



*** Press Release ***

Invasion of the Light Brown Apple Moth

Community Gardeners Alerted to Visitors from Down Under

For Immediate Release

April 6, 2007

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SAN FRANCISCO- The light brown apple moth (*Epiphyas postvittana*), an invasive species native to Australia, has been detected in Alameda and Contra Costa counties and more recently in San Francisco and Marin County. In an attempt to halt the spread of the apple moth, the California Department of Food and Agriculture (CDFA) has issued an interim regulatory action to halt the spread of the apple moth until quarantine is established in the affected counties.

The State's interim regulatory action is directed at plant nurseries as well as to community gardens. In conformance with the State directive, the San Francisco Recreation and Park Department is issuing a fact sheet to all community gardens managed under its Community Gardens Program. Community gardeners are requested to leave intact host fruits and vegetables, including citrus, apples, pears, leafy greens, tomatoes, bell peppers, broccoli and cauliflower, in the community gardens until further instructions from the CDFA. Community gardeners, however, may continue to grow and carry out other fruits, vegetables and ornamental plants from the community gardens.

Under its Community Gardens Program, the San Francisco Recreation and Park Department manages 37 community gardens throughout the City. These community gardens are located on City property, including those under the jurisdiction of the Recreation and Park Department, Public Works and the Public Utilities Commission. All gardening activities within these community gardens are required to be organic-based.

For more information, contact the Recreation and Park Department's Public Information Office at (415) 831-2782.

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(see attached Pest Profile from the California Department of Food and Agriculture and Public Notice posted at all San Francisco Community Gardens)





PUBLIC NOTICE

(P l e a s e P o s t)

FACT SHEET

The light brown apple moth (*Epiphyas postvittana*), an invasive species native to Australia, was detected in Alameda and Contra Costa counties and more recently in San Francisco and Marin County. This uninvited pest threatens California's agricultural industry. In an attempt to halt the spread of the apple moth, the California Department of Food and Agriculture (CDFA) issued an interim regulatory action to halt the spread of the apple moth until quarantine is established in the affected counties.

The State's interim regulatory action is directed at plant nurseries as well as to community gardens. In conformance with the State directive, please observe the following practices:

- Do NOT remove host fruits and vegetables from your community garden until further notice. This includes citrus, apples, pears, leafy greens, tomatoes, bell peppers, broccoli and cauliflower.
- Feel free to continue growing and carry out other fruits, vegetables and ornamental plants from your community gardens.
- Remember to continue observing organic-based practices. No herbicides or pesticides may be used, except for organic-based materials, such as iron phosphate for snail and slug bait.

For more information, feel free to contact Marvin Yee, Community Gardens Program, at (415) 581-2541. Your cooperation is very important toward the eradication of the apple moth.

4/5/2007



Pest Profile

Updated 03/29/2007

Common Name: Light Brown Apple Moth (LBAM)
Scientific Name: *Epiphyas postvittana* (Walker)
Order and Family: Lepidoptera, Tortricidae

Distribution in California Counties: Alameda, Contra Costa, San Francisco

Background: This moth is originally from Australia, and has become established in New Zealand, New Caledonia, Hawaii and the British Isles. Its discovery in California is a new North American record. Currently, it has been found in an approximate 30 square mile area from Richmond to Alameda.

Description: Adults are light brown, yellowish moths with varying amounts of darker brown, with a wingspan of 16-25 mm (Fig. 1). Eggs are pale white and deposited slightly overlapping each other in groups of 20-50. Larvae are green, about 18 mm long at maturity. Pupae are brown, about 11 mm long.



Figure 1. Light brown apple moth adults.

Hosts: LBAM has been found and recorded in over 200 plants in 120 plant genera in 50 families (Appendix A). Some notable trees and ornamental shrubs are apple, pear, peach, apricot, citrus, persimmon, avocado, oak, willow, walnut, poplar, cottonwood, alder, pine and eucalyptus. Other shrub or herbaceous hosts are grape, kiwifruit, strawberry, woody berries (blackberry, blueberry, boysenberry, raspberry), rose, camellia, jasmine, chrysanthemum, clover and plantain.

Life Cycle and Damage: Development is continuous, with no true dormancy. In Australia, this moth typically has three generations per year and over-winters as a larva. Adults deposit egg masses containing 20-50 eggs on the upper leaf surface or on fruit. Larvae disperse and construct silken shelters on the underside of leaves, usually near a midrib or large vein. Older larvae roll together leaves and buds or fruit with webbing. Damage to fruit occurs as surface feeding by the larvae. Larvae will occasionally enter the fruit to feed. Pupation takes place within the larval nests.

Survey Methods: There is a pheromone lure for the males, namely 95:5 mixture of (E)-11-Tetradecenyl acetate: (E,E)-9, 11-Tetradecadienyl acetate.

Management: Mating disruption, parasitoids and various insecticides have been used to control LBAM elsewhere.

