/A | 12 | 7 | [15.3] |
| | OR *Centaur 0.7WDG | See label | 34.5 oz/A | 12 | 14 | |
| | OR Movento | see label | 6-9 fl oz/A | 24 | 7 | |
| Cutworms | §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | [16.2] |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR *Lannate 2.4L# | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| Dogwood borer, American plum borer | Assail 30SG | Fixed rate per acre | 8 oz/A | 12 | 7 | [17.1] |
| | OR *Lorsban 4EC | 1.5 qt/100 gal/A | Trunk spray | 96 | 28 | |
| | or Lorsban 75WG | 2 lb/100 gal/A | Trunk spray | 96 | 28 | |
| | or *Lorsban Advanced 3.8L | 1.5-4 pt/100 gal/A | Trunk spray | 96 | 28 | |
| European corn borer | §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | [19.2] |
| | OR *Lannate 2.4L | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| European red mite, Twospotted spider mite | Acramite 50WS | see label | 0.75-1.0 lb/A | 12 | 7 | [20.11] |
| | OR *Agri-Mek 0.15EC | 2.5-5 oz/100 gal | 10-20 fl oz/A | 12 | 28 | [20.8] |
| | OR Apollo 4SC | 1-2 fl oz/100 gal | 4-8 fl oz/A | 12 | 45 | [20.11] |
| | OR Envidor 2SC | | 16-18 fl oz/A | 12 | 7 | [20.11] |
| | OR Kanemite 15SC | see label | 31 fl oz/A | 12 | 14 | [20.11] |
| | OR Nexter 75 WS | see label | 4.4-5.2 oz/A | 12 | 25 | [20.11] |
| | OR Omni Supreme | 0.5-2 gal/100 gal | see label | 12 | 0 | [20.10] |
| | OR Onager 1EC | see label | 12-24 fl oz/A | 12 | 28 | [20.11] |
| | OR Portal 0.4EC | see label | 1-2 pt/A | 12 | 14 | [20.11] |
| | OR Savey 50DF | see label | 3-6 oz/A | 12 | 28 | |
| | OR §Stylet-Oil | 0.5-2 gal/100 gal | see label | 12 | 0 | [20.10] |
| | OR *Vendex 50WP | 4-8 oz/100 gal | 1-2 lb/A | 48 | 14 | |
| | OR Zeal 72WS | see label | 2-3 oz/A | 12 | 14 | [20.11] |
| Japanese beetle | Assail 30SG | Fixed rate per acre | 5-8 oz/A | 12 | 7 | |
| | OR Calypso 4F | 1-2 fl oz/100 gal | 4-8 fl oz/A | 12 | 30 | |
| | OR Sevin XLR Plus, 4F | 0.75-1.5 pt/100 gal | 1.5-3.0 qt/A | 12 | 3 | |
| | or Sevin 80S, 80WS | see label | 1.88-3.75 lb/A | 12 | 3 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| Obliquebanded leafroller | §Agree WG 3.8WS | see label | 1-2 lb/A | 4 | 0 | |
| | OR Altacor 35WDG | see label | 2.5-4.5 oz/A | 4 | 5 | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3-5 fl oz/A | 12 | 14 | |
| | OR §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 16 fl oz/A | 24 | 14 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR §Deliver 18WG | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|---|--------------------------------------|---|------------------------------|--|---------------|------------------------|
| Additional Summer Sprays (continued) | | | | | | |
| Obliquebanded leafroller (continued) | OR §Entrust 80WP | 0.67-1 oz/100 gal | 2-3 oz/A | 4 | 7 | |
| | OR Intrepid 2F | see label | 12-16 fl oz/A | 4 | 14 | |
| | OR §Javelin 7.5WDG | 0.13-1 lb/100 gal | 0.5-4.0 lb/A | 4 | 0 | |
| | OR *Lannate 2.4L or *Lannate 90SP | 0.75 pt/100 gal 0.25 lb/100 gal | 1.5-3.0 pt/A 0.5-1.0 lb/A | 72 | 14 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 12 | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48 (E) | 14 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| | OR SpinTor 2SC | Fixed rate per acre | 6-10 fl oz/A | 4 | 7 | |
| | OR *Voliam Xpress EC | See label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| Oriental fruit moth, Lesser apple worm | Altacor 35WDG | See label | .5-4.5 oz/A | 4 | 5 | [14.4] |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | OR Assail 30SG | Fixed rate per acre | 5-8 oz/A | 12 | 7 | |
| | OR Avaunt 30WDG | Fixed rate per acre | 5-6 oz/A | 12 | 14 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.0-2.4 fl oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3-5 fl oz/A | 12 | 14 | |
| | OR Calypso 4F | 1-2 fl oz/100 gal | 4-8 fl oz/A | 12 | 30 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR *Guthion 50WS | 0.5 lb/100 gal | 2-3 lb/A | 14 days (E) | 14/21 | |
| | OR Imidan 70W | 0.75-1 lb/100 gal | 2.13-5.33 lb/A | 96 for workers 14 Days public | 7 | |
