

17 Appendices

17.1 Pesticide Data

Table 17.1.1 Common names, product names, formulations, and days-to-harvest for pesticides used on tree fruits.

| Common Names/ Products Formulations | DAYS TO HARVEST (A) | | | | | |
|---|---------------------------------|-----------------|-----------------|----------------|--------------------------|--------------|
| | <i>Apples</i> | <i>Apricots</i> | <i>Cherries</i> | <i>Peaches</i> | <i>Pears</i> | <i>Plums</i> |
| <i>Insecticides and Acaricides</i> | | | | | | |
| *abamectin | | | | | | |
| *Agri-Mek, *Temprano 0.15EC | 28 | — | — | — | 28 | 21 |
| *Abba 0.15EC | 28 | — | — | — | 28 | 21 |
| acequinocyl | | | | | | |
| Kanemite 15SC | 14 | — | — | — | 14 | — |
| acetamiprid | | | | | | |
| Assail 30SG | 7 | 7 | 7 | 7 | 7 | 7 |
| (§)azadirachtin | | | | | | |
| §Neemix 4.5L, §Aza-Direct 1.2L, Azatin XL 0.27EC | 0 | 0 | 0 | 0 | 0 | 0 |
| *azinphos-methyl | | | | | | |
| *Guthion 50WS | 14(A) | — | 15 | — | 14 | — |
| bifentate | | | | | | |
| Acramite 50WS | 7 | — | — | 3 | 7 | 3 |
| *bifenthrin | | | | | | |
| *Bifenture 2EC, *Brigade 10WS, 2 EC,*Fanfare 2EC | — | — | — | — | 14 | — |
| §Bt (<i>Bacillus thuringiensis</i>) | | | | | | |
| §Deliver 18WG | 0 | 0 | 0 | 0 | 0 | 0 |
| §Dipel 10.3 DF | 0 | 0 | 0 | 0 | 0 | 0 |
| §Biobit HP | 0 | 0 | 0 | 0 | 0 | 0 |
| §Javelin WG | 0 | 0 | 0 | 0 | 0 | 0 |
| §Agree 3.8 WS | 0 | — | — | 0 | 0 | 0 |
| buprofezin | | | | | | |
| Centaur WDG | 14 | 14 | 14 | 14 | 14 | 14 |
| buprofezin & flubendiamide | | | | | | |
| Tourismo | 14 | 14 | 14 | 14 | 14 | 14 |
| Carbaryl | | | | | | |
| Sevin 4F, 4EC | 3 | 3 | 3 | 3 | 3 | 3 |
| chlorantraniliprole | | | | | | |
| Altacor 35WDG | 5 | 10 | 10 | 10 | 5 | 10 |
| chlorantraniliprole & thiamethoxam | 35* (60 if adjuvant used) | | | | 35 (60 with adjuvant) | |
| Voliam Flexi WDG | | 14 | 14 | 14 | | 14 |
| chlorantraniliprole & cyhalothrin | | | | | 35 (60 with adjuvant) | |
| Voliam Xpress WDG | 21 | 14 | 14 | 14 | | 14 |
| chlorpyrifos | | | | | | |
| Lorsban Advanced | PB/28(A) | — | 21 | 14 | PB | PB |
| *Lorsban 4EC | PB/28(A) | — | 21 | 14 | PB | PB |
| Lorsban 75WG | PB/28(A) | — | 14 or 21(C) | 14 | PB | PB |
| clofentezine | | | | | | |
| Apollo 4SC | 45 | 21 | 21 | 21 | 21 | — |

Table 17.1.1 Common names, product names, formulations, and days-to-harvest for pesticides used on tree fruits.

| Common Names/ Products Formulations | DAYS TO HARVEST (A) | | | | | |
|---|---------------------|----------|----------|---------|-------|-------|
| | Apples | Apricots | Cherries | Peaches | Pears | Plums |
| Insecticides and Acaricides (continued) | | | | | | |
| clothianidin | | | | | | |
| Clutch 50 WDG | 7 | — | — | — | 7 | — |
| Belay 2.1 | 7 | — | — | 21 | 7 | — |
| *cyfluthrin | | | | | | |
| *Baythroid XL 1E, 2EC, *Leverage 2.7SE | 7 | 7 | 7 | 7 | 7 | 7 |
| *diazinon | | | | | | |
| *Diazinon 50WP, AG600 | 21/PF(A) | 21 | 21 | 21 | 21 | 21 |
| deltamethrin | | | | | | |
| *Battalion 1.5 EC, *Battalion 0.2 EC *Delta Gold 1.56 EC | 21 | — | — | — | 21 | — |
| dimethoate | | | | | | |
| Dimethoate 400, 4EC | — | — | — | — | 28 | — |
| *emamectin benzoate | | | | | | |
| *Proclaim 5SG | 14 | — | — | — | 14 | — |
| *endosulfan | | | | | | |
| *Thionex 50WP | 21 | — | 21(F) | 21/30 | 20 | — |
| *Thionex 3EC | 21 | — | 21(F) | 21/30 | 7 | — |
| *esfenvalerate | | | | | | |
| *Asana XL 0.66EC | 21 | 14 | 14 | 14 | 28 | 14 |
| etoxazole | | | | | | |
| Zeal 72WS | 14 | 7 | 7 | 7 | 14 | 7 |
| *fenbutatin-oxide, hexakis | | | | | | |
| *Vendex 50WP | 14 | — | 14 | 14 | 14 | 14 |
| *fenpropathrin | | | | | | |
| *Danito1 2.4EC | 14 | 3 | 3 | 3 | 14 | 3 |
| fenpyroximate | | | | | | |
| Portal 0.4EC | 14 | — | — | — | 14 | — |
| flonicamid | | | | | | |
| Beleaf 50SG | 21 | 14 | 14 | 14 | 21 | 14 |
| flubendiamide | | | | | | |
| Belt SC | 14 | 7 | 7 | 7 | 14 | 7 |
| *gamma-cyhalothrin | | | | | | |
| *Proaxis 0.5CS | 21 | 14 | 14 | 14 | 21 | 14 |
| §granulosis virus | | | | | | |
| §Carpovirusine 0.99SC | 0 | — | — | — | 0 | — |
| §Cyd-X 0.06SC | 0 | — | — | — | 0 | 0 |
| hexythiazox | | | | | | |
| Savey 50DF | 28 | 28 | 28 | 28 | 28 | 28 |
| Onager 1 EC | 28 | 7 | 7 | 7 | 28 | 7 |
| imidacloprid | | | | | | |
| Provado 1.6F, *Leverage 2.7SE | 7 | 0 | 7 | 0 | 7 | 7 |
| indoxacarb | | | | | | |
| Avaunt 30 WDG | 14 | 14 | 14 | 14 | 28 | 14 |

Table 17.1.1 Common names, product names, formulations, and days-to-harvest for pesticides used on tree fruits.