Economic Impact: The impact on production costs for LBAM hosts could top \$100 million. It was estimated for Australia that LBAM causes AU\$21.1 million annually in lost production and control costs, or about 1.3% of gross fruit value, for apples, pears, oranges and grapes (Sutherst 2000). Applying this percentage to the 2005 gross value of these same crops in California of \$5.4 billion (USDA NASS 2006), the estimated annual production costs would be \$70.2 million. This estimate does not include economic costs to the nursery industry nor to other significant host crops in California such as apricots, avocados, kiwifruit, peaches and strawberries. If the same level of costs were incurred by these as for the previous four crops, the additional costs would be \$63.1 million, based on their 2005 gross value of \$4.8 billion. Therefore, the total lost production and control costs in California could be \$133 million for all of the crops mentioned above.

Exact economic impacts on international and domestic exports are uncertain at this time. California is the nation's leader in agricultural exports and in 2003 shipped more than \$7.2 billion in both food and agricultural commodities around the world (CASS 2004). Some countries have specific regulations against this pest, and many others consider it a regulated pest that would not be knowingly allowed to enter. Additional measures, such as preharvest treatments and postharvest disinfestation, would likely have to be taken to ensure that shipments to these countries are free from LBAM. In addition, LBAM is an exotic pest, i.e., it is not established in the continental United States, and therefore other states within the U.S. would likely impose restrictions on the movement of potentially infested fruits, vegetables and nursery stock. These restrictions could severely impact the domestic marketing of California agricultural products.

Environmental Impact: Establishment of this moth could cause direct environmental damage via increased pesticide use statewide by commercial and residential growers and via adverse feeding impacts on native plants. Populations of threatened and endangered plant species could be severely threatened or extirpated should this moth adapt to feeding on them.

Methods of Artificial Spread: The most significant route of artificial spread is likely to be on plants sold through nurseries and destined for commercial, ornamental and garden plantings. Other methods of spread are on green waste, fruit and conveyances.

Literature Cited

CASS. 2004. California Agricultural Statistics 2003. California Agricultural Statistics Service, Sacramento, California. 92 pp.

Sutherst, R. W. 2000. Pests and Pest Management – Impact of Climate Change. Rural Industries Research and Development Corporation. Publication No. 00/16, Project No. CSE-76A. 34 pp.

USDA NASS. 2006. California County Agricultural Commissioners' Data, 2005. United States Department of Agriculture, National Agricultural Statistics Service, California Field Office, Sacramento, California. 80 pp.

Appendix A

Host List

Abies grandis (grand fir)
Acacia spp. (acacias)
Achillea millefolium (common yarrow)
Actinidia chinensis (Chinese gooseberry)
Actinidia deliciosa (kiwifruit)
Adiantum spp. (maidenhair ferns)
Alnus glutinosa (black alder/European alder)
Amaranthus spp. (amaranths)
Aquilegia spp. (columbines)
Arbutus spp. (madrone, strawberry tree)
Arctotheca spp. (capeweeds, cape dandelion)
Arctotis stoechadifolia (African daisy)
Artemisia spp. (mugwort, sage brush, tarragon, worm wood, etc.)
Astartea spp.
Aster spp. (asters)
Baccharis spp. (coyote brush, desert broom)
Boronia spp. (boronias)
Brassica spp. (broccoli, cabbage, cress, mustard, radish, turnip, etc.)
Breynia spp. (snow bush)
Buddleia spp. (butterfly bush)
Bursaria spp. (black thorns)
Calendula spp. (calendula)
Callistemon spp. (bottle brush)
Camellia japonica (camellia)
Campsis spp. (trumpet creeper, trumpet vine)
Capsicum spp. (pepper)
Cardus nutans (musk thistle)
Cassia spp. (golden shower, pink shower, rainbow shower, gold medallion tree)
Ceanothus spp. (buck brush, wild lilac)
Centranthus spp. (fox's brush/heliotrope/valerian)
Chenopodium album (fat-hen)
Choisya spp. (Mexican orange)
Chrysanthemum spp. (chrysanthemums)
Chrysanthemum x morifolium (mums)
Cirsium arvense (Canada thistle)
Cirsium vulgare (bull thistle)
Citrus spp. (citrus)
Clematis spp. (clematis, virgin's bower, lather flower, vase vine)
Clerodendron spp. (bleeding heart vine, bowers, tubeflower, Turk's turban)
Conyza bilbaoana (a fleabane)
Correa spp. ((Australian fuchsia)
Cotoneaster spp. (cotoneaster)
Crataegus spp. (hawthorn)
Crocasmia spp. (montbretia)
Cupressus sp. ((cypress)
Cydonia spp. (quince)
Cytisus scoparius (Scotch broom)
Dahlia spp. (dahlia)
Datura spp. (angel's trumpet, Jimson weed, thorn apple)

