

Insect Issues in Hay Crops

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Outline

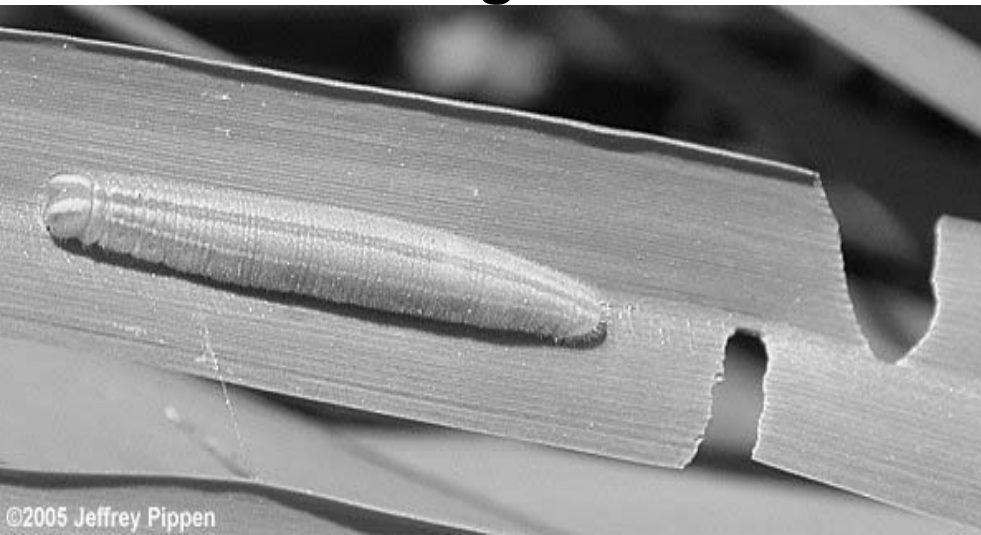
- **Forage Grass Insect Pests**
- **Alfalfa Pests**
- **Minor Use Program**

Forage Grasses

- **European skipper**
- **Cutworms**
- **Silvertop 'insects'**

European skipper

- Timothy
- Damage
 - Leaf margins
 - Clipping flag leaf
 - Defoliation
 - Feeding on heads



European Skipper

Eggs on stems in winter

- **Larvae hatch spring**
- **Feed until late June**
- **Adults present July**
(damage already done)



Cutworms

- **Timing of damage = crop emergence**
- **One generation per year**
- **Adults late summer, lay eggs, do not feed**
- **Larvae feed in evening/morning**
 - Usually not visible
 - Have to turn sod to find
- **Patches in field**

Cutworms



Silvertop

- **Condition where head forms but is empty**
- **Seedhead easily pulled out of leaf sheath**



Silvertop

- **Crested Wheatgrass**
- **Timothy**
- **Kentucky Bluegrass**
- **Fescues**
- **Bromes**

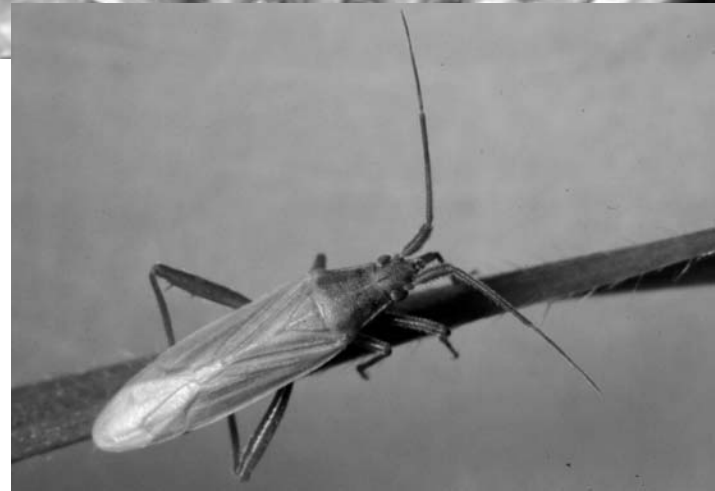
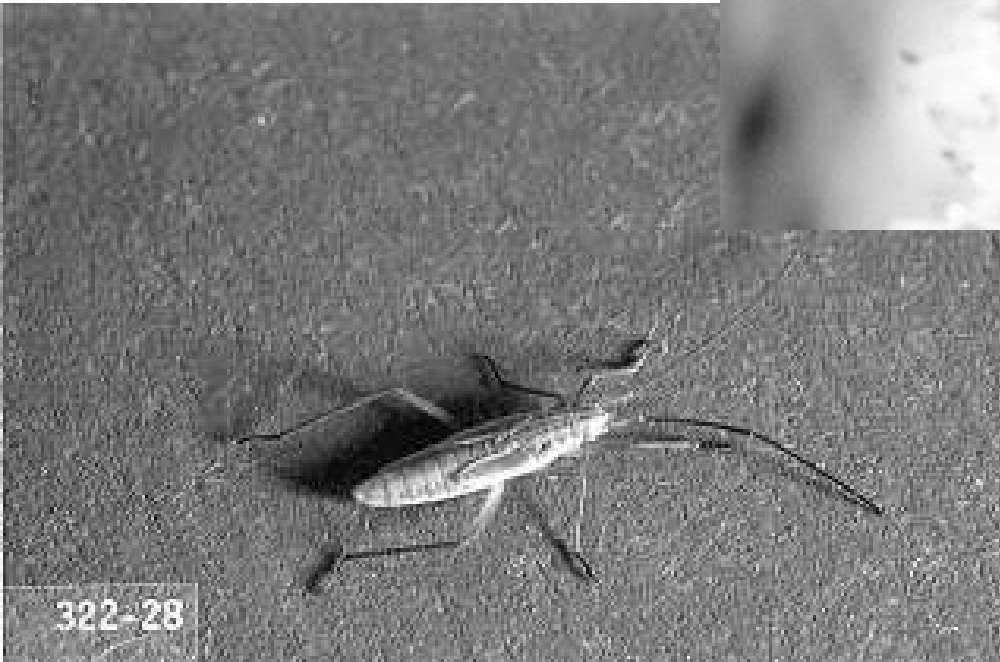
Silvertop Symptoms



