

# Crop Profile for Alfalfa in Vermont

Prepared: August, 2000

## General Production Information

### Production Facts:

Vermont ranks twenty-second in the nation of 23,673,000 alfalfa production acres, and contributes too less than 1% of the total. In 1997, 40,000 acres of alfalfa were grown and harvested as forage in Vermont . The total cash crop value was \$18,900,000 while production cost for the year was \$2,052,000.

### Production Regions:

NW St. Albans ( Franklin, Chittenden and Lamoille Counties )

NE St. Johnsbury ( Orleans, Essex, and Caledonia Counties )

Central Barre ( Washington and Orange Counties )

SE Brattleboro ( Windham and Bennington Counties )

SW Rutland ( Rutland, Addison and Windsor Counties )

### Cultural Practices:

Four soil types exist: I Spodosols the most dominant accounts for approximately 80% of the Vermont earth and is found in the states center running north to south from boarder to boarder. II Inceptisols are found on both the eastern and western state borders and also run from north to south. III Alfisols are found in the Champlain Valley along the lake. And IV Entisols make up the earth in Fraklin County the states northwest corner.

Planting timings vary greatly within the state depending on soil type, elevation and the spring weather. Planting generally occurs in either May or September. The two major components of land preparation in Vermont are Nutrient Management and Crop Rotation. A typical field rotation would be 2 3 years in corn followed by 3 5 years in alfalfa, however today through use of chemical fertilizers and pesticides management practices vary greatly. Nutrient concerns encompass supplements and manure spreading for balanced soil fertility.

## Diseases

### Anthracnos

- Type of Pest: Fungus
- Frequency of Occurrence: Sporadic
- Damage Caused: Lower stem rot. Girdle shoot rot. Yellowing of leaves. Stunted growth. Reduced dry matter yield. Minimum nutrient uptake. Lack of translocation. Premature plant death.
- % Acres Affected: 70%
- Pest Life Cycles: Fungal
- Timing of Control: Mid July - Mid September
- Yield Losses: 0 - 10%
- Regional Differences:
- Cultural Control Practices: Sound Crop Management
- Biological Control Practices: Resistant Hybrids
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls: *No Disease Control By Chemical Methods In Vermont With The Exception Of Seed Treatments.*

### Fusarium

- Type of Pest: Fungus
- Frequency of Occurrence: Yearly
- Damage Caused: Root and crown rot. Yellowing of leaves. Stunted growth. Reduced dry matter yeild. Minimum nutrient uptake. Lack of translocation. Premature plant death.
- % Acres Affected: 100%
- Pest Life Cycles: Fungal
- Timing of Control: May - September
- Yield Losses:50%
- Regional Differences:
- Cultural Control Practices: Sound Crop Management
- Biological Control Practices: Resistant Hybrids
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls: *No Disease Control By Chemical Methods In Vermont With The Exception Of Seed Treatments*

### Phytophthora

- Type of Pest: Fungus
- Frequency of Occurrence: Yearly
- Damage Caused: Root rot. Yellowing of leaves. Stunted growth. Reduced dry matter yeild. Minimum nutrient uptake. Lack of translocation. Premature plant death.
- % Acres Affected: 80%
- Pest Life Cycles: Fungal
- Timing of Control: End of April - June
- Yield Losses: 0 - 25%
- Regional Differences:
- Cultural Control Practices: Sound Crop Management
- Biological Control Practices: Resistant Hybrids
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls: *No Disease Control By Chemical Methods In Vermont With The Exception Of Seed Treatments*

### **Verticillium wilt**

- Type of Pest: Fungus
- Frequency of Occurrence: Sporadic
- Damage Caused: Crown rot. Yellowing of leaves. Stunted growth. Reduced dry matter yield. Minimum nutrient uptake. Lack of translocation. Premature plant death.
- % Acres Affected: <5%
- Pest Life Cycles: Fungal
- Timing of Control: May - September
- Yield Losses: 0 - 50%
- Regional Differences:
- Cultural Control Practices: Sound Crop Management
- Biological Control Practices: Resistant Hybrids
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls: *No Disease Control By Chemical Methods In Vermont With The Exception Of Seed Treatments*

