



# **MONTEREY COUNTY CROP PROTECTION PROGRAMS & ABATEMENT**

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# Crop Protection Programs

A photograph of a field of celery plants. The plants have thick, upright stalks and large, feathery green leaves. They are growing in rows in a field with dark soil.

**Celery**

A photograph of a field of lettuce plants. The plants are in various stages of growth, with some showing dark red leaves and others showing bright green leaves. They are growing in rows in a field.

**Lettuce**



# Celery (*Apium graveolens*)

**#8 Commodity in 2021 Crop Report**

**~ \$147 M crop value**

**~ 9,861 acres**

**Grown throughout county**



# Celery Mosaic Virus





# CMV Host Free Period

**Host Plants: Celery (*Apium graveolens*)**

**Pest/Disease: Western Celery Mosaic Virus**

**No Plant Period: January each year**

**Host-free District: County of Monterey**

*No host plant shall be grown above ground during the host-free period except under permit.*

(Western Celery Mosaic Host-Free Districts and Periods, Section 3610, Title 3 of the California Code of Regulations, was adopted January 9, 1983.)



# Permits

## To Grow Celery in Greenhouses during HFP

An eight-day alternate host-free period

The greenhouse is located one-half mile or more from any wild or cultivated celery growing outside of the greenhouse

During the host-free periods, freedom from weed hosts including cow parsley (*Anthriscus sylvestris*), poison hemlock (*Conium maculata*), wild celery (*Apium graveolens*), and wild parsnip (*Pastinaca sativa*) and volunteer crop plants shall be maintained within the greenhouses(s) and for a distance extending at least **200 feet** around the immediate greenhouse.

An effective pest control program targeting Aphids shall be followed during the propagation period.

During the host-free periods, celery transplants shall be sampled for freedom of Western Celery Mosaic Virus.



# Permits

## To Hold and Maintain Celery Plants during HFP

- Experimental Plot/Greenhouse (enclosed)
- Growing location is sufficiently removed from the primary Celery production area
- Additional permit conditions specific to the site



# Lettuce

**#2 & #3 Commodity in 2021 Crop Report**

**~ \$1.2 B crop value**

**~ 95,291 acres**

**Grown primarily in North and Mid County**





# Lettuce Root Aphid Host Free District





# Lombardy Poplar

**Host Plants: Lombardy Poplar Tree (*Populus nigra*)**

**Pest/Disease: Lettuce Root Aphid**

**No Plant Period: At any time**

**Host-free District: Salinas Valley & portions of  
Pajaro Valley**

*No Lombardy poplar may be grown or maintained at any time in the district except under a permit.*

(Section 3597, Title 3, California Code of Regulations)



# Lombardy Poplar Maintenance Permit

In lieu of tree removal, treatment with a pesticide registered for use on Lombardy poplar for control of lettuce root aphid shall be performed.

Chemical application(s) shall be performed only by a licensed pest control operator registered with the Agricultural Commissioner of Monterey County.

The timing of the applications(s) and the number of applications shall be in accordance with the Agricultural Commissioner's recommendations.

The Agricultural Commissioner will monitor the effectiveness of the treatment program.

All treatments to control lettuce root aphid are at the owner's expense.



# Lettuce Mosaic Virus





# Lettuce Seed Indexing

Lettuce Mosaic Virus (LMV) is a seed borne disease.

No lettuce seed may be planted in the County of Monterey unless it has been “indexed” or tested and found to have no more than zero virus in 30,000 seeds.

(Monterey County Code of Ordinances Chapter 10.48.020 (A), Title 10)



# Permit to Plant Unindexed Seed

Experimental varieties

Occupying 3,000 linear feet of 40 inch bed or less

Date of planting, a map of each trial location, and approximate harvest date upon planting will be provided

Plantings of unindexed lettuce seed shall be kept free from aphids.

Plants with symptoms of Lettuce Mosaic Virus shall be rogued.

Trial plants left in the field shall be promptly destroyed upon completion of trial.