Silvertop 'insects'

- **Grass plant bugs (black/green)**
- **Thrips**
- **Mites**
- **'Fusarium' fungus**

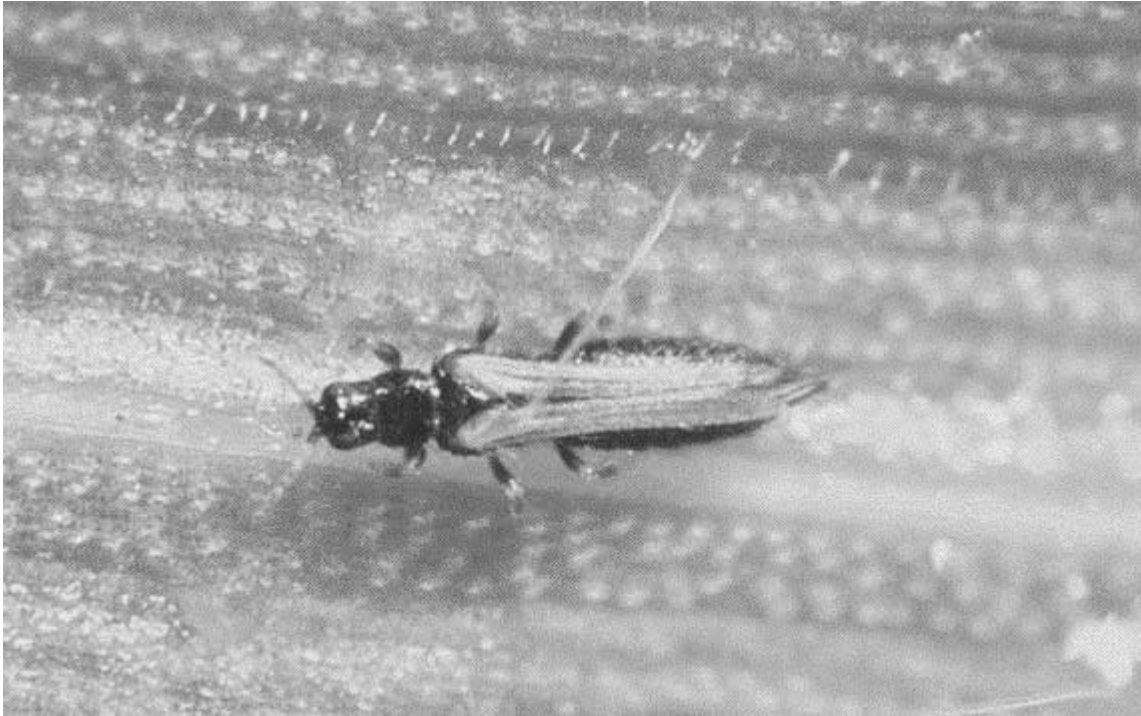
Grass plant bugs



Grass Plant Bugs



Grass Thrips



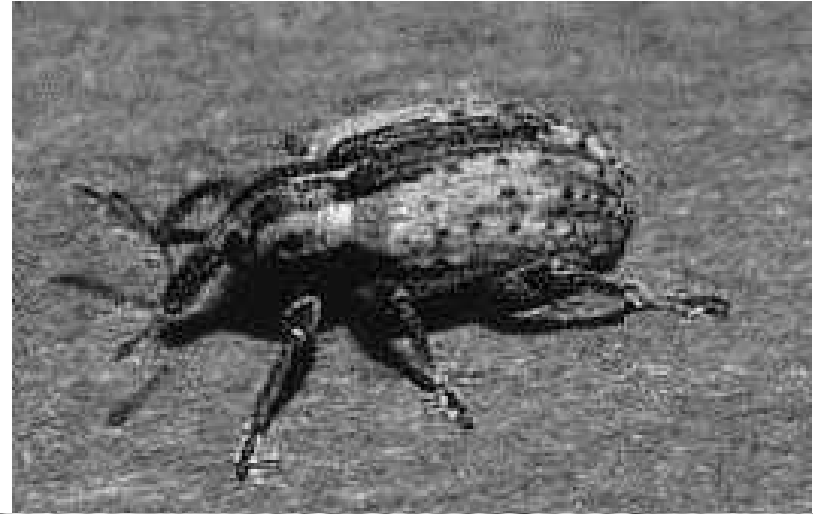
Mites



Alfalfa

- **Alfalfa weevil**
- **Potato leafhopper**
- **Alfalfa blotch leafminer**
- **Blister beetles**
- **Tarnished plant bug/Lygus bug**
- **Alfalfa Plant Bugs**
- **Variiegated Cutworm**