| Common Names/ Products Formulations | DAYS TO HARVEST (A) | | | | | |
|--|---------------------|-----------------|-----------------|----------------|--------------|--------------|
| | <i>Apples</i> | <i>Apricots</i> | <i>Cherries</i> | <i>Peaches</i> | <i>Pears</i> | <i>Plums</i> |
| <i>Insecticides and Acaricides (continued)</i> | | | | | | |
| §kaolin | | | | | | |
| §Surround 95WP | 0 | 0 | 0 | 0 | 0 | 0 |
| *lambda-cyhalothrin | | | | | | |
| *Lambda-Cy 1CS, *Taiga-Z 1CS, *Warrior 1CS, *Warrior II 2.08CS | 21 | 14 | 14 | 14 | 21 | 14 |
| malathion | | | | | | |
| Malathion 57EC, 5EC | — | 7 | 3 | 7 | — | — |
| *methidathion | | | | | | |
| *Supracide 2EC, 25WP | PB | PB | PB | PB | PB | PB |
| *methomyl | | | | | | |
| *Lannate 2.4L, 90SP | 14 | — | — | 4 | 7 | — |
| methoxyfenozide | | | | | | |
| Intrepid 2F | 14 | — | — | — | 14 | — |
| novaluron | | | | | | |
| Rimon 0.83 EC | 14 | 8 | — | 8 | — | 8 |
| *oxamyl | | | | | | |
| *Vydate 2L | 14 | — | — | — | 14 | — |
| *permethrin | | | | | | |
| *Ambush 25WP, *Perm-Up 3.2EC | PF | — | 3 | 14 | PB | — |
| *Pounce 3.2EC, 25WP | PF | — | 3 | 14 | PB | — |
| (§)oil | | | | | | |
| JMS Stylet Oil, §Omni Oil 6E, (§)Purespray Spray Oil | 0 | 0 | 0 | 0 | 0 | 0 |
| phosmet | | | | | | |
| Imidan 70WP, 70WS | 7 | 14 | 7 (C) | 14 | 7 | 7 |
| potassium fatty acids | | | | | | |
| §Des-X, §M-Pede | 0 | 0 | 0 | 0 | 0 | 0 |
| See Des-X label about possible phytotoxicity after fruit formation on pears, cherries, and smooth-skinned stone fruit. | | | | | | |
| (§)pyrethrin/rotenone | | | | | | |
| §PyGanic 1.4 EC | 0 | 0 | 0 | 0 | 0 | 0 |
| Pyrenone 6.0% EC | 0 | 0 | 0 | 0 | 0 | 0 |
| pyridaben | | | | | | |
| Nexter 75WS | 25 | PH | PH | 7 | 7 | 7 |
| pyriproxyfen | | | | | | |
| Esteem 35WP | 45 | 14 | 14 | 14 | 45 | 14 |
| rynaxypyr (see chlorantraniliprole) | | | | | | |
| spinetoram | | | | | | |
| Delegate 25WG | 7 | 14 | 7 | 14 | 7 | 7 |
| (§)spinosad | | | | | | |
| §Entrust 80WP | 7 | 14 | 7 | 14 | 7 | 7 |
| §GF-120 | 0 | 0 | 0 | 0 | 0 | 0 |
| spirodiclofen | | | | | | |
| Envidor 2 SC | 7 | 7 | 7 | 7 | 7 | 7 |
| spirotetramat | | | | | | |
| Movento 240SC | 7 | 7 | 7 | 7 | 7 | 7 |

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| Common Names/ Products Formulations | DAYS TO HARVEST (A) | | | | | |
|---|---------------------|----------|-----------|---------|-------|-------|
| | Apples | Apricots | Cherries | Peaches | Pears | Plums |
| Insecticides and Acaricides (continued) | | | | | | |
| thiacloprid | | | | | | |
| Calypso 4F | 30 | — | — | — | 30 | — |
| thiamethoxam | | | | | | |
| Actara 25WDG | 35 | — | — | — | 35 | — |
| zeta cypermethrin | | | | | | |
| *Mustang Max EC | 14 | 14 | 14 | 14 | 14 | 14 |
| Fungicides and Bactericides | | | | | | |
| azoxystrobin | | | | | | |
| Abound 2.08F | — | 0 | 0 | 0 | — | 0 |
| § <i>Bacillus subtilis</i> | | | | | | |
| §Serenade ASO | 0 | 0 | 0 | 0 | 0 | 0 |
| captan | | | | | | |
| Captan 50WP, 80WDG, Captec 4L | 0 | 0 | 0 | 0 | — | 0 |
| chlorothalonil | | | | | | |
| Bravo Weather Stik, Ultrex Echo 720, 90DF, Chloronil 720, Concorde, Equus, Applause DF, 720 | — | SS | SS,PH | SS | — | SS |
| (§)copper hydroxide | | | | | | |
| Kocide 2000, 4.5LF, 101, DF §Champ Formula-2. §NuCop 50DF | HIG | BL | BL,PH (C) | 21 | BL | BL |
| copper oxychloride sulfate | | | | | | |
| C-O-C-S WDG | GT | PF | PF,PH (C) | BL,PF | BL | BK,PF |
| copper sulfate | | | | | | |
| Cuprofix Ultra Disperss 40DF, Basicop | 2C | BL | BL, PH | SS | BL | BL |
| cyprodinil | | | | | | |
| Vanguard WG | 72 | BL | BL(C) | BL | 72 | BL |
| DCNA | | | | | | |
| Botran 75WP | — | 10 | 10(D) | 10 | — | BL |
| difenoconazole | | | | | | |
| Inspire Super MP | 72 | — | — | — | 72 | — |
| dodine | | | | | | |
| Syllit 65WP, FL | 7 | — | 0, PH | 15 | — | — |
| fenarimol | | | | | | |
| Vintage 1SC | 30 | — | 0 | — | 30 | — |
| fenbuconazole | | | | | | |
| Indar 2F | 14 | 0 | 0, PH | 0 | — | — |
| fenhexamid | | | | | | |
| Elevate 50WDG | — | 0 | 0 | 0 | 0 | 0 |
| ferbam | | | | | | |
| Ferbam Granuflo | 7 | — | 0 | 21 | 7 | — |

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|--|---------------------|-----------------|-----------------|----------------|--------------|--------------|
| | <i>Apples</i> | <i>Apricots</i> | <i>Cherries</i> | <i>Peaches</i> | <i>Pears</i> | <i>Plums</i> |
| Fungicides and Bactericides(continued) | | | | | | |
| fluopyram + pyrimethanil (Luna Tranquility) [a] | 72 | - | - | - | - | - |
| fluopyram + trifloxystrobin (Luna Sensation) [a] | 14 | - | 1 | - | - | - |
| flutriafol (Topguard) | 14 | 7 | 7 | 7 | 7 | 7 |
| fluxapyroxad + pyraclostrobin (Merivon) [a] | 0 | 0 | 0 | 0 | 0 | 0 |
| fosetyl-Al Alette WDG | 14 | (B) | (B) | (B) | 14 | (B) |
| §hydrogen dioxide (hydrogen peroxide) §OxiDate | 0 | 0 | 0 | 0 | 0 | 0 |
| iprodione Rovral 50WP, 4 Flowable, Iprodione 4L, AG | — | PF | PF | PF | — | PF |
| kresoxim-methyl Sovran 50WG | 30 | — | — | — | 30 | — |
| (§)lime sulfur Allpro Lime Sulfur, §Rex lime sulfur solution, Miller Lime Sulfur Solution, Sulforix Lime Sulfur | 0 | — | 0 | 0 | 0 | 0 |
| mancozeb Manzate 75DF, Flowable Penncozeb 75DF, 80WP | BL,77(A) | — | — | — | BL,77(A) | — |
| mancozeb + copper hydroxide ManKocide | BL | — | — | — | BL | — |
| mefanoxam Ridomil Gold 4EC | GT, PH | GT | GT | GT | — | GT |
| metiram Polyram 80WP | BL,77(A) | — | — | — | — | — |
| myclobutanil Rally 40WSP | 14 | 0 | 0 | 0 | — | 0 |
| (§)oxytetracycline §Mycoshield 17WP, Fireline 17WP | 60 | — | — | 21 | 60 | — |
| <i>Pantoea agglomerans</i> strain E325 §Bloomtime Biological FD | PF | — | — | — | PF | — |
| penthiopyrad (Fontelis) | 28 | - | 0 | 0 | 28 | 0 |
| phosphite products Agri-fos, Fungi-Phite, Phostrol Topaz | 0 | 0 | 0 | 0 | 0 | 0 |
| prohexadione calcium Apogee 27.5DF | 45 | — | — | — | — | — |
| propiconazole Orbit 3.6EC | — | 0 | 0 | 0 | — | 0 |