### **Bacterial wilt**

- Type of Pest: Bacterial
- Frequency of Occurrence: Yearly\_
- Damage Caused: Yellowing of leaves. Stunted growth. Leaf molting and cupping. Browning of tap root.
- % Acres Affected: 50\_%
- Pest Life Cycles: Bacterial\_

- Timing of Control: Mid May - Mid June\_
- Yield Losses: 0 -10\_
- Regional Differences:
- Cultural Control Practices: Sound Crop Management\_
- Biological Control Practices: Resistant Hybrids\_
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls: *No Disease Control By Chemical Methods In Vermont With The Exception Of Seed Treatments.*

## Insect Pests

### Potato leafhopper

- Type of Pest: Insect
- Frequency of Occurrence: Biannual
- Damage Caused: Removes plant sap from the underside of leaves and stems, leaving behind a salivatory secretion causing yellowing or redding of leaves. Reduces photosynthesis, productivity and ultimately yeilds. May kill young seedlings.
- % Acres Affected: 100%
- Pest Life Cycles: Migrates north on southern storm fronts. Adults are 1/8" in length, green, triangular winged and have a redish crescent at the base of the neck. Eggs are implanted in the plants veins with an ovipositor at a rate of 3 per day over 6-8 weeks. Nymphs hatch in 9 days.
- Timing of Control: Mid June - August
- Yield Losses: <1%
- Regional Differences:
- Cultural Control Practices: None
- Biological Control Practices: None
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls:

Pesticide	% Trt.	Type of Appl.	Typical Rates	Timing	# of Appl.	PHI	REI
<i>Carbofuran 44%</i> <i>(Furadan)</i>		Flowable Foliar	0.125 lbs./ A	Insects	1/cut	14	

<i>Chlorpyrifos 44.9%</i> <i>(Lorsban)</i>		Emulsion Foliar	0.5 lbs./ A	Insects	1/cut	14	
<i>Methylparathion 20.9%</i> <i>(Penncap)</i>		Emulsion Foliar	0.5 lbs./ A	Insects	1/cut	0	
<i>Permethrin 25.6%</i> <i>(Ambush)</i>		Wetable Foliar	0.1 lbs./ A	Insects	1/cut	0	
<i>Permethrin 38.4%</i> <i>(Pounce)</i>		Emulsion C Foliar	0.15 - 0.2 lbs./ A	Insects	1/cut	14	
<i>Cyfluthrin 25%</i> <i>(Baythroid)</i>		Dust Foliar	0.0125 - 0.025 lbs./ A	Insects	1/ cut 11.2 oz./ A / season	7	

### Snout beetle

- Type of Pest: Insect
- Frequency of Occurrence: NONE
- Damage Caused: Chew and consume leaf tissue.
- % Acres Affected: 0%
- Pest Life Cycles: Adult beetles are females only, upto 0.5" long and molten gray with humpbacks. They may be relocated by farm equipment or water and are carried in hay and gravel.
- Timing of Control: April - May; End August - Start September
- Yield Losses: None
- Regional Differences:
- Cultural Control Practices: 3 year rotation with row crops.
- Biological Control Practices: None
- Post-Harvest Control Practices:
- Other Issues: Uncharacteristic amounts of winter kill should be investigated.

### Weevil

- Type of Pest: Insect
- Frequency of Occurrence: Yearly
- Damage Caused: Chew and consume leaf tissue, leaves a grayish white frosted appearance. Check terminal buds and

upper foliage for shot holes.