Alfalfa weevil



Life Cycle

- **Overwinter as adults**
- **Eggs laid in fields**
- **Larvae feed and cause most damage**
- **Damage most visible typically right before 1st cut**
- **Economic Thresholds:**
 - 30 cm high – 1 larva/stem
 - 40 cm high – 2 larva/stem
 - 3 larva/stem – immediate action

Alfalfa weevil damage



Control

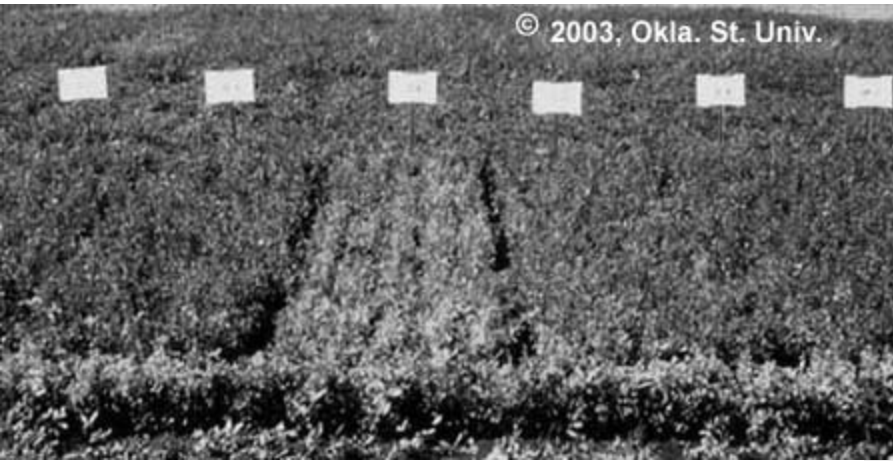
- **Cut**
- **Insecticide control rarely done in hay**