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|---|---------------------|----------|----------|---------|-------|-------|
| | Apples | Apricots | Cherries | Peaches | Pears | Plums |
| Fungicides and Bactericides(continued) | | | | | | |
| pyraclostrobin + boscalid | | | | | | |
| Pristine 38WDG | 0 | 0 | 0 | 0 | 0 | 0 |
| pyrimethanil | | | | | | |
| Scala | 72 | 2 | — | 2 | 72 | 2 |
| (§)streptomycin | | | | | | |
| §Agri-Mycin 17WP, Firewall 17WP, Streptrol 17WP, Agricultural streptomycin 17WP | 50 | — | — | — | 30 | — |
| (§)sulfur | | | | | | |
| §Kumulus DF, § Microthiol Disperss, Wetttable sulfur Thiolux Jet | PH | — | 0 | 0 | PH | 0 |
| tebuconazole | | | | | | |
| Elite 45WSP | — | — | 0 | 0 | — | — |
| Tebuzol 45DF | 75 | 0 | 0 | 0 | 75 | 0 |
| tebuconazole + trifloxystrobin | | | | | | |
| Adament 50WG | 75 | 1 | 1 | 1 | 75 | 1 |
| thiophanate-methyl | | | | | | |
| Topsin M WSB, 70WP | (A) | 1 | 1 | 1 | 1 | 1 |
| Topsin 4.5L | (A) | 1 | 1 | 1 | — | 1 |
| T-methyl 70W WSB | 1 | 1 | 1 | 1 | 1 | 1 |
| thiram | | | | | | |
| Thiram Granuflo | — | — | — | 7 | — | — |
| triadimefon | | | | | | |
| Triadimefon 50DF, Bayleton | 45 | — | — | — | 45 | — |
| trifloxystrobin | | | | | | |
| Flint | 14 | — | — | — | 14 | — |
| Gem 500 SC | — | 1 | 1 | 1 | — | 1 |
| triflumizole | | | | | | |
| *Procure 50WS | 14 | — | 1 | — | 14 | — |
| ziram | | | | | | |
| Ziram 76DF | 14 | 30 | 14 | 14 | 14 | — |

Key:

- BL** Do not apply beyond bloom.
GT Do not apply beyond green tip.
HIG Do not apply beyond 1/2-in green.
PB Prebloom applications only.
PF Do not apply beyond petal fall.
PH Postharvest applications allowed.
SS Do not apply beyond shuck split.
2C Do not apply after 2d cover spray.
(A) If more than one value is given, depends on rate, method and/or number of applications; check label.
(B) Nonbearing trees only.
(C) Tart cherries only.
(D) Sweet cherries only

— Not registered for use on crop.

* Restricted-use pesticide; may be purchased and used only by certified applicators, or used by someone under the supervision of a certified applicator.

§ Potentially acceptable in certified organic programs

(§) Not all formulations of the active ingredient are acceptable in certified organic programs.

Table 17.1.2. Common names, product names, formulations, and days-to-harvest for growth regulators.

| Common Name/ Product Name | Formulation | EPA Reg. No. | Crop | Preharvest Interval |
|---|---------------------|--------------|------------------------------|------------------------|
| Amid-Thin W naphthalene-acetamide | 8.4 WP | 5481-426 | Apple, pear | — |
| Apogee prohexadione calcium | 27.5% DF | 7969-188 | Apple | 45 days |
| Ethrel ethephon | 2 lb/gal | 264-267 | Apple, cherries | 7 days |
| Exilis Plus cytokinin | 2.0% liquid | 62097-9 | Apple | 86 days |
| Fruitone N naphthalene-acetic acid | 3.1% | 5481-427 | Apple, pear | 2 days |
| MaxCel cytokinin | 1.9% | 73049-407 | Apple | 86 days |
| Novagib gibberellin | 1.0% liquid | 62097-7 | Apple | — |
| Perlan cytokinin+gibberellin | 1.8% + 1.8% liquid | 62097-6 | Apple | — |
| §ProGibb gibberellic acid | 4% liquid | 73049-15 | cherries | 0 days |
| §ProGibb Plus 2X gibberellic acid | 20% SP | 73049-16 | Sweet cherry | 0 days |
| ProVide gibberellin | 2% liquid | 73049-3 | Apple | — |
| §ProVide gibberellin | 10% SG | 73049-409 | Apple | — |
| Promalin cytokinin+gibberellin | 1.8% + 1.8% liquid | 73049-41 | Apple, pear, sweet cherry | — |
| ReTain AVG | 15% SP | 73049-45 | Apple, pear | 7 days |
| RiteSize cytokinin+gibberellin | 1.8% + 0.18% liquid | 55146-86 | Apple | — |
| RiteWay cytokinin | 1.9% liquid | 71368-60 | Apple | 86 days |
| Tre-Hold RTU naphthalene-acetic acid | 1.15% | 5481-452 | Apple, pear, nectarine | — |
| Typy cytokinin+gibberellin | 1.8% + 1.8% liquid | 55146-78 | Apple | — |

— Preharvest interval information not provided on label.

§Potentially acceptable in certified organic programs

17.2 EPA numbers and worker protection standard re-entry and personal protective equipment (PPE) guidelines.

Worker Notification: Under most circumstances, worker employers must make sure that workers are notified about areas where pesticide applications are taking place or where restricted-entry intervals are in effect. Some pesticide labels require you to notify workers BOTH orally AND with signs posted at entrances to the treated area. Unless the pesticide labeling requires both types of notification, notify workers EITHER orally OR by the posting of warning signs at entrances to treated areas. You must inform workers which method of notification is being used. For details on notification requirements both for these products and those not represented below, refer to the product label and the Worker Protection Standard, 40 CFR part 170.

Table 17.2.1 Insecticides and acaricides

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator PPE | Early Entry PPE |
|-----------------------|----------------|-----------------------------------|-----------|----------------|-----------------|
| *Abba 0.1EC | 66222-139 | abamectin | 12 | dfghij | dfghj |
| Acramite 50WS | 400-503 | bifenazate | 12 | ac | cfk |
| Actara | 100-938 | thiamethoxam | 12 | acf | cfk |
| *Admire Pro 4.6SC | 264-827 | imidacloprid | 12 | acf | cfk |
| §Agree WG | 70051-47 | Bt | 4 | abcp | bck |
| *Agri-Mek 0.15EC | 100-898 | abamectin | 12 | dfghij | dfghj |
| Altacor 35WDG | 352-730 | chlorantraniliprole, rynaxypyr | 4 | ac | ac |
| Apollo 4SC | 66222-47 | clofentezine | 12 | acf | cfk |
| *Asana XL 0.66EC | 352-515 | esfenvalerate | 12 | acfh | cfhk |
| Assail 30SG | 8033-36-70506 | acetamiprid | 12 | abcj | bck |
| Avaunt 30WDG | 352-597 | indoxacarb | 12 | abc | beg |
| §Aza-Direct 1.2L | 71908-1-10163 | azadirachtin | 4 | abc | bck |
| Azatin XL 0.27EC | 70051-27-59807 | azadirachtin | 4 | acfh | cfhk |
| *Battalion 0.2EC | 264-1007-66330 | deltamethrin | 12 | dfghij | dfghj |
| *Battalion 1.5 EC | 66330-374 | deltamethrin | 12 | dfghij | dfghj |
| *Baythroid XL 1EC | 264-840 | beta-cyfluthrin | 12 | acfh | cfhk |
| Beleaf 50SG | 71512-10-279 | flonicamid | 12 | abc | bck |
| Belay | 59639-150 | clothianidin | 12 | acf | cfk |
| Belt SC | 264-1025 | flubendiamide | 12 | acf | cfk |
| *Bifenture EC | 70506-57 | bifenthrin | 12 | acfh | cfk |
| §Biobit HP | 73049-54 | Bt | 4 | abc | bck |
| Biobit XL 2.1FC | 73049-46 | Bt | 4 | abc | bck |
| *Brigade 10WS | 279-3108 | bifenthrin | 12 | abc | bck |
| *Brigade 2EC | 279-3313 | bifenthrin | 12 | acf | cfk |
| Calypso 4F | 264-806 | thiacloprid | 12 | acf | cfk |
| §Carpovirusine 0.99SC | 66330-55 | granulosis virus | 4 | acfhlo | achf |
| Centaur WDG | 71711-21 | buprofezin | 12 | abc | beg |
| Checkmate CM-F 14.3S | 56336-37 | pheromone | 4 | abcj | bcd |
| Checkmate CM-OFM Duel | 56336-49 | pheromone | 0 | b | – |
| Checkmate OFM-F 24.6S | 56336-24 | pheromone | 0 | abc | – |
| Clutch 50 WDG | 59639-152 | clothianidin | 12 | abc | bck |
| §Cyd-X 0.06SC | 70051-44 | granulosis virus | 4 | ac | bck |
| *Danitol 2.4EC | 59639-35 | fenpropathrin | 24 | acfh | cfhk |
| Delegate 25WG | 62719-541 | spinetoram | 4 | ac | cfk |
| §Deliver 18WG | 70051-69 | Bt | 4 | abc | bck |
| *Delta Gold 1.5 EC | 264-1011-1381 | deltamethrin | 12 | dfghij | dfghj |
| §Des-X | 67702-22-70051 | potassium fatty acids | 12 | dfghij | |
| *Diazinon 50W | 66222-10 | diazinon | 96 | abc | bcjk |
| Dimate 4EC | 51036-110-9779 | dimethoate | 48 | afghjl | fghjk |