- % Acres Affected: 100%
- Pest Life Cycles: Overwinters in wooded areas, fence rows and unkept fields. Adults are 3/8" long, green with white strip down the back and a black head. Eggs are laid in plant stems in early spring. Larva cocoon on plants and adults emerge in 10 days.
- Timing of Control: Larvae Mid May - Mid June; Adult April - Mid May then June
- Yield Losses: <1%
- Regional Differences:
- Cultural Control Practices: None
- Biological Control Practices: None
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls:

Pesticide	% Trt.	Type of Appl.	Typical Rates	Timing	# of Appl.	PHI	REI
<i>Chloropyrifos 44.9%</i> <i>(Lorsban)</i>		Emulsion Foliar	0.5 lbs./ A	Insects	1/cut	14	
<i>Methylparathion 20.9%</i> <i>(Penncap)</i>		Emulsion Foliar	0.5 lbs./ A	Insects	1/cut	0	
<i>Permethrin 25.6%</i> <i>(Ambush)</i>		Wetable Foliar	0.1-0.2 lbs./ A	Insects	1/ cut	14 if >0.1lbs./A	
<i>Permethrin 38.4%</i> <i>(Pounce)</i>		Emulsion C Foliar	0.1-0.2 lbs./ A	Insects	1/cut	14 if >0.1lbs./A	
<i>Cyfluthrin 25%</i> <i>(Baythroid)</i>		Dust Foliar	0.0125 - 0.025 lbs./ A	Insects	1/ cut 11.2 oz./ A / season	7	
<i>Dimethoate 57%</i> <i>(Dimethoate)</i>		Liquid Foliar	0.5 - 0.25 lbs./ A	Insects	1/cut	10	

## Weeds

## Annual Grasses, Chickweed, Bluegrass

- Type of Pest: Weed
- Frequency of Occurrence: Yearly
- Damage Caused: Competition with desired forage
- % Acres Affected: 100%
- Pest Life Cycles: Seeds and on occasion rootstock.
- Timing of Control: Mid April - Mid May; September
- Yield Losses: up to 30%
- Regional Differences:
- Cultural Control Practices: Sound Crop Management
- Biological Control Practices: None
- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls:

Pesticide	% Trt.	Type of Appl.	Typical Rates	Timing	# of Appl.	PHI	REI
<i>Paraquat Dichloride</i> 37% ( <i>Graoxone</i> )		Liquid Foliar	3/2 - 2 pts./ A	Dormant Alfalfa	1	60	
<i>Paraquat Dichloride</i> 37% ( <i>Graoxone</i> )		Liquid Foliar	12.8 fl.oz.	Up to 5 days following a cut	1-4	30	

## Broadleaf Annual, Yellowrocket, Dandelion, Bluegrass

- Type of Pest: Weed
- Frequency of Occurrence: Yearly
- Damage Caused: Competition with desired forage
- % Acres Affected: 100%
- Pest Life Cycles: Seeds
- Timing of Control: Mid April - Mid May; September
- Yield Losses: up to 30%
- Regional Differences:
- Cultural Control Practices: Sound Crop Management
- Biological Control Practices: None

- Post-Harvest Control Practices:
- Other Issues:
- Chemical Controls:

<b>Pesticide</b>	<b>% Trt.</b>	<b>Type of Appl.</b>	<b>Typical Rates</b>	<b>Timing</b>	<b># of Appl.</b>	<b>PHI</b>	<b>REI</b>
<i>Hexazinone 25% (Velpar)</i>		Liquid Foliar	2 - 6 pts./ A	Dormant Alfalfa	1	30	
<i>Metribuzin 75% (Lexone)</i>		Dry Flow Foliar	2/3 - 4/3 lbs./ A	Dormant Alfalfa	1	28	
<i>Metribuzin 75% (Sencor)</i>		Dry Flow Foliar	2/3 - 4/3 lbs./ A	Dormnat Alfalfa	1	28	

Questions or comments about site content should be directed to [alan.gotlieb@uvm.edu](mailto:alan.gotlieb@uvm.edu).