

Insect Degree-Day Models

The following are examples of degree-day models used to predict insect development and optimize timing of insecticide applications.

Pest	Region	Threshold (°F)	Biofix	DD target	Event
Codling moth	Midwest	50	First sustained moth flight	250	3% egg hatch; apply an insecticide
San Jose scale	Midwest	51	First scale capture in pheromone trap	405	Crawler emergence
Oblique-banded leafroller*	NY	43	First adult capture	600	Sample for second and third instar larvae
Spotted tentiform leafminer*	NY	43	Start of second generation flight	690	Sample for third generation sap feeding
Tufted apple bud moth*	PA	45	First sustained flight	525-550	10% egg hatch; apply an insecticide and again in 300 DD
Oriental fruit moth*	CA	45	First moth captured	387	Egg hatch
Apple maggot*	NY	43.5	March 1	1130	Emergence of adults
Pear psylla*	WA, OR	41	January 1	144	Peak spring counts
Fruit-tree leafroller*	B.C.	41	February 1	277	50% egg hatch
Peachtree borer*	AR	50	January 1	1440	Start of consistent trap catches

* Many of these models have been developed outside of the Midwest, and they may need to be validated for use in this region.

Sources of Pest Management Supplies

Traps and General Equipment

Great Lakes IPM
(for traps, lures, and other monitoring supplies)
10220 Church Street, NE
Vestaburg, MI 48891
(517) 268-5693

Gempler's, Inc.
(for traps, lures, and other monitoring supplies)
211 Blue Mounds Road, P.O. Box 270
Mt. Horeb, WI 53572-0270
(800) 332-6744

Forestry Suppliers, Inc.
(for magnifiers, Optivisors, tally counters, waterproof notebooks, stake flags, etc.)
P.O. Box 8397
Jackson, MS 39284-8397
(800) 752-8460

BioQuip Products
(for beating sheets, vials, magnifiers, etc.)
17803 LaSalle Avenue
Gardena, CA 90248-3602
(310) 324-0620

Natural Enemies

ARBICO
P.O. Box 4247
Tucson, AZ 85738
(800) 827-2847

Beneficial Insectary
245 Oak Run Road
Oak Run, CA 96069
(916) 472-3715

Planet Natural
(formerly Bozeman Bio-Tech)
P.O. Box 3146
Bozeman, MT 59772
(406) 587-5891

G. B. Systems, Inc.
P.O. Box 19497
Boulder, CO 80308
(303) 473-9144

Rincon-Vitova Insectaries, Inc.
P.O. Box 1555
Ventura, CA 93002
(800) 248-2847

Stanley Gardens
P.O. Box 913
Belchertown, MA 01007-0913
(413) 323-6196

A 31-page directory, *Suppliers of Beneficial Organisms in North America*, Charles Hunter, 1992.
Available from:

State of California
Department of Pesticide Regulation
Environmental Monitoring and
Pest Management Branch
Attn: Beneficial Supplies Booklet
1020 N Street
Room 161
Sacramento, CA 95814
(916) 324-4101

Tree Fruit Pest Management References

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- Gleason, M., and D. Lewis. 1997. *Tree fruits insect and disease management for backyard fruit growers in the midwest*. IDEA 3. Iowa State University, University Extension Service, 26 Curtiss Hall, Ames, IA 50011. 41 pp.
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- Johnson, J.W., and M. Herr. 1995. *Apple insect scouting manual*. Great Lakes Publishing, 343 S. Union Street, Sparta, MI 49345. 36 pp.
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- Jones, A.L., and T.B. Sutton. 1996. *Diseases of tree fruits in the East*. NCR 45. Michigan State University Extension Service, 10-B Agriculture Hall, East Lansing, MI 48824-1039. (517-355-0240). 95 pp.
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Schwallier, P.G. 1996. *Apple thinning guide*. Great Lakes Publishing Co., 343 S. Union St., Sparta, MI 49345. (616-887-2666). \$11.50. 13 pp.

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