Table 17.2.1 Insecticides and acaricides

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator PPE | Early Entry PPE |
|--------------------|---------------------|-------------------------------------|------------------|-----------------------|------------------------|
| Dimethoate 4EC | 19713-231 | dimethoate | 48 | fghjk | fghjk |
| Dimethoate 400 | 34704-207 | dimethoate | 10 days | acfil | efgj |
| §Dipel DF | 73049-39 | Bt | 4 | abcp | bck |
| *Endigo ZC | 100-1276 | lambda-cyhalothrin, thiamethoxam | 24 | dfgij | dfgj |
| §Entrust 80WP | 62719-282 | spinosad | 4 | ac | bck |
| Envidor 2SC | 264-831 | spiroticlofen | 12 | abc | abc |
| Esteem 35WP | 59639-115 | pyriproxyfen | 12 | ac | bce |
| *Fanfare 2EC | 66222-99 | bifenthrin | 12 | acfh | cfk |
| §GF-120 | 62719-498 | spinosad | 4 | ac | bck |
| *Guthion 50WS | 66222-162 | aziphos-methyl | 14-15 days(E) | efghijm | efghj |
| Imidan 70W | 10163-169 | phosmet | 3-7 days(E) | abcjl | bcjk |
| Intrepid 2F | 62719-442 | methoxyfenozide | 4 | abc | beg |
| §Isomate-C TT | 53575-25 | pheromone | 0 | b | — |
| §Isomate-CM/OFM TT | 53575-30 | pheromone | 0 | b | — |
| Isomate PTB Dual | 53575-43 | pheromone | 0 | b | — |
| Isomate-M 100 | 53575-19 | pheromone | 0 | b | — |
| §Javelin 7.5WDG | 70051-66 | Bt | 4 | abcp | bck |
| JMS Stylet Oil | 65564-1 | paraffinic oil | 12 | acf | cfk |
| Kanemite 15SC | 66330-38 | acequinocyl | 12 | acf | cfk |
| Kelthane 50WSP | 62719-414 | dicofol | 48 | bcehijl | bchk |
| §Kumulus 80DF | 51036-352 | sulfur | 24 | abfh | bchk |
| *Lambda-Cy 1EC | 70506-121 | lambda-cyhalothrin | 24 | acfh | acf |
| *Lannate 90SP | 352-342 | methomyl | 48-96(E) | acfhq | cfhk |
| *Lannate LV 2.4L | 352-384 | methomyl | 48-96(E) | acfhilq | cfhk |
| *Leverage 2.7SE | 264-770 | imidacloprid/cyfluthrin | 12 | dfghi | fghk |
| *Leverage 360 | 2645-1104 | imidacloprid/ beta-cyfluthrin | 12 | acf | cfk |
| *Lorsban 4EC | 62719-220 | chlorpyrifos | 96 | dfgijlq | dfgj |
| Lorsban Advanced | 62719-591 | chlorpyrifos | 96 | dfgijlq | dfgj |
| Lorsban 75WG | 62719-301 | chlorpyrifos | 96 | dfgijlq | dfgj |
| Malathion 57EC | 34704-108 | malathion | 12 | acfh | cfhk |
| Malathion 5EC | 19713-217 | malathion | 12 | acf | cfk |
| Movento 240SC | 264-1050 | spirotetramat | 24 | acfh | acfh |
| §M-Pede 49L | 53219-6 | insecticidal soap | 12 | ac | bck |
| *Mustang Max EC | 279-3327 | zeta-cypermethrin | 12 | acfh | cfk |
| §Neemix | 70051-9 | azadirachtin | 12 | acfh | cfhk |
| Nexter 75WS | 7969-106 | pyridaben | 12 | abchjl | bchjkl |
| §Omni Spray Oil 6E | 5905-368 | mineral oil | 12 | acf | cfk |
| Onager 1EC | 10163-277 | hexythiazox | 12 | abc | abc |
| *Perm-Up 3.2EC | 70506-9 | permethrin | 12 | acfh | cef |
| Portal 0.4EC | 71711-19 | fenpyroximate | 12 | acfhj | dfghij |
| *Pounce 25 WP | 279-3051 | permethrin | 12 | abc | bck |
| *Proaxis 0.5CS | 74921-3-34704 | gamma-cyhalothrin | 24 | acfh | cfk |
| *Proclaim 5SG | 100-904 | emamectin benzoate | 12 or 48 (E) | acef | cfhk |
| Provado 1.6F | 264-763 | imidacloprid | 12 | acf | cfk |

Table 17.2.1 Insecticides and acaricides

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator PPE | Early Entry PPE |
|---------------------|---------------------|--|------------------|-----------------------|------------------------|
| Purespray Spray Oil | 69526-5 | petroleum oil | 4 | acf | cef |
| §Purespray Green | 69526-9 | mineral oil | 4 | acf | cfk |
| §PyGanic 1.4EC | 1021-1771 | pyrethrins | 12 | acf | cfk |
| Pyrenone | 432-1033 | pyrethrins/PBO | 12 | acf | cfk |
| Rimon 0.83EC | 66222-35-400 | novaluron | 12 | acfh | cefh |
| Savey 50DF | 10163-250 | hexythiazox | 12 | abc | abc |
| Sevin XLR Plus | 264-333 | carbaryl | 12 | acfj | cfjk |
| Sevin 4F | 264-349 | carbaryl. | 12 | acfj | cfjk |
| Sherpa | 34704-983 | imidacloprid | 12 | acf | cfk |
| SPLAT Cydia | 80286-3 | pheromone | 4 | acfh | afhk |
| SPLAT OFM 30M-1 | 80286-1 | pheromone | 4 | acfh | afhk |
| *Supracide 25W | 10163-244 | methidathion | 72 | abclq | bck |
| §Surround WP | 70060-14 | kaolin | 4 | aclo | ac |
| *Taiga Z 1CS | 100-1112-1381 | lambda-cyhalothrin | 24 | acfh | cfk |
| *Temprano 0.15EC | 67760-71-400 | abamectin | 12 | acfh | dfgh |
| *Thionex 3EC | 66222-63 | endosulfan | 7 days | acfhijm | cfhk |
| *Thionex 50W | 66222-62 | endosulfan | 20 days | acfhijm | cfhk |
| Tourismo | 71711-33 | buprofezin & flubendiamide | 12 | abcj | cfgjh |
| §Trilogy | 70051-2 | neem extract | 4 | acf | cfk |
| *Vendex 50WP | 1812-413 | hexakis | 48 | dfghijq | cfhk |
| §Virosoft CP4 | 72898-4 | granulosis virus | 4 | abch | bchk |
| Voliam Flexi | 100-1319 | thiamethoxam/ chlorantraniliprole | 12 | acf | cfk |
| *Voliam Xpress EC | 100-1320 | lambda-cyhalothrin/ chlorantraniliprole | 24 | acf | cfk |
| *Vydate 2L | 352-372 | oxamyl | 48 | dfghijm | dfghj |
| *Warrior II 2.08CS | 100-1295 | lambda-cyhalothrin | 24 | acfh | cfk |
| Zeal 72WS | 59639-138 | etoxazole | 12 | acf | acf |

