

Adult



Galls



Severe Damage

Balsam Gall Midge

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Paradiplosis, the Gall-Maker

Adults about 1/8 inches long

Dasineura, the Good Midge

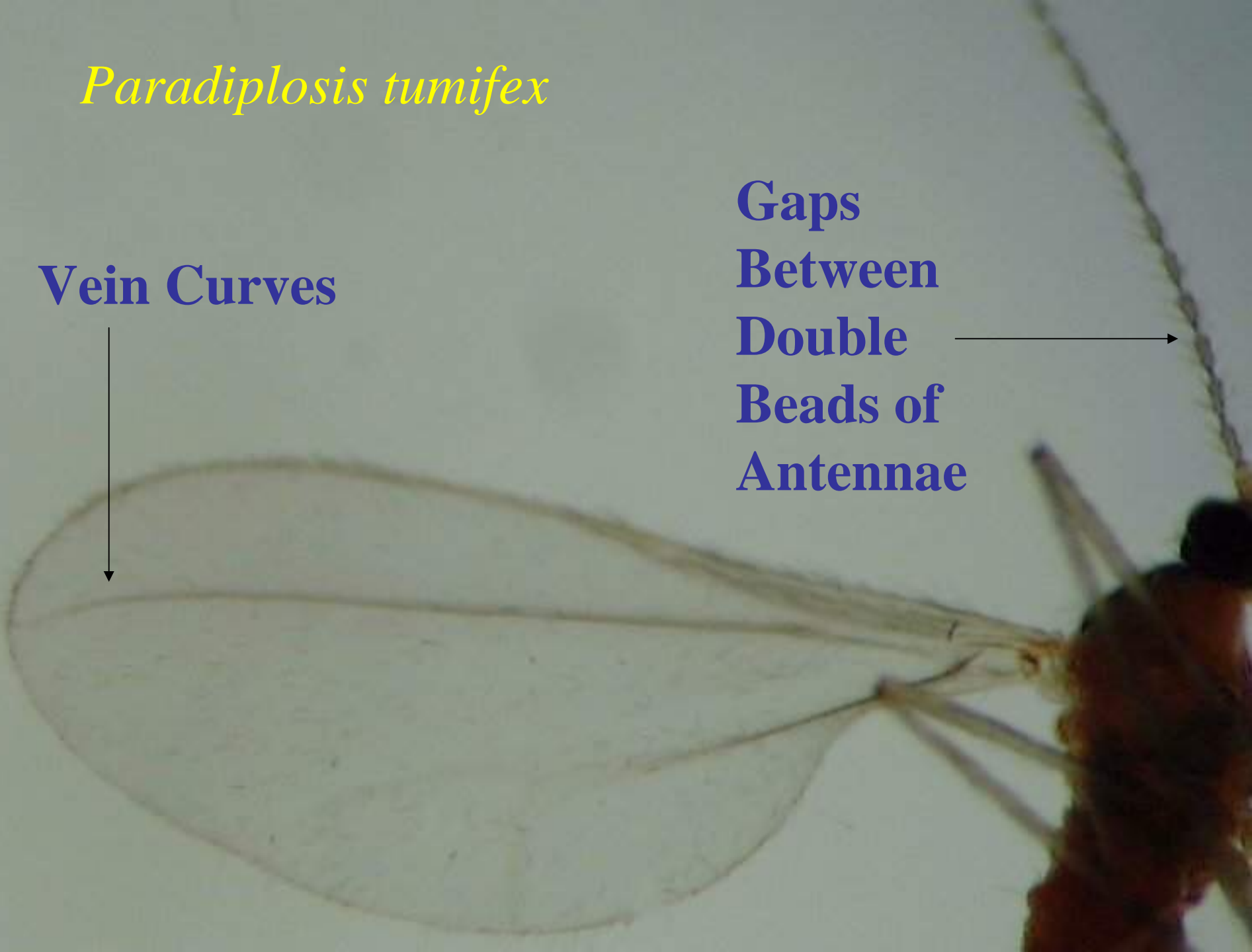


Paradiplosis tumifex

Vein Curves



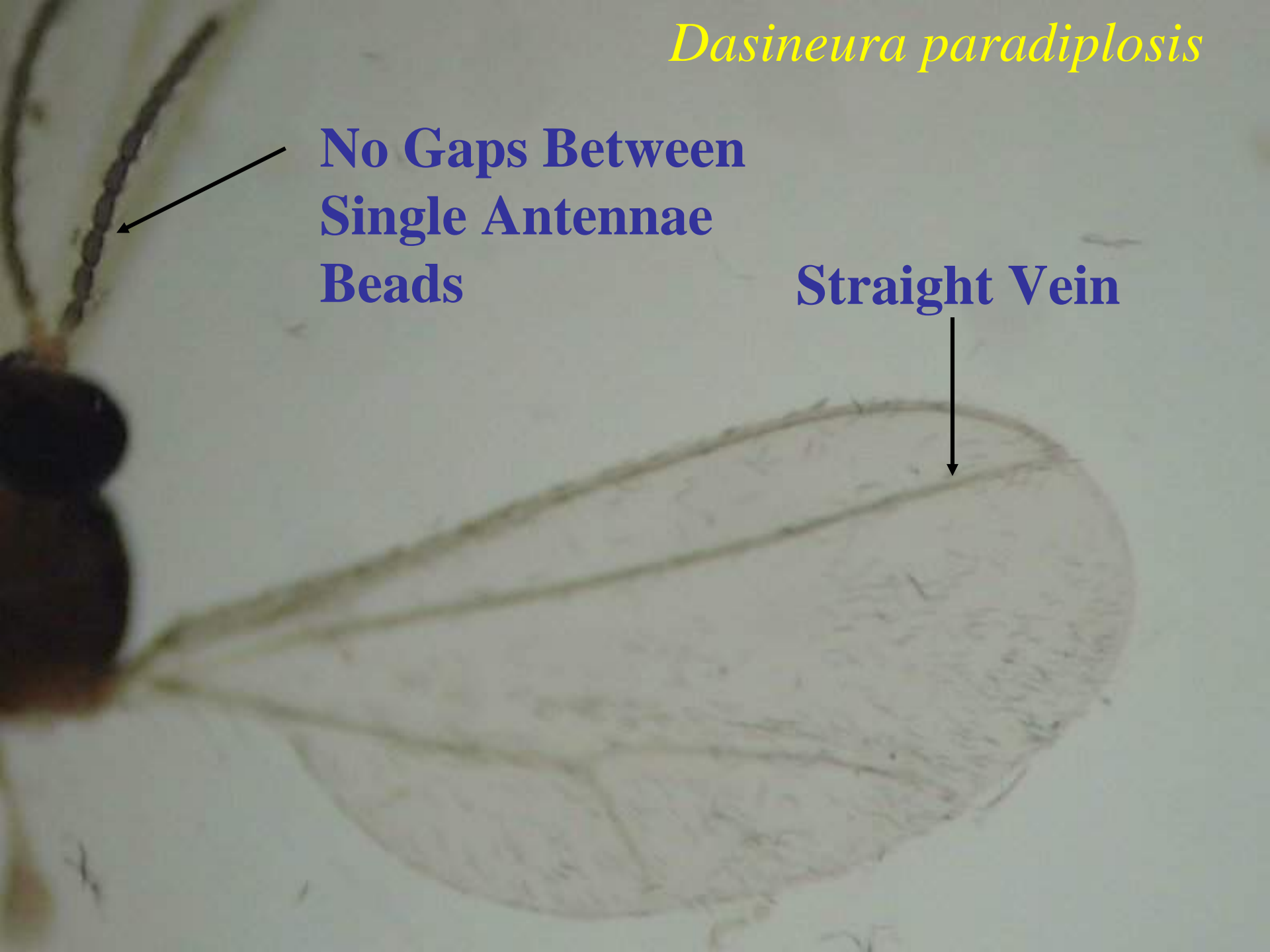
**Gaps
Between
Double
Beads of
Antennae**