| | OR Intrepid 2F | see label | 12-16 fl oz/A | 4 | 14 | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | | |
| OR (§)Pheromone disruption: Checkmate OFM-F or Isomate-M 100 or §Checkmate CM-OFM Duel or §Isomate-CM/OFM TT | see label | 1.32-2.93 fl oz/A 100 ties/acre 150-200 dispensers/A 200 ties/A | 0 0 0 0 | 0 0 0 0 | | |
| Redbanded leafroller | §Agree WG 3.8WS | see label | 1-2 lb/A | 4 | 0 | |
| | OR Altacor 35WDG | see label | 2.5-4.5 oz/A | 4 | 5 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Belt 4SC | see label | 3-5 fl oz/A | 12 | 14 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|--------------------------------------|--|------------------------------|--|---------------|------------------------|
| Additional Summer Sprays (continued) | | | | | | |
| Redbanded leafroller (continued) | OR §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR §Deliver 18WG | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR *Guthion 50WS | 0.5 lb/100 gal | 2-3 lb/A | 14 days (E) | 14/21 | |
| | OR Imidan 70W | 0.75-1 lb/100 gal | 2.13-5.33 lb/A | 96 for workers 14 Days public | 7 | |
| | OR §Javelin 7.5WDG | 0.13-1 lb/100 gal | 0.5-4.0 lb/A | 4 | 0 | |
| | OR *Lannate 2.4L or *Lannate 90SP | 0.75 pt/100 gal 0.25 lb/100 gal | 1.5-3.0 pt/A 0.5-1.0 lb/A | 72 | 14 | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48(E) | 14 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | | |
| San Jose scale | Assail 30SG | Fixed rate per acre | 8 oz/A | 12 | 7 | [28.4] |
| | OR Admire Pro | see label | 2.8 fl oz/A | 12 | 7 | |
| | OR *Centaur 0.7WDG | see label | 34.5 oz/A | 12 | 14 | |
| | OR *Diazinon 50WP | 1 lb/100 gal | see label | 96 | 21 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR Esteem 35WP | see label | 4-5 oz/A | 24 | 45 | |
| | OR *Guthion 50WS | 8-10 oz/100 gal | 2-3 lb/A | 14 days (E) | 14/21 | |
| | OR Imidan 70W | 0.75-1 lb/100 gal | 2.13-5.33 lb/A | 96 for workers 14 Days public | 7 | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Movento 240SC | see label | 6-9 fl oz/A | 24 | 7 | |
| OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | | |
| Spotted tentiform leafminer, Apple blotch leafminer | Actara 25WDG | see label | 4.5-5.5 oz/A | 12 | 35 | [29.3] |
| | OR Admire Pro | see label | 2.8 fl oz/A | 12 | 7 | |
| | OR *Agri-Mek 0.15EC | 2.5-5 fl oz/100 gal | 10-20 fl oz/A | 12 | 28 | |
| | OR Altacor 35WDG | see label | 2.5-4.0 oz/A | 4 | 5 | |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 28 | |
| | OR Assail 30SG | Fixed rate per acre | 2.5 oz/A | 12 | 7 | |
| | OR §Aza-Direct 1.2L | see label | 12.5-42 fl oz/A | 4 | 0 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 2.0-2.4 fl oz/A | 12 | 7 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|--|-----------------------|--|-------------------|----------------------------------|---------------|------------------------|
| Additional Summer Sprays (continued) | | | | | | |
| Spotted tentiform leafminer, Apple blotch leafminer (continued) | OR Belt 4SC | see label | 3-5 oz/A | 12 | 14 | |
| | OR Calypso 4F | 0.5-1 fl oz/100 gal | 2-4 fl oz/A | 12 | 30 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.7-16 fl oz/A | 24 | 14 | |
| | OR Delegate 25WG | Fixed rate per acre | 4.5-7.0 oz/A | 4 | 7 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR *Lannate 2.4L# | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR §Neemix 4.5L | see label | 7-16 fl oz/A | 12 | 0 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR *Proclaim 5SG | 0.8-1.2 oz/100 gal | 3.2-4.8 oz/A | 12 or 48 (E) | 14 | |
| | OR *Rimon 0.83EC | see label | 20-40 fl oz/A | 12 | 14 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| | OR *Vydate 2L# | 0.5-1 pt/100 gal | 1-2 pt/A | 48 | 14 | |
| | OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | |
| Spotted wing Drosophila | Delegate 25 WG | see label | 4.5-7 oz/A | 4 | 7 | |
| | OR Entrust 80WP | | 1.5-3 oz/A | 4 | 7 | |