Table 17.2.2 Fungicides and bactericides

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator PPE | Early Entry PPE |
|-------------------------|---------------------|--|------------------|-----------------------|------------------------|
| Abound 2.08F | 100-1098 | azoxystrobin | 4 | acf | cfk |
| Adament 50WG | 264-1052 | trifloxystrobin | 12 | acf | cfk |
| Ag Streptomycin | 66222-121 | streptomycin | 12 | acfo | efgo |
| §Agri-Mycin 17WP | 55146-96 | streptomycin | 12 | acf | efg |
| Agri-fos | 71962-1 | phosphite | 4 | abch | bdhd |
| Aliette WDG | 264-516 | fosetyl-Al | 12 | abch | bchk |
| Allpro Lime Sulfur | 769-558 | lime sulfur | 48 | efghijl | efghj |
| Apogee 27.5% | 7969-188 | prohexadione calcium | 12 | acf | cfk |
| Applause 720 | 50534-188 | chlorothalonil | 12 | acfhil | cfhk |
| Bac-Master | 55146-80-5481 | streptomycin | 12 | abcl | fchk |
| Bayleton 50DF | 264-737-5481 | triadimefon | 12 | acfj | cfk |
| Bloomtime Biological FD | 71975-1 | <i>Pantoea agglomerans</i> <i>strain E325</i> | 4 | abco | bck |

Table 17.2.2 Fungicides and bactericides

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator PPE | Early Entry PPE |
|----------------------------|---------------------|---|------------------|-----------------------|------------------------|
| Botran 75W | 10163-189 | dichloronitroaniline | 12 | ac | bck |
| Bravo Weather Stik | 50534-188-100 | chlorothalonil | 12 | acf | cfhk |
| Bravo Ultrex | 50534-201-100 | chlorothalonil | 12 | dfghijl | dfghj |
| Cabrio EG | 7969-187 | pyraclostrobin | 12 | acf | cfk |
| Captan 50WP | 66330-234 | captan | 24(E) | achilo | cfhk |
| Captan 80WDG | 66222-58-66330 | captan | 24(E) | acfhio | cfhk |
| Captec 4L | 66330-239 | captan | 24(E) | acfh | cfhk |
| Champ Formula-2 4.6F | 55146-64 | copper hydroxide | 24(E) | acfh | cfhk |
| Chloronil 720 | 50534-188-100 | chlorothalonil | 12 | acf | cfhk |
| C-O-C-S WDG | 34704-326 | copper oxychloride & basic copper sulfate | 24 | acfh | cfhk |
| Concorde | 72167-24-1812 | chlorothalonil | 12 | acfh | cfhk |
| Cuprofix Ultra 40 Disperss | 70506-201 | basic copper sulfate | 48 | ac | cfk |
| Dithane Rainshield DF | 62719-402 | mancozeb | 24 | acf | cfk |
| Dithane F-45 Rainshield | 62719-396 | mancozeb | 24 | cefhi | cef |
| Dithane M45 | 62719-387 | mancozeb | 24 | cefhi | cef |
| Echo 720 | 60063-7 | chlorothalonil | 12(E) | acfhm | cfhk |
| Echo 90DF | 60063-10 | chlorothalonil | 12(E) | acfhm | bchk |
| Elevate 50WDG | 66330-35 | fenhexamid | 12 | acf | cfk |
| Elite 45WP | 264-749 | tebuconazole | 12 | acfh | acfh |
| Equus 500ZN | 72167-27-66222 | chlorothalonil | 12 | acfh | cfhk |
| Ferbam Granuflo | 45728-7 | ferbam | 24 | acfhjl | cfhjk |
| Fireline | 80990-1 | oxytetracycline HCl | 12 | acfh | cfhk |
| Firewall 17WP | 80990-4-82695 | streptomycin | 12 | acfq | cf |
| Flint | 264-777 | trifloxystrobin | 12 | acf | cfk |
| Fungi-Phite | 83472-1 | phosphite | 4 | abch | bchk |
| GEM 500 SC | 264-826 | trifloxystrobin | 12 | acf | cfk |
| Indar 2F | 62719-416 | enbuconazole | 12 | acfj | cfk |
| Inspire Super MP | 100-1317 | difenoconazole & cyprodinil | 12 | acf | cfk |
| Iprodione 4L AG | 51036-340 | iprodione | 24 | acefjl | cef |
| JMS Stylet Oil | 65564-1 | Paraffinic oil | 4 | acf | cfk |
| Kocide 2000 | 352-656 | copper hydroxide | 48 | acfh | cfhk |
| Kocide 3000 | 352-662 | copper hydroxide | 48 | acfh | cfhk |
| §Kumulus DF | 51036-352 | sulfur | 24 | acfh | cfhk |
| *Manzate 75DF | 1812-414-352 | mancozeb | 24 | cefhi | cef |
| Manzate Flowable | 1812-416 | mancozeb | 24 | cefhi | bceh |
| ManKocide | 1812-360 | mancozeb + copper hydroxide | 24 | cefhi | cefh |
| Mertect 340-F | 100-889 | thiabendazole | 12 | ac | cfk |
| §Microthiol Disperss | 70506-187 | sulfur | 24 | acf | cfhk |
| Miller Lime Sulfur | 66196-2-72 | lime sulfur | 48 | efghijl | efghj |
| §Mycoshield 17WP | 55146-97 | oxytetracycline HCl | 12 | acfh | cfhk |
| No Scald-DPA-23 | 2792-45 | diphenylamine | psthvst | acf | — |
| §NuCop 50DF | 45002-4 | copper hydroxide | 24 | acfh | cfhk |
| §OxiDate | 70299-2 | hydrogen dioxide | 1 | eg | bck |
| Penbotec 400SC | 43813-32-64864 | pyrimethanil | psthvst | acf | — |
| Penncozeb 75DF | 70506-185 | mancozeb | 24 | cefhi | cef |
| Penncozeb 4FL | 70506-194 | mancozeb | 24 | cefhi | cef |