# LMV Host Free Period

**Host Plants: Lettuce (*Lactuca* spp.), Endive & Escarole  
(*Chichorium endive*)**

**Pest/Disease: Lettuce Mosaic Virus**

**No Plant Period: December 7-21 each year**

**Host-free District: County of Monterey**

*No host plant shall be grown above ground during the host-free period except under permit.*

(Section 3611, Title 3 of the California Code of Regulations)



# Permits

## To Grow Lettuce Transplants in Greenhouses during HFP

All lettuce seed used for propagation shall be indexed as per County Ordinance 1053.

Greenhouse is located **one-half mile** or more from any wild or cultivated lettuce growing outside of the greenhouse.

During the host-free period, freedom from weed hosts and volunteer crop plants shall be maintained within the greenhouses(s) and for a distance extending at least **200 feet** around the immediate greenhouse.

An adequate pest control program shall be followed during the host-free period.

Immediately preceding the host-free period, inspection of lettuce transplants will be made and samples taken for analysis.





# Permits

## To Hold & Maintain Lettuce Mosaic Host Plants during HFP

- Experimental Plot/Greenhouse (enclosed)
- Growing location is sufficiently removed from the primary Lettuce production area
- Additional permit conditions specific to the site



# Impatiens Necrotic Spot Virus



# Western flower thrips, *Frankliniella occidentalis*





# Infection Pattern

Weedy areas serve as disease reservoirs of INSV and habitat for Western Flower Thrips.

# Top 10 weed hosts for INSV



Little mallow 'Malva'



Lambsquarter



Annual Sowthistle



Hairy Fleabane



Shepherd's purse



Nettleleaf Goosefoot



Burning Nettle



Marestail



Field Bindweed



Purslane

*Pictures courtesy  
of Richard Smith  
and UC ANR*



# INSV & Weed Management





# Best Management Practices

Host Plant Control

Target Winter Weeds

Timely discing of harvested fields

Effective Thrips Control

Variety Selection?