| | OR Imidan 70W | .75-1 lb/100 gal | 2.13-5.75 lb/A | 96 for workers 14 Days public | 7 | |
| Stinkbugs, including Brown marmorated stinkbug | OR Actara 25WDG | see label | 4.5-5.5 oz/A | 12 | 35 | |
| | OR Asana XL | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 21 | |
| | OR Baythroid XL | see label | 2-2.4 fl oz/A | 12 | 7 | |
| | OR Danitol 2.4EC | see label | 10.7-21.3 fl oz/A | 24 | 14 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR Lannate 2.4LV | see label | 2.25 pt/A | 96 | 14 | |
| | OR Lannate 90SP | see label | .75 lb/A | 96 | 14 | |
| | OR Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR Surround 95WP | see label | 25-50lb/A | 4 | 0 | |
| | OR Voliam Xpress | see label | 6-12 fl oz/A | 24 | 21 | |
| | OR Vydate 2L | see label | 1.5-3 pt/A | 48 | 14 | |
| | OR Warrior 1CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR Warrior II 2.08CS | see label | 1.28-2.56 fl oz/A | 24 | 21 | |
| Variegated leafroller, Sparganothis fruitworm | §Biobit XL 2.1FC | see label | 1.5-5.5 pt/A | 4 | 0 | [31.1] |
| | OR §Deliver 18WG | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Dipel 10.3DF | see label | 0.5-2 lb/A | 4 | 0 | |
| | OR §Javelin 7.5WDG | 0.13-1 lb/100 gal | 0.5-4.0 lb/A | 4 | 0 | |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | | REI (hrs) | PHI (days) | Comments (see text) |
|---|----------------------|--|------------------|--------------|---------------|------------------------|
| | | Amt/A | | | | |
| Additional Summer Sprays (continued) | | | | | | |
| Variegated leafroller, Sparganothis fruitworm (continued) | OR *Lannate 2.4L | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | |
| White apple leafhopper, | Actara 25WDG | see label | 2-2.75 oz/A | 12 | 14 | [33.1] |
| | OR *Asana XL 0.66EC | 2-5.8 fl oz/100 gal | 4.8-14.5 fl oz/A | 12 | 28 | |
| Rose leafhopper, | OR Admire Pro | see label | 1.4-2.8 fl oz/A | 12 | 7 | [33.2] |
| | OR Assail 30SG | Fixed rate per acre | 2.5-4.0 oz/A | 12 | 7 | |
| Potato leafhopper | OR Avaunt 30WDG | Fixed rate per acre | 5-6 oz/A | 12 | 14 | |
| | OR §Aza-Direct 1.2L | see label | 12.5-42 fl oz/A | 4 | 0 | |
| | OR *Baythroid XL 1L | Fixed rate per acre | 1.4-2.0 fl oz/A | 12 | 7 | |
| | OR Calypso 4F | 0.5-1 fl oz/100 gal | 2-4 fl oz/A | 12 | 30 | |
| | OR *Centaur 0.7WDG | see label | 34.5 oz/A | 12 | 14 | |
| | OR *Danitol 2.4EC | Fixed rate per acre | 10.7-16 fl oz/A | 24 | 14 | |
| | OR Endigo ZC | Fixed rate per acre | 5-6 fl oz/A | 24 | 35 | |
| | OR *Lannate 2.4L# | 0.75 pt/100 gal | 1.5-3.0 pt/A | 72 | 14 | |
| | OR *Lannate 90SP | 0.25 lb/100 gal | 0.5-1.0 lb/A | | | |
| | OR *Leverage 360 | see label | 2.4-2.8 fl oz/A | 12 | 7 | |
| | OR §Neemix 4.5L | see label | 7-16 fl oz/A | 12 | 0 | |
| | OR Portal 0.4L | 1 pt/100 gal | 2 pt/A | 12 | 14 | |
| | OR *Proaxis 0.5CS | see label | 2.6-5.1 fl oz/A | 24 | 21 | |
| | OR Provado 1.6F | 0.5-2 oz/100 gal | 4-8 fl oz/A | 12 | 7 | |
| | OR Sevin 80S | see label | 0.63-1.88 lb/A | 12 | 3 | |
| | OR Sevin XLR Plus 4F | 0.25-0.75 pt/100 gal | 0.5-1.5 qt/A | 12 | 3 | |
| OR Sherpa | 2 oz/100 gal | | 12 | 7 | | |
| OR *Thionex 50WP | .75 lb/100 gal | 4 lb/A | 20 days | 21 | | |
| OR *Thionex 3EC | 0.5 qt/100 gal | 2.67 qt/A | 7 days | 21 | | |
| OR *Voliam Xpress EC | see label | 6-12 fl oz/A | 24 | 21 | | |
| OR *Vydate 2L# | 1-2 pt/100 gal | | 48 | 14 | | |
| OR *Warrior II 2.08CS | Fixed rate per acre | 1.28-2.56 fl oz/A | 24 | 21 | | |
| Woolly apple aphid | Assail 30SG | Fixed rate per acre | 2.5-4.0 oz/A | 12 | 7 | [33.1] |
| | OR Admire Pro | see label | 7-10.5 fl oz/A | 12 | 7 | |
| | OR Beleaf 50SG | see label | 2.0-2.8 oz/A | 12 | 21 | |
| | OR *Diazinon 50WP | 1 lb/100 gal | see label | 96 | 21 | |
| | OR Movento 240SC | see label | 6-9 fl oz/A | 24 | 7 | |
| | OR *Thionex 50WP | .75 lb/100 gal | 4 lb/A | 20 days | 21 | |
| OR *Thionex 3EC | 0.5 qt/100 gal | 2.67 qt/A | 7 days | 21 | | |
| Postharvest | | | | | | |
| Crown rot (collar rot) | Ridomil Gold 4EC | see comments | | 12 | See comments | [7.2] |