Potato leafhopper

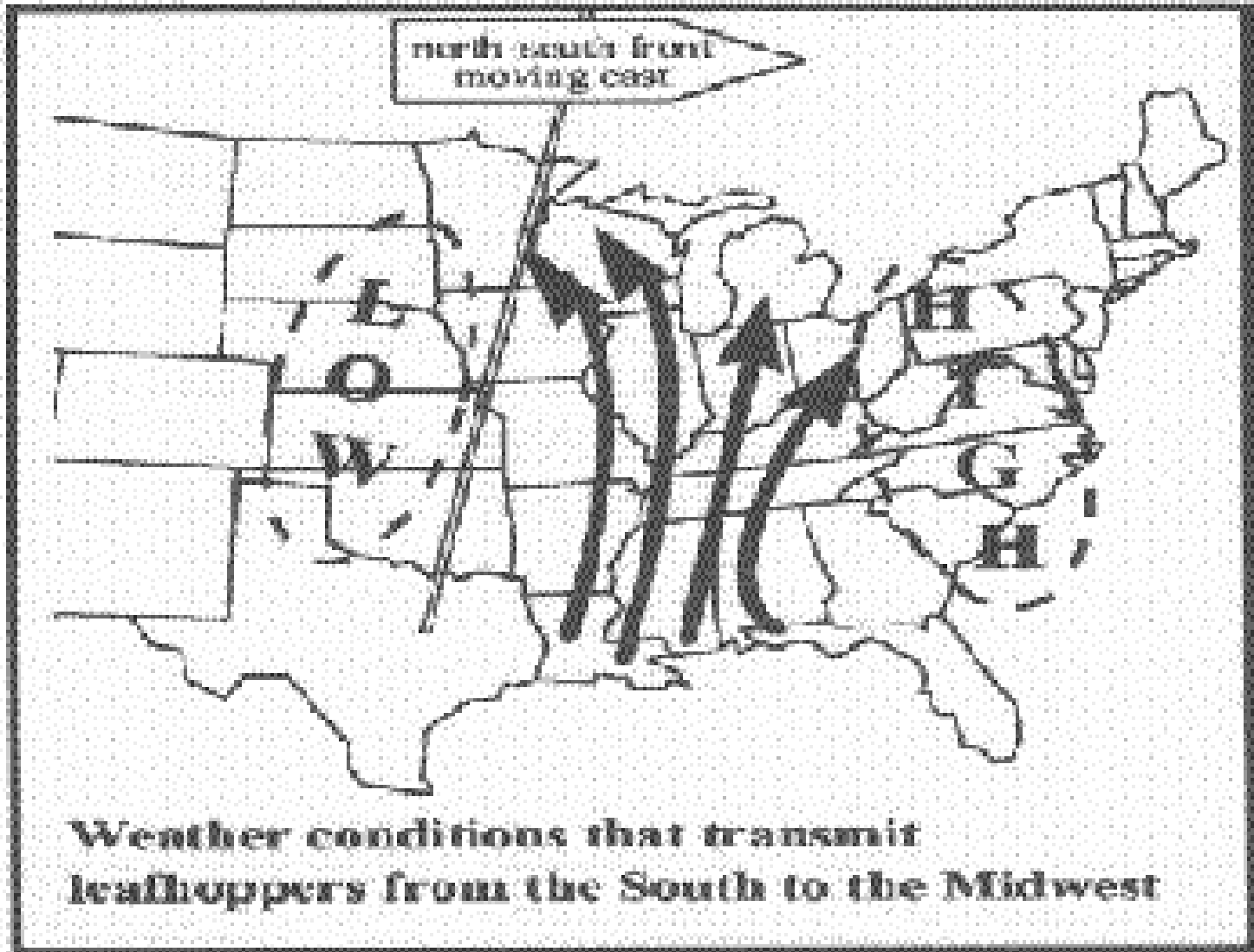


Potato leafhopper adult (R) and nymphs
[Picture by Michigan State University]

Potato leafhopper damage



Potato leafhopper migration



Potato Leafhopper

- **Economic Threshold dependent on stem height:**

– Stem Height	Number of PLHs per Sweep
– 9 cm (3.5 in.)	0.2 adults
– 15 cm (6 in.)	0.5 adults
– 25 cm (10 in.)	1.0 adults or nymph
– 36 cm (14 in.)	2.0 adults or nymph

Alfalfa blotch leafminer



Alfalfa blotch leafminer

Life cycle

- **Overwinters as pupa**
- **Adult emerges late May**
- **Larvae develop within leaf leaving tunnels**
- **Second generation July**
- **Third generation possible August**

- **Cause decrease in quality**
- **Little yield loss**
- **Economic Threshold = 40% leaves/pinholes**

Blister Beetles



Blister Beetles

- **Generally not a problem**
- **Also like canola, Caragana**
- **Timing usually around mid-July**
- **High numbers related to high grasshopper populations**
- **Do not cause feeding damage to alfalfa**
- **Avoid harvest when present**

Tarnished plant bug/Lygus bug

- **Plant juice sucker**
- **Multiple gen/year**
- **Overwinters adult**
- **Burning ineffective**
- **Usually not problem for hay**



Alfalfa Plant Bug

- **Similar to Lygus**
- **Overwinters as egg in stem**
- **Burning can work**
- **One generation/year**



Variegated Cutworm

- Can occasionally cause serious defoliation in alfalfa
- August-September larvae large in MB



General Insect Pests

- **Grasshoppers**
 - Defoliators
 - Abundance fluctuates
 - Depends on combination fall/spring weather
- **Aphids**
 - Rarely an issue
- **Other leafhoppers**

Minor Use Pesticide Program

- **PMRA/AAFC joint program**
- **Intended for smaller crops without acreage to justify company interest**
- **Limited control options in forages**
 - e.g. European skipper in Timothy – only Bt
- **Minor Use coordinator to start in Carman MAFRI office in 2007**