Table 17.2.2 Fungicides and bactericides

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator | Early Entry |
|---------------------------|----------------|--------------------------|-----------|------------|-------------|
| | | | | PPE | PPE |
| Phostrol | 55146-83 | phosphite | 4 | acfh | cfhk |
| Polyram 80DF | 7969-105-34704 | metiram | 24 | cefhi | cef |
| Pristine 38WDG | 7969-199 | pyraclostrobin/boscalid | 12 | acf | cfk |
| *Procure 50WS | 400-431 | triflumazole | 12 | acf | cfk |
| Quash | 59639-147 | metconazole | 12 | acf | cfk |
| Quintec | 62719-375 | quinoxifen | 12 | acf | cfk |
| Rally 40WSP | 62719-410 | myclobutanil | 24 | acfh | cfhk |
| §Rex Lime Sulfur Solution | 71096-6 | lime sulfur | 48 | efghijl | efghj |
| Ridomil Gold EC | 100-801 | mefanoxam | 48 | acf | cfk |
| Rovral 50WP | 264-453 | iprodione | 24 | efgijl | cfk |
| Rovral 4 Flowable | 264-482 | iprodione | 24 | acf | cfk |
| Rubigan EC | 10163-273 | fenarimol | 12 | dfghij | dfghj |
| Scala | 264-788 | pyrimethanil | 12 | acf | ack |
| Scholar | 100-969 | fludioxonil | psthvst | acf | — |
| Scholar SC | 100-1242 | fludioxonil | psthvst | acf | — |
| §Serenade ASO | 69592-12 | <i>Bacillus subtilis</i> | 4 | abco | abc |
| Sovran 50WDG | 7969-154 | kresoxim-methyl | 12 | acf | cfk |
| Streptrol | 55146-80 | streptomycin | 4 | acfl | cef |
| Sulforix Lime Sulfur | 66196-3-72 | lime sulfur | 48 | efghijl | efghj |
| Syllit FL | 55260-6 | dodine | 48 | acfhij | efghj |
| T-methyl 70W WSB | 66330-301 | thiophanate-methyl | 48(E) | acf | efgj |
| Tebuzol 45DF | 70506-113 | tebuconazole | (E) | acfh | acfh |
| Thiolux Jet | 100-1138 | sulfur | 24 | acfh | efg |
| Thiophanate Methyl 85WDG | 72167-10-66222 | thiophanate-methyl | 12(E) | acf | cfk |
| Thiram Granuflo | 45728-21 | thiram | 24 | acfj | cfk |
| Tilt | 100-617 | propiconazole | 12 | acfh | cfhk |
| Topsin M 70WP | 73545-11-70506 | thiophanate-methyl | 48 | acefgi | efgi |
| Topsin M WSB | 73545-16-70506 | thiophanate-methyl | 48 | acefgi | efgj |
| Topsin M 4.5FL | 73545-13-70506 | thiophanate-methyl | 48 | acefgi | efgj |
| Triadimefon 50DF | 264-737-45728 | triadimefon | 12 | acfjo | cfjk |
| §Trilogy | 70051-2 | neem extract | 4 | acf | cfk |
| Vanguard WG | 100-828 | cyprodinil | 12 | acf | cfk |
| Vintage SC | 10163-275 | fenarimol | 24 | dfghij | dfghj |
| Wettable sulfur | 5905-289 | sulfur | 24 | acf | cfk |
| Ziram 76DF | 4581-140-82695 | ziram | 48 | abchl | bchk |

Table 17.2.3 Growth Regulators

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator | Early Entry |
|--------------|---------------|------------------------|-----------|------------|-------------|
| | | | | PPE | PPE |
| Amid-Thin W | 5481-426 | NAD | 48 | abc | bck |
| Apogee | 7969-188 | prohexadione Ca | 12 | afc | cfk |
| Ethrel | 264-267 | ethephon | 48 | acfh | efghj |
| Exilis Plus | 62097-9-82917 | BA | 12 | acfhi | abch |
| Fruitone N | 5481-427 | NAA | 48 | acf | bck |
| Maxcel | 73049-407 | BA | 12 | acf | cfk |
| Novagib | 62097-7-82917 | GA ₄₊₇ | 4 | acfhij | abch |
| Perlan | 62097-6-82917 | GA ₄₊₇ + BA | 4 | acfhi | abch |
| §Pro-Gibb 4% | 73049-15 | GA ₃ | 12 | acfh | cfhk |

Table 17.2.3 Growth Regulators

| Product | EPA Reg. No. | Common Name | REI (hrs) | Applicator PPE | Early Entry PPE |
|-------------------|--------------|------------------------|-----------|----------------|-----------------|
| §Pro-Gibb Plus 2X | 73049-16 | GA ₃ | 4 | abc | bck |
| Pro-Vide PGR | 73049-3 | GA ₄₊₇ | 12 | acfh | cfhk |
| §Pro-Vide 10 SG | 73049-409 | GA ₄₊₇ | 12 | acfh | cfhk |
| Promalin | 73049-41 | GA ₄₊₇ + BA | 4 | abch | bck |
| ReTain | 73049-45 | AVG | 12 | abc | bck |
| RiteSize | 55146-86 | BA + GA ₄₊₇ | 12 | ach | bchk |
| RiteWay | 71368-60 | BA | 12 | acfh | cfhk |
| Tre-Hold RTU | 5481-452 | NAA | 12 | acfh | cfhk |
| Typrus | 55146-85 | GA ₄₊₇ | 24 | acfh | cdfh |
| Typy | 55146-78 | BA + GA ₄₊₇ | 24 | dfghim | abch |

Key:

- a..... Long-sleeved shirt & long pants
b..... Waterproof gloves
c..... Shoes plus socks
d..... Coveralls over short-sleeved shirt & short pants
e..... Coveralls over long-sleeved shirt & long pants
f..... Chemical-resistant gloves; refer to label for specifics
g..... Chemical-resistant footwear & socks
h..... Protective eyewear
i..... Chemical-resistant apron when cleaning equipment, mixing or loading
j..... Chemical-resistant headgear for overhead exposure
k..... Coveralls
l..... Dust/mist filtering respirator (MSHA/NIOSH approval no. prefix TC-21C)
m..... Respirator with either an organic vapor-removing cartridge with a pre-filter approved for pesticides (MSHA/NIOSH approval no. prefix TC-23C) or a canister for pesticides (MSHA/NIOSH approval no. prefix TC-14G)

- n..... Face shield for mixing and loading
o..... Dust/mist filtering respirator (NIOSH approved) with any N, R, P or HE filter
p..... Dust/mist filtering respirator meeting NIOSH standards of at least N-95, R-95, and P-95
q..... NIOSH approved respirator with any R, P, or HE filter
PPE..... Personal protective equipment
REI..... Re-entry interval
(E)..... Refer to label for details of restricted entry interval
psthvst.... Post-harvest use only
§..... Potentially acceptable in certified organic programs
*..... Restricted-use pesticide; may be purchased and used only by certified applicators, or used by someone under the supervision of a certified applicator.

17.3 Spray Mixture Compatibility Notes

Read the label for specific crops or situations. Compatibilities may be changed by certain adjuvants, different formulations, combinations of more than two materials, and environmental factors such as temperature and humidity.

- Unless otherwise noted on the label, use soon after mixing, preferably in systems with continuous agitation.
- Physical compatibility: Although there may be no chemical incompatibility between the active ingredients of 2 given pesticides, some formulations of these products may not be physically compatible. This is particularly true when mixing at high concentrations and when mixing wettable powders with emulsifiable concentrates. It is recommended that a small batch of a proposed mixture be prepared before making tank combinations, to check for unacceptable physical reactions.

17.3.1 Suggested Mixing Sequence

Always mix different spray materials in the following order, starting with:

- water soluble bags (WS)
- water dispersible granules and dry flowables (WDG, DF)
- wettable powders (WP)
- liquid flowables (L, F, FC)
- sprayable concentrates (S, SC, LC)
- emulsifiable concentrates (EC)
- surfactants, oils, and adjuvants Do not add oils, surfactants, or emulsifiable concentrates prior to dry formulations, or lumping may occur.

