The MAJOR Problems

- Fusarium
- Clover root curculio
- Verticillium
- Phytophthora
- Aphanomyces
- Winter hardiness
- Harvest frequency
- Potato leaf hopper

ALFALFA LONGEVITY
AN IPM STRATEGY
ALAN GOTLIEB
University of Vermont

<table>
<thead>
<tr>
<th>SMOOTH FIELD</th>
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<tr>
<td>NOTE ROUGHNESS HERE</td>
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<td>THINNING FIELD</td>
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ALFALFA CLOVER ROOT CURCULIO FUSARIUM COMPLEX
CLOVER ROOT CURCULIO

SITONA HISPIDULUS

SITONA HISPIDULUS LIFE CYCLE VERMONT
- Eggs hatch in early May
- First instar must find root nodule
- Late June instars cause defoliation
- Pupates in early July
- Adults emerge in early August
- Eggs deposited September - November
- Overwinters as adult, egg, larvae
- Adults lay eggs again in April and May
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Verticillium Wilt
**PHYTOPHTHORA ROOT ROT**

**SPREAD**
1. SEED DEBRIS
2. CUTTER BLADES
3. TIRES
4. HAY

**CONTROL**
1. RESISTANCE
2. CERTIFIED SEED
3. SEED TREAT — THIRAM
4. CUT DISEASED FIELDS LAST
5. CLEAN EQUIPMENT
6. ENSILE DISEASED ALFALFA
7. ROTATE — CORN 3 YEARS
The MAJOR Problems

- Fusarium
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Factors That Increase the Risks of Winter Injury in Alfalfa

- Potato Leafhopper damage
STAND LONGEVITY VS HARVEST FREQUENCY

The MAJOR Problems
- Fusarium
- Clover root curculio
- Verticillium
- Phytophthora
- Aphanomyces
- Winter hardiness
- Harvest frequency

CONTROL
- ROTATE TWO YEARS MINIMUM
- USE RESISTANT VAR (Fusarium, Verticillium, Phytophthora, Aphanomyces)
- USE HARDINESS SUITABLE FOR AREA (2 & 3 more northern)
- USE 3 CUT HARVEST SYSTEM
- Use leaf hopper resistant varieties