

## Carrots XXVIII – 1

### Leafhoppers/Aster Yellows

*Whitney S. Cranshaw and Michael J. Brewer*



*leafhopper adult.*

#### **Identification (and life cycle/seasonal history)**

Several leafhoppers, primarily aster leafhopper, transmit aster yellow disease. Leafhoppers do not overwinter well in our region. When occasional late season damage and disease transmission occurs, it is the result of northerly migrations of adults into our region, and the generation that is produced from this migration. During heavy flights of infected leafhoppers, disease transmission can be high. Eggs are laid in stems. Both immatures and adults suck plantsap from leaves and stems. They are generally small (less than five millimeters ( $\frac{1}{4}$  inch) in length. The wings are held arched over the back.

#### **Plant Response and Damage**

Leafhopper immatures and adults suck the sap from their host plants. During feeding, infected insects, principally aster leafhopper, can transmit aster yellows disease. Transmission of this disease to carrot results in hairy roots and leaves that are bunchy and miscolored. Infection typically occurs in late July through August.

#### **Cultural Control**

As a supplement to other control strategies, removing weed hosts along field edges can reduce the number of leafhoppers in the area. Also, carrot cultivars vary in their susceptibility to the disease.

#### **Biological Control**

Winter mortality is a principal mortality factor of leafhoppers in our region.

#### **Chemical Control**

Leafhopper control can reduce the incidence of aster yellows. During heavy flights of infective leafhoppers, repeat applications at short intervals may be needed. Insecticidal coverage can be terminated two weeks prior to harvest since symptoms of the disease require 10 to 14 days to develop on carrots.

*Product list for leafhoppers:*

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Insecticide	Product per acre	Preharvest Interval, remarks
Lannate 90S <sup>R</sup> Lannate L <sup>R</sup>	0.5-1 lb 2-4 Pt	(1 day) Carbamate insecticide (methomyl). 48 hour reentry interval proposed. Not registered for chemigation.
Asana XL <sup>R</sup>	5.8-9.6 fl oz	(7 days) Proposed 24 hour reentry interval. Has given superior control of aster yellows in University trials. Pyrethroid insecticide (esfenvalerate). Ground application only. Some rotation restrictions with root crops.
Baythroid 2 <sup>R,1</sup>	1.6-2.8 fl oz	0 days. Pyrethroid insecticide. Maximum 5 applications per season, with minimum 7 day intervals between treatments.
Thiodan 50W, Thiodan 3EC <sup>1,2</sup>	1 - 2 lb	7 days. Do not use tops for food or feed. One application per year.
<sup>R</sup> Restricted use pesticide. <sup>1</sup> Labeled for chemigation <sup>2</sup> Generic active ingredient, several formulations.		

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Categories: Carrot, Leafhoppers, Aster yellows, Insects

Date: 08/19/2002