17.4. Tree Fruit Reference Materials.

Univ. Massachusetts Fact Sheets Online at: <http://www.umass.edu/fruitadvisor/factsheets/factsheets.html>

| | |
|--------|---|
| F-101R | Controlling Growth of Apple Trees |
| F-114R | Limb Positioning |
| F-116R | Maintaining a Balance Between the Top and Bottom of Apple Trees |
| F-118R | Thinning Apples Chemically |
| F-119R | Foliar Calcium Sprays for Apples |
| F-124 | Nutrient Recommendations for Apples |
| F-126 | Prebloom Nutrient Application for Apple Trees |
| F-127R | Apogee – A New Growth Retardant for Apples |
| F-128 | Expansion of the Apple Harvest Season |
| F-129A | Late-season “Rescue” Thinning with Ethephon |
| F-130 | Apple Tree Pruning and Training (English & Spanish) |
| F-131 | Enhancing Return Bloom on Apple with Plant Growth Regulators |
| F-133 | An Annual Fireblight Management Program |
| | Predicting Delicious Storage Scald |
| F-200 | Peach Leaf Curl |
| | Block-specific Spray Calibration Worksheet |
| | Dogwood Borer in Dwarf Apples |

Univ. Maine Publications

| | |
|--|---|
| Orchard Fruit Pest Management - applicator training manual | http://pmo.umext.maine.edu/apple/OrchardFruitPAT.pdf |
| Planting and Early Care of Fruit Trees | http://www.umext.maine.edu/onlinepubs/htmpubs/2411.htm |
| Renovating Old Apple Trees | http://www.umext.maine.edu/onlinepubs/htmpubs/2409.htm |

Univ. Vermont Fact Sheets

Online at: orchard.uvm.edu/

| |
|--|
| IPM 'Quick' Summary for Monitoring Apple Arthropod Pests |
| IPM Checklist for Vermont |
| Key Arthropods and Diseases Affecting Apples: A Synopsis |
| Apple Orchard Information for Beginners |

Newsletters & Periodicals

| | |
|---------------------------------------|---|
| Healthy Fruit Newsletter (UMass) | http://www.umass.edu/fruitadvisor/healthy_fruit/ |
| Fruit Notes (UMass) | http://www.umass.edu/fruitadvisor/fruitnotes/FruitNotes.htm |
| Apple Pest Report Newsletter (UMaine) | http://pmo.umext.maine.edu/apple/AppPestReport.html |
| Apple IPM News (UVM) | http://orchard.uvm.edu/uvmapple/pest/ |

Websites

- NEWA, current weather and pest forecast information, <http://newa.cornell.edu/>
- Pesticide labels and MSDS sheets for most registered pesticides: <http://www.cdms.net/manuf/manuf.asp> [NOTE: The labels at this site may or may not contain state-specific restrictions.]
- PRONewEngland: <http://pronewengland.org/> Links to university, government, private sector pest management contacts, state pesticide registrations, fact sheets, and other online pest management information for the six New England states.
- Rhode Island Apple IPM: <http://www.uri.edu/research/ipm>
- Rhode Island Fruit Growers website: <http://www.rifruitgrowers.org>
- Rhode Island product registration: <http://state.ceris.purdue.edu/htm/ri.htm>
- UMaine Apple IPM: <http://pmo.umext.maine.edu/apple/> Links to fact sheets, apple pest report newsletter, and updated weather-driven pest phenology models of use to commercial and hobbyist apple growers in Maine.
- Maine State Pomological Society <http://www.maineapples.org/> Apple lore, orchard locations in Maine.
- UMass Fruit Advisor: <http://www.umass.edu/fruitadvisor/> Provides resources for commercial tree- and small-fruit growers, including access to archives of *Healthy Fruit*, *Berry Notes*, and *Fruit Notes*, various fact sheets, videos, and other useful information for fruit growers.
- UConn IPM: <http://www.ipm.uconn.edu> Provides timely information on fruit pests and other fruit topics including meeting announcements and the online version of Crop Talk, a newsletter for commercial fruit and vegetable growers.
- Univ. Vermont’s OrganicA: <http://www.uvm.edu/organica/> A resource for organic apple production in New England.
- Univ. Vermont’s Apple Program: <http://orchard.uvm.edu/> A website for commercial apple growers in Vermont.

Cornell Tree Fruit IPM Fact SheetsOnline at: www.nysipm.cornell.edu/factsheets/treefruit/

A series of fact sheets developed for insect and disease pests of tree-fruit crops. These outline the biology, monitoring, and management of various pests and include color photographs to aid in identification.

Insect IPM Fact Sheets

| | |
|--------------|--|
| 102GFSTF-I1 | Pear Psylla. 1978. |
| 102GFSTF-I2 | Codling Moth. 1996. |
| 102GFSTF-I3 | Plum Curculio. 1980. |
| 102GFSTF-I4 | Green Fruitworm. 1980. |
| 102GFSTF-I5 | Obliquebanded Leafroller. 1980. |
| 102GFSTF-I6 | Peachtree Borer. 1980. |
| 102GFSTF-I8 | Apple Maggot. 1991. |
| 102GFSTF-I9 | Spotted Tentiform Leafminer. 1980. |
| 102GFSTF-I10 | European Red Mite. 1980. |
| 102GFSTF-I11 | Rosy Apple Aphid. 1980. |
| 102GFSTF-I12 | San Jose Scale. 1980. |
| 102GFSTF-I13 | White Apple Leafhopper. 1980. |
| 102GFSTF-I14 | Dogwood Borer. 1985. |
| 102GFSTF-I15 | Cherry Fruit Fly & Black Cherry Fruit Fly. 1988. |
| 102GFSTF-I16 | Woolly Apple Aphid. 1988. |
| 102GFSTF-I17 | Oriental Fruit Moth. 1988. |
| 102GFSTF-I18 | Beneficial Insects. 1989. |
| 102GFSTF-I19 | Redbanded Leafroller. 1989. |
| 102GFSTF-I20 | European Apple Sawfly. 1991. |
| 102GFSTF-I21 | Tarnished Plant Bug. 1991. |
| 102GFSTF-I22 | Comstock Mealybug. 1991. |
| 102GFSTF-I23 | Predatory Mites. 1995. |
| 102GFSTF-I24 | American Plum Borer. 1997. |
| 102GFSTF-I25 | Phytophagous Mirid Bugs. 1998. |
| 102GFSTF-I26 | Apple-Boring Beetles. 1999. |

Disease IPM Fact Sheets

| | |
|--------------|---|
| 102GFSTF-D3 | Fire Blight. 1994. |
| 102GFSTF-D4 | Powdery Mildew of Apple. 2004. |
| 102GFSTF-D5 | Cedar Apple Rust. 1981. |
| 102GFSTF-D6 | Black Knot of Plum. 1992. |
| 102GFSTF-D7 | Phytophthora Root and Crown Rots. 1992. |
| 102GFSTF-D8 | Cherry Leaf Spot. 1993. |
| 102GFSTF-D9 | Apple Scab. 1993. |
| 102GFSTF-D10 | Brown Rot of Stone Fruits. 1993. |
| 102GFSTF-D11 | Sooty Blotch and Flyspeck. 1994. |
| 102GFSTF-D12 | Perennial Canker. 1995. |

Mammal IPM Fact Sheets

| | |
|-------------|----------------------------------|
| 102GFSTF-M1 | Meadow Vole and Pine Vole. 1988. |
|-------------|----------------------------------|

Cornell Extension Bulletins

| | |
|--------|--|
| IB 219 | Orchard Nutrition Management. 1991. hdl.handle.net/1813/3305 |
| IB 221 | Predicting Harvest Date for Apples. 1992. hdl.handle.net/1813/3299 |
| IPM207 | Apple IPM. 1999. nysipm.cornell.edu/publications/apple_man |

Cornell's Scaffolds NewsletterOnline at: <http://www.nysaes.cornell.edu/ent/scaffolds/>**Cornell Food and Life Sciences Bulletins**Online at: <http://www.nysaes.cornell.edu/pubs/fls/>

| | |
|---------|---|
| FLS 50 | Green Fruitworms. 1974. |
| FLS 58 | Growth Stages in Fruit Trees - From Dormant to Fruit Set. 1976. |
| FLS 92 | Biology and Control of Cytospora Fungi in Peach Plantings. 1982. |
| FLS 95 | Blister Spot of Apple. 1982. |
| FLS 108 | Diagnostic Keys for Diseases of Apple, Peach and Cherry. 1984. |
| FLS 116 | Chemical Thinning of Apples. 1986. |
| FLS 117 | Peach and Nectarine Varieties in New York State. 1986. |
| FLS 118 | Preventing Decomposition of Agricultural Chemicals by Alkaline Hydrolysis in the Spray Tank. 1986. |
| FLS 123 | Basing European Red Mite Control Decisions on a Census of Mites Can Save Control Costs. 1988. |
| FLS 124 | Insects Associated with Apple in the Mid-Atlantic States. 1988. |
| FLS 127 | Sweet and Tart Cherry Varieties: Descriptions and Cultural Recommendations. 1989. |
| FLS 128 | Effects of Ground Cover Manipulations on Pest and Predator Mite Populations on Apple in Eastern NY. 1989. |
| FLS 142 | Fruit Pest Events and Phenological Development According to Accumulated Heat Units. 1993. |
| FLS 143 | Sampling Second Generation Spotted Tentiform Leafminer. 1993. |
| FLS 158 | New York Integrated Fruit Production Protocol for Apples. 2006. |