Daucus spp. (carrot, Queen Anne's lace)
Dodonaea spp. ((hop bush, hopseed bush)
Diospyros spp. (persimmon)
Erica lustranica (Spanish heath)
Eriobotrya spp. (loquat)
Eriostemon spp. (wax flower)
Escallonia spp. (escallonias)
Eucalyptus spp. (eucalyptus, gum trees)
Euonymus spp. (euonymus)
Feijoa sellowiana (feijoa, pineapple guava)
Forsythia spp. (forsythias)
Fortunella spp. (kumquats)
Fragaria spp. (strawberry)
Gelsemium spp. (Carolina jessamine)
Genista spp. (brooms)
Gerbera spp. (Transvaal daisy)
Grevillea spp. (hummingbird bush, grevilleas)
Hardenbergia spp. (lilac vine)
Hebe spp. (hebe)
Hedera spp. (ivy)
Helianthus tuberosus (Jerusalem artichoke)
Helichrysum spp. (curry plant, licorice plant, straw flower)
Humulus lupulus (hops)
Hypericum androsaemum (sweet-amber)
Hypericum calycinum (Aaron's beard)
Hypericum humifusum (trailing St. John's wort)
Hypericum perforatum (St John's wort)
Jasminum spp. (jasmine)
Juglans spp. (California black walnut, butternut)
Lathyrus spp. (sweet pea)
Lavendula spp. (lavenders)
Leptospermum spp. (tea trees)
Leucodendron spp. (silver tree)
Ligustrum spp. (privet)
Linum spp. (flax)
Litchi chinensis (litchi)
Lonicera spp. (honeysuckles)
Lupinus spp. (lupines)
Lycopersicum spp. (tomatoes)
Macadamia spp. (macadamia)
Malus spp. (apple)
Mangifera spp. (mango)
Medicago sativa (alfalfa)
Melaleuca spp. (honey myrtle, bottlebrush)
Mentha spp. (mint)
Mesembryanthemum spp. (ice plant)
Michelia spp. (michelia)
Monotoca spp. (broomheaths)
Myoporum spp. (myoporum)
Oxalis spp. (lady's sorrel, redwood sorrel, wood sorrel)
Parthenocissus spp. (woodbine, Virginia creeper)
Passiflora edulis (passionfruit)

Passiflora mollissima (banana passionflower or passionfruit or poka)
Pelargonium spp. (florist's geraniums)
Persea americana (avocado)
Persoonia spp.
Petroselinum spp. (parsley)
Philadelphus spp. (mock orange)
Photinia spp. (photinia)
Picea spp. (spruce)
Pieris japonica (Japanese pieris or andromeda)
Pinus spp. (pines)
Pittosporum spp. (pittosporums)
Plantago lanceolata (narrowleaf plantain)
Plantago major (common plantain)
Platysace spp. (native parsnip)
Polygala spp. (milkworts)
Polygonum spp. (fleece flower, knotweed, smartweed)
Populus spp. (cottonwood, poplar)
Prunus armeniaca (apricot)
Prunus persica (peach)
Pseudotsuga japonica (Japanese Douglas-fir)
Pseudotsuga menziesii (Douglas-fir)
Pteris spp. (brake, dish fern, table fern)
Pulcaria spp.
Pyllanthus spp.
Pyracantha spp. (fire thorn)
Pyrus spp. (pear)
Quercus spp. (oak)
Ranunculus spp. (buttercups, crowfoot)
Raphanus spp. (wild radish)
Reseda spp. (mignonette)
Rhododendron spp. (rhododendron)
Ribes spp. (currant)
Rosa spp. (roses)
Rubus spp. (blackberry, boysenberry, raspberry)
Rumex acetosa (garden sorrel, spinach dock)
Rumex acetosella (common sheep sorrel)
Rumex pulcher (fiddle dock)
Rumex crispus (curled dock)
Rumex obtusifolius (broadleaf dock)
Salix spp. (willow)
Salvia spp. (sages)
Senecio spp. (dusty-miller, groundsels)
Sida spp. (Virginia mallow)
Sisymbrium spp.
Smilax spp. (greenbrier, Jacob's ladder, wild sarsaparilla)
Solanum tuberosum (potato)
Solidago canadensis (Canada goldenrod)
Sollya spp. (Australian bluebells, bluebell creeper)
Sonchus asper (spiny sowthistle)
Sonchus kirkii (shore sowthistle)
Sonchus oleraceus (common sowthistle)
Tithonia spp. (Mexican sunflower)

Trema spp.
Trifolium spp. (clover)
Triglochin spp. (arrow grass)
Ulex europaeus (gorse)
Urtica spp. (nettles)
Vaccinium sp. (blueberry)
Viburnum spp. (arrowwoods)
Vicia faba (broad bean)
Vinca spp. (periwinkles)
Vitis spp. (grape)