# Little Mallow (*Malva parviflora*)







# Mare's Tail (*Conyza canadensis*)



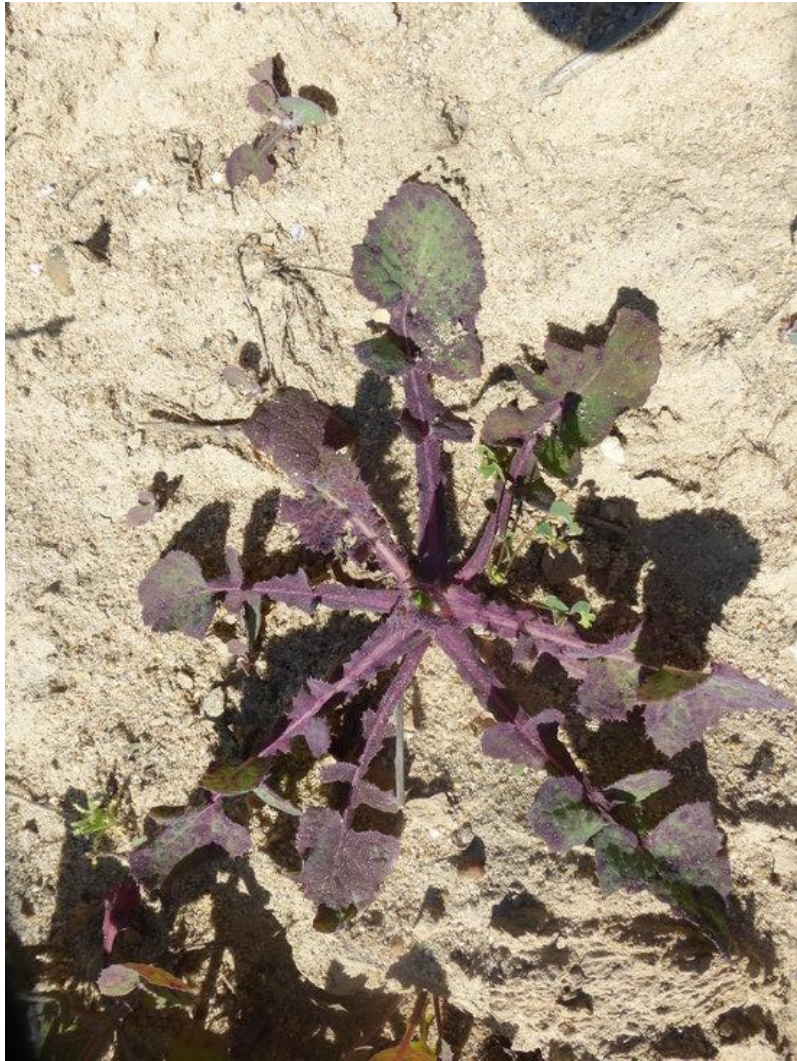


# Hairy Fleabane (*Conyza bonariensis*)



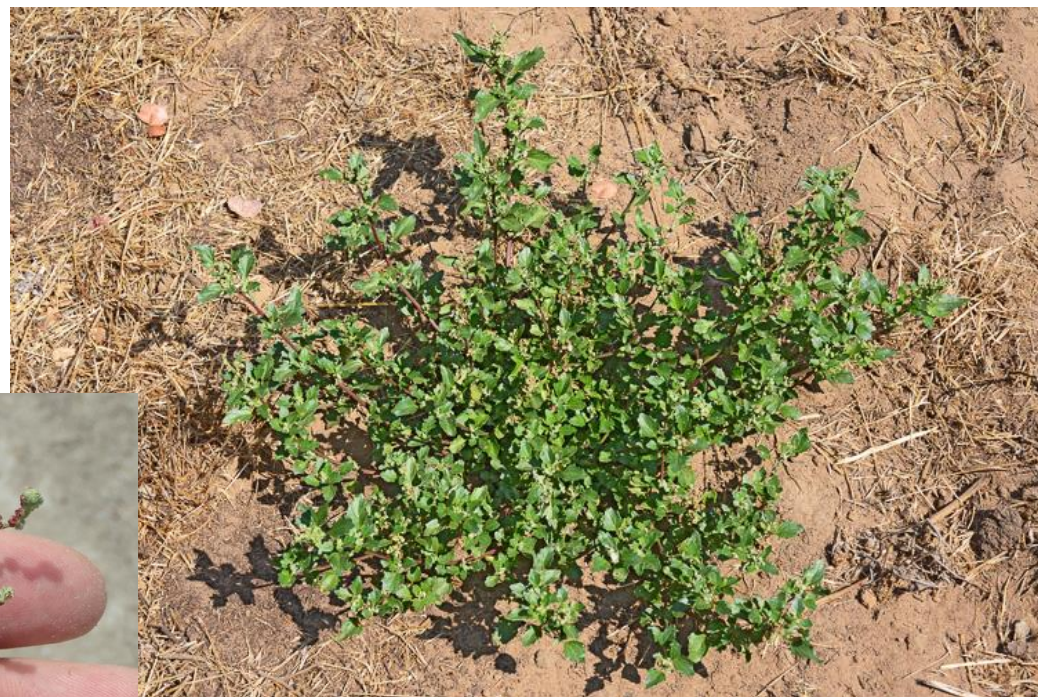


# Annual Sowthistle (*Sonchus oleraceus*)





# Nettleleaf Goosefoot (*Chenopodium murale*)



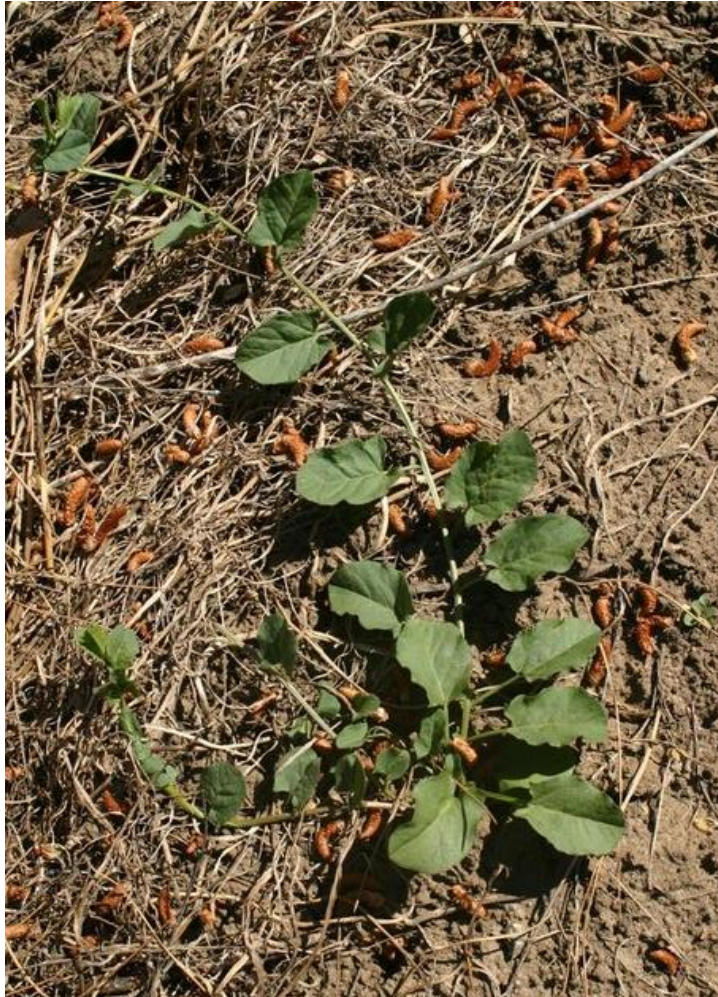


# Common Lambsquarter (*Chenopodium album*)





# Field Bindweed (*Convolvulus arvensis*)





# Shepherd's Purse (*Capsella bursa-pastoris*)





# Common Purslane (*Portulaca oleracea*)







# Burning Nettle (*Urtica urens*)





# Weed Abatement

The California Food and Agriculture Code [FAC] gives legal authority to Agricultural Commissioners to take immediate action to abate infested or infected property/plants on abandoned or neglected property when:

1. The infestation creates a public nuisance
2. The nuisance constitutes an immediate hazard to adjoining or nearby property
3. Great or irreparable injury would result from delay

[FAC sec. 2271, 5763, 5401-5494, 5561-5645, 5781-5786]