NRAES Publications

Available from NRAES, Natural Resource, Agriculture and Engineering Service, Cooperative Extension, P.O. Box 4557, Ithaca, NY 14852-4557, Tel: 607-255-7654 FAX: 607-254-8770

| | |
|-----------|---|
| NRAES-37 | Orchard Spraying: Getting Results. 1993. |
| NRAES-38 | Hydraulic nozzles for boom sprayers. 1994. |
| NRAES-78 | On-Farm Agrichemical Handling Facilities. 1995. |
| NRAES-169 | Tree Fruit Field Guide to Insect, Mite and Disease Pests and Natural Enemies of Eastern North Amer. 2006. |

Brown Marmorated Stink Bug Fact Sheets and LinksEastern NY Brown Marmorated Stink Bug Project: <http://hudsonvf.cce.cornell.edu/bmsb1.html>Maryland: <http://www.hgic.umd.edu/content/brownstinkbug.cfm>New Jersey: <http://njaes.rutgers.edu/stinkbug/>

Northeastern IPM Center: <http://www.northeastipm.org/working-groups/bmsb-working-group/bmsb-information/>
 Pennsylvania: <http://ento.psu.edu/extension/factsheets/brown-marmorated-stink-bug>

Spotted Wing Drosophila Fact Sheets and Links

http://www.ipm.ucdavis.edu/IPMPROJECT/workshop-spottedwing_drosophila.html <http://swd.hort.oregonstate.edu/>

17.5 Diagnostic and Analytical Services

To submit samples for insect or disease diagnosis or plant identification, contact:

UConn Home & Garden Education Center
 Ratcliffe Hicks Building, Room 4
 1380 Storrs Rd., Unit 4115
 Storrs, CT 06269-4115
 (860)486-6271 or toll-free 1-877-486-6271
www.ladybug.uconn.edu

Plant Disease Information Office
 The Connecticut Agricultural Experiment Station
 123 Huntington Street, P.O. Box 1106
 New Haven, CT 06504
 (203) 974-8601
www.ct.gov/caes/pdio

UMaine Coop. Ext. Insect & Plant Disease Diagnostic Lab
 Pest Management Office
 491 College Avenue
 Orono, ME 04473
 Insect Inquiries: 207-581-2963
 Disease Inquiries: 207-581-3883
<http://umaine.edu/ipm/ipddl/>

UMass Plant Diagnostic Lab
 101 University Drive, Suite A7
 Amherst, MA 01002
 413-545-3208
<http://extension.umass.edu/agriculture/index.php/services/plant-problem-diagnostics>

UNH Cooperative Extension Insect Identification
 G28 Spaulding Hall
 38 Academic Way
 Durham, NH 03824
 603-862-3200
<http://extension.unh.edu/Agric/AGPDTS/ArthroID.htm>

UNH Cooperative Extension Plant Diagnostic Lab
 G37 Spaulding Hall
 38 Academic Way
 Durham, NH 03824
 603-862-3200; FAX 603-862-2717
<http://extension.unh.edu/Agric/AGPDTS/PlantH.htm>

URI Plant Clinic
 3 East Alumni Ave.
 Cooperative Extension Education Center
 Kingston, RI 02881
 401-874-2900
<http://www.uri.edu/ce/ceec/plantclinic.html>

UVM Plant Diagnostic Clinic
 201 Jeffords Hall
 63 Carrigan Dr.
 University of Vermont
 Burlington, VT 05405
 802-656-0493
www.pss.uvm.edu/pd/pdc

To submit soil or leaf tissue nutrient analysis samples, contact:

Connecticut Agricultural Experiment Station
 Slate Laboratory
 P.O. Box 1106
 New Haven, CT 06504
 203-974-8521
<http://www.caes.state.ct.us/Soiloffice/soiltesting.htm>

UConn Soil Nutrient Analysis Laboratory
 6 Sherman Place, U-102
 University of Connecticut
 Storrs, CT 06269-5102
 860-486-4274
<http://www.soiltest.uconn.edu>

UMaine Analytical Laboratory
 Maine Soil Testing Service
 5722 Deering Hall
 University of Maine
 Orono, ME 04469-5722
 207-581-3591 or 207-581-2945
<http://anlab.umesci.maine.edu/>

UMass Soil & Tissue Testing Laboratory
 West Experiment Station
 682 North Pleasant Street
 University of Massachusetts
 Amherst, MA 01003
 413-545-2311
<http://www.umass.edu/soiltest/>

UNH Cooperative Extension Soil Testing Program
 Spaulding Life Science Center, Room G28
 38 Academic Way
 Durham, NH 03824
 603-862-3200
<http://extension.unh.edu/Agric/AGPDTS/SoilTest.htm>

17.6 Extension Faculty and Staff

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| NEW HAMPSHIRE | | |
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| RHODE ISLAND | | |
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17.7 Abbreviations and Symbols Used in this Publication

Formulations

| | |
|---------|----------------------------|
| a.e. | acid equivalent |
| A | acre |
| AI | active ingredient |
| AS | aqueous solution |
| CS | capsule suspension |
| D | dust |
| DF | dry flowable |
| DG | dispersible granule |
| E, EW | emulsion, emulsifiable |
| EC | emulsifiable concentrate |
| E.U.P. | Experimental Use Permit |
| F, FL | flowable |
| FC | flowable concentrate |
| FM | flowable microencapsulated |
| G | granular |
| L | liquid |
| LC | liquid concentrate |
| P | pellets |
| PHI | preharvest interval |
| S | sprayable |
| SC | suspension concentrate |
| SG | soluble granule |
| SP | soluble powder |
| SS | soluble salt |
| ULV | ultralow volume |
| W | wettable |
| WBC | water-based concentrate |
| WDG, WG | water dispersible granules |
| WS | water soluble packets |
| WP | wettable powder |

Product-Specific Symbols

| | |
|-----|--|
| * | restricted-use pesticide; may be purchased and used only by certified applicators, or used by someone under the supervision of a certified applicator. |
| # | 2(ee) recommendation based on an efficacy statement |
| ## | 2(ee) recommendation based on quantitative efficacy data |
| § | potentially acceptable in certified organic programs |
| (§) | not all formulations of the active ingredient are acceptable in certified organic programs |

PHI (Pre-Harvest Interval) and REI (Restricted Entry Interval) Abbreviations

| | |
|-----|--|
| BL | Do not apply beyond bloom |
| DD | Delayed dormant application |
| GT | Do not apply beyond green tip |
| HIG | Do not apply beyond 1/2-in. green |
| PB | Prebloom applications only |
| PF | Do not apply beyond petal fall |
| PH | Postharvest applications allowed |
| SS | Do not apply beyond shuck split |
| 2C | Do not apply after 2d cover spray |
| (A) | Depends on rate, method or number of applications; refer to label for more details |
| (B) | Nonbearing trees only |
| (C) | Tart cherries only |
| (D) | Restricted entry interval: 96 hr (peaches), 72 hr (apples), 48 hr (pears) |
| (E) | Refer to label for details of restricted entry interval |
| (F) | Sweet cherries only |
| (G) | Refer to label for details on timing of application |

Codes for personal protective gear shown under table 17.2 for REI requirements.