CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

Mediterranean Fruit Fly
FACT SHEET

SUMMARY/BACKGROUND

- The Mediterranean fruit fly (Medfly) has the widest host range of any pest fruit fly and is considered the most important agricultural pest in the world. It has been recorded infesting over 300 fruit, nuts and vegetables, making them unfit for human consumption.
- A great number of crops in California are threatened by the introduction of this pest: including apple, apricot, avocado, bell pepper, fig, grape, grapefruit, lemon, lime, melon, nectarine, orange, peach, pear, persimmon, plum, pomegranate, tangerine, tomato and walnut.
- Establishment of these flies would cause direct economic losses via damaged fruit, increased pesticide use statewide by commercial and residential growers in efforts to lessen this damage, loss of revenue due to export restrictions on fruit both domestically and internationally, and adverse impacts on native plants through the destruction of their fruit. A permanent infestation would result in estimated annual losses of $1.3 to $1.8 billion.
- The Medfly is native to Africa, but has spread to other parts of the world including southern Europe, Australia and the New World tropics.
- Throughout its history, CDFA has succeeded in eradicating every targeted fruit fly infestation detected in California and has eradicated every Medfly introduction into the state since 1975, based on data from a post-treatment monitoring protocol developed by scientific experts and accepted internationally.

LIFE CYCLE

- The life cycle of the Medfly begins when the adult female pierces the skin of fruits and vegetables and lays from one to ten eggs per fruit. The eggs hatch and develop into maggots, which feed on the fruit pulp. Decaying, infested fruit usually falls to the ground and the maggots leave the fruit and burrow into the ground to pupate. Adult Medflies emerge from the ground and mate, completing the cycle. Adults can live up to two months. The total time from egg to adult can vary from five weeks to five months, depending on temperature.

ERADICATION PROGRAM

- Protecting California's environment from invasive species is the goal, and eradication (via sterile insect technique) is the strategy.
    - Sterile Insect Technique (SIT) has been successful against pests in California, including the Medfly, Mexican fruit fly and pink bollworm moth.
    - The process involves briefly exposing the Medfly to energy similar to an X-ray that halts development of the fruit fly's reproductive system making them incapable of laying fertile eggs.
    - The Medfly Exclusion Program incubates and emerges over 350 million sterile pupae per week for aerial release in portions of Los Angeles, Orange, Riverside and San Bernardino counties. The density of release is no less than 62,500 sterile Medflies per square mile per week, using twice weekly releases of a minimum of 31,750 sterile flies per square mile.
    - The Medflies are released seven days a week by private aircraft and pilots under contract to the USDA. Releases are made along predetermined flight lines using Global Positioning System navigation.
    - The number of flies released for eradicating new introductions is quadrupled to 250,000 per square mile per week. These releases continue for two life cycles. Eradication is declared after three life cycles of no additional fly finds, which is generally eight months, but may vary from three to ten months depending on temperature.
    - Ground applications of organically-approved Spinosad may be applied to all properties within a 200-meter radius of each fly find within the eradication area. Fruit stripping will also occur on all known larval infested and adjacent properties.

MORE INFORMATION IS AVAILABLE

CDFA - www.cdfa.ca.gov/phpps/
CDFA Pest Hotline: 800-491-1899
APHIS/USDA - www.aphis.usda.gov

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