Table 11.5.1. Pesticide Spray Table – Apples.

Refer to back of book for key to abbreviations and footnotes.

| Pest | Product | Amt/100 gal. dilute see Chapter 4 to estimate dilute gals./A | Amt/A | REI (hrs) | PHI (days) | Comments (see text) |
|---------------------------------------|------------------------|--|-------|--------------|---------------|------------------------|
| Control of Storage Disorders | | | | | | |
| Storage rots | Mertect 340F | 1 pt/100 gal | | | | [34.1] |
| | <i>plus</i> | | | | | |
| | Captan 50WP | 2.5 lb/100 gal | | | | |
| | or Captan 80WP | 1.6 lb/100 gal | | | | |
| | or Captec or Captan 4L | 1.25 qt/100 gal | | | | |
| <i>OR</i> | Penbotec | 16-32 fl oz/100 gal | | | | |
| <i>OR</i> | Scholar 50WP | 8-16 fl oz/100 | | | | [34.1] |
| Storage scald | No Scald DPA-EC-283 | 2.5-5 pt/100 gal | | | | [35.1] |
| | SmartFresh | Rate depends room size | | | | |
| Senescent break-down (McIntosh) | Dowflake Process Grade | 25 lb/100 gal | | | | [36.1] |

11.6 Growth Regulator Use in Apples

11.6.1 Chemical Thinning

Fruit thinning is a management practice that reduces yield in the current season but results in increased fruit size and also increased return bloom and yield in the next season. Large fruit size is best obtained with consistent cropload reductions each year through chemical thinning. The use of growth regulating chemicals to thin apple trees is not an exact science and each grower must weigh and evaluate the many factors that affect chemical thinning response in deciding on a thinning program. Although the recommendations in this section are based on research and experience, growers are cautioned that their success with chemical thinning depends on many factors, and they should use these recommendations only as a guide.

11.6.2 Weather Factors That Affect Thinning Response

Frost. Frost before application of thinners can greatly increase the amount of thinning obtained from chemical thinners. Frost at bloom can damage fruitlets and reduce seed set, which can result in increased natural drop and greater chemical thinning response. Frost can also damage spur leaves, resulting in greater chemical uptake and reduced photosynthesis, thus greater thinning response. Wherever flowers and leaves have been damaged by frost, extreme caution should be used with chemical thinners. Typically, lower rates would be used in such cases.

Sunlight Levels before Application. The amount of sunlight for the 3-5 days preceding application of chemical

thinners has an important effect on chemical uptake and response. Intense cloudy weather before application of thinners can result in increased chemical uptake and greater thinning response, due to greater succulence of the leaves and thinner wax-covered cuticle. This results in increased uptake of thinners thus greater chemical thinning response. Growers may want to reduce the rate of thinner used, if intense cloudy weather precedes application.

Temperature at Time of Application. The uptake of chemical thinners is greater at higher temperatures than at lower temperatures. The optimum is between 70-80°F. Above 80°F, uptake is substantially greater than below 80°F. The time of day applications are made appears to be unimportant. Applications made in the morning or evening when it is cool have a longer drying time on the leaf, resulting in a slow but sustained uptake of chemical, while at higher temperatures during mid-day, drying times are shorter, resulting in a short but rapid uptake of chemical. Thus, the total amount of chemical taken into the plant appears to be very similar regardless of the time of day. Recent research results also indicate that similar thinning is achieved regardless of the time of day applications are made.

Weather After Application. Temperature and sunlight levels for the 5-day period after application of thinners are the predominant weather factors affecting chemical thinning response. The interaction of temperature and sunlight with the chemical thinner creates stress in the tree, which is necessary to make some fruit drop off. Warmer temperatures increase thinning response, while greater light levels decrease thinning response (Fig. 11.6.1).