# FAC sec. 5551: Nuisance Definition

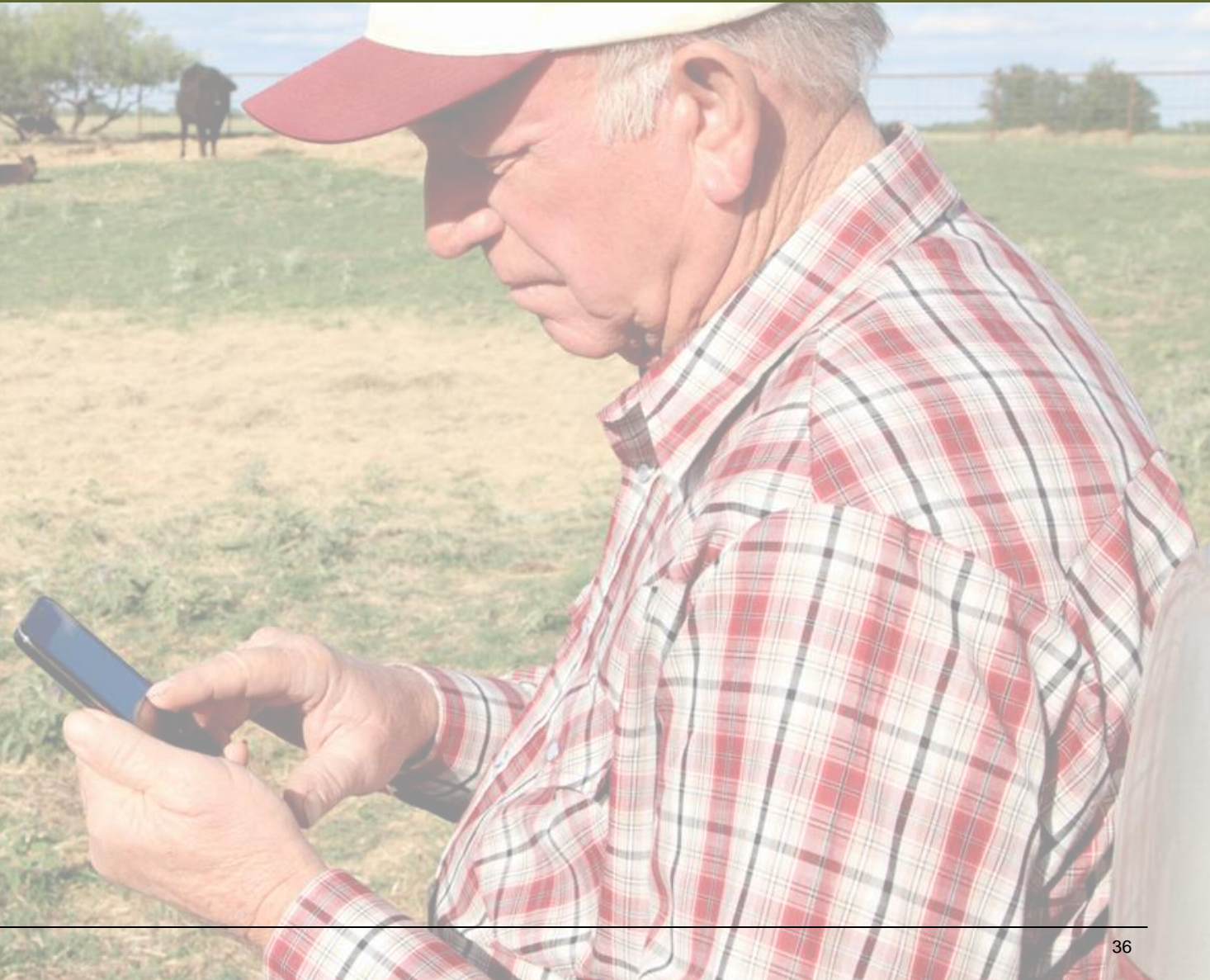
Any neglected or abandoned plant or crop is a public nuisance in any of the following circumstances:

- (a) It is a menace to the agriculture of the county, district, or vicinity because of the existence of any pest, in or on it.
- (b) It is a menace to the agriculture of the county, district, or vicinity because of the existence of any other condition than the condition described in subdivision (a).
- (c) It is a host plant of, or provides a favorable or likely harbor for, any pest.



# Weed Abatement Investigation

- Generally initiated by a complaint call
- Inspector collects information about concern, location, complainant contact information, and responsible party





# Weed Abatement Investigation

- Inspector conducts a site visit to verify the problem
- If a nuisance or hazard is confirmed, a written notice is issued to the responsible party directing them to eradicate, control or destroy the pest



# Weed Abatement Investigation

- If the Ag Commissioner deems the nuisance an immediate hazard or the responsible party is not responsive, they may intervene and abate the nuisance immediately themselves or by a contractor
- The cost of abatement activities will be paid by the responsible party
- Technical assistance is available to determine effective management strategy



# INSV Abatement

- Hazard reduction strategy, goal is not pathogen or vector eradication
- Reported site must be established as a nuisance
  - Top 10 INSV weed hosts present
  - Western Flower Thrips are present
  - INSV is present (detected by lab analysis)





# INSV Specific Abatement Investigations

- Responsible parties have 30 Days to abate the nuisance
- If abatement is not started within 30 days the Board of Supervisors will conduct a hearing to determine whether to levy a special assessment pursuant to Government Code Section 25845 cover the cost of such abatement.
- The special assessment may be collected at the same time and in the same manner as ordinary county taxes and subject to the same penalties, procedure, and sale in case of delinquency.





The BEST thing we can do to mitigate INSV risk to Lettuce is take advantage of the winter season to control alternate weed hosts and reduce the reservoir of INSV and its vector, Western Flower Thrips.



# Critical Control Window





# Questions?



Need help? Have a question? Call us!

**Pest Management (831)759-7332**