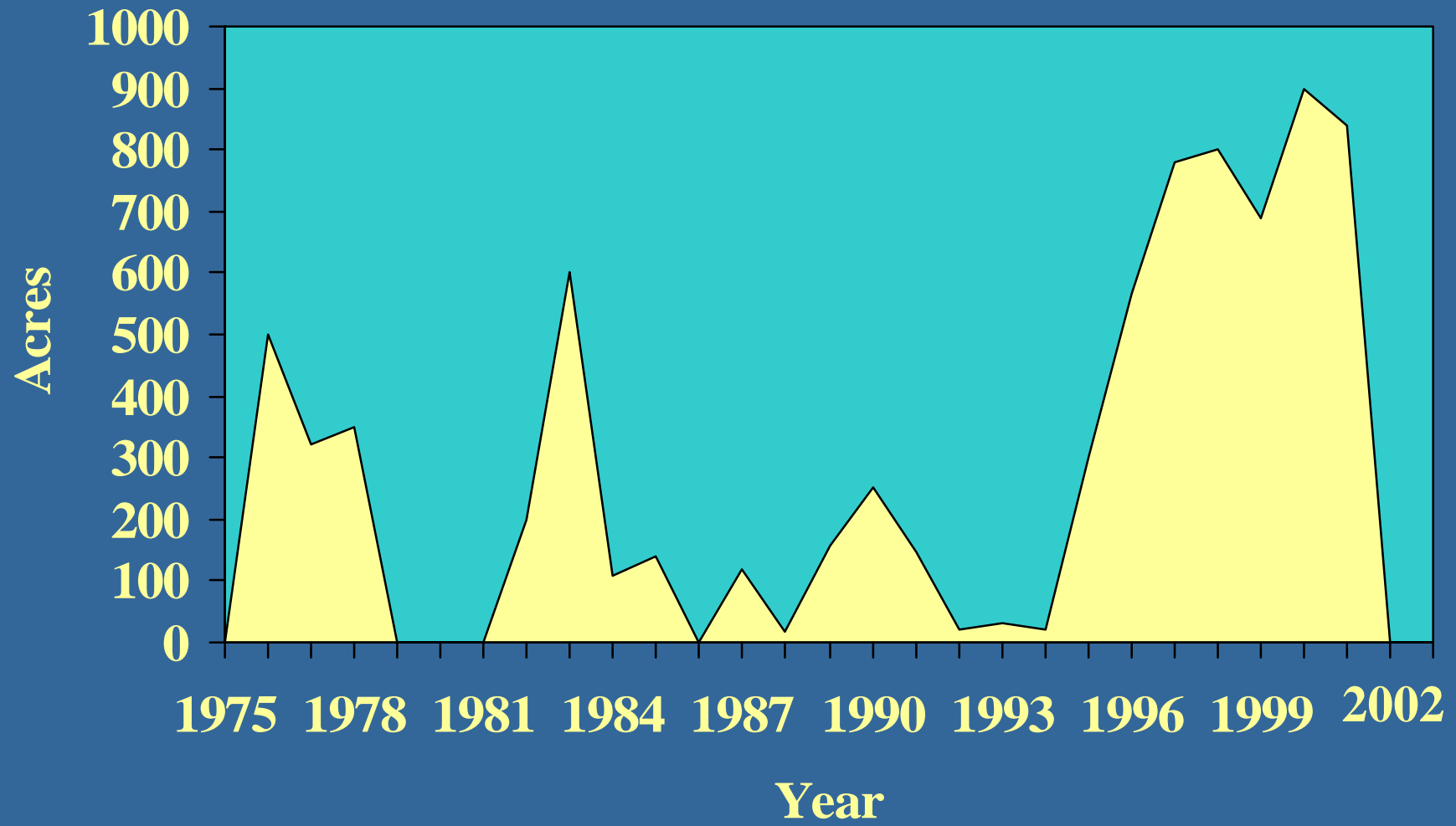
Dasineura paradiplosis

**No Gaps Between
Single Antennae
Beads**

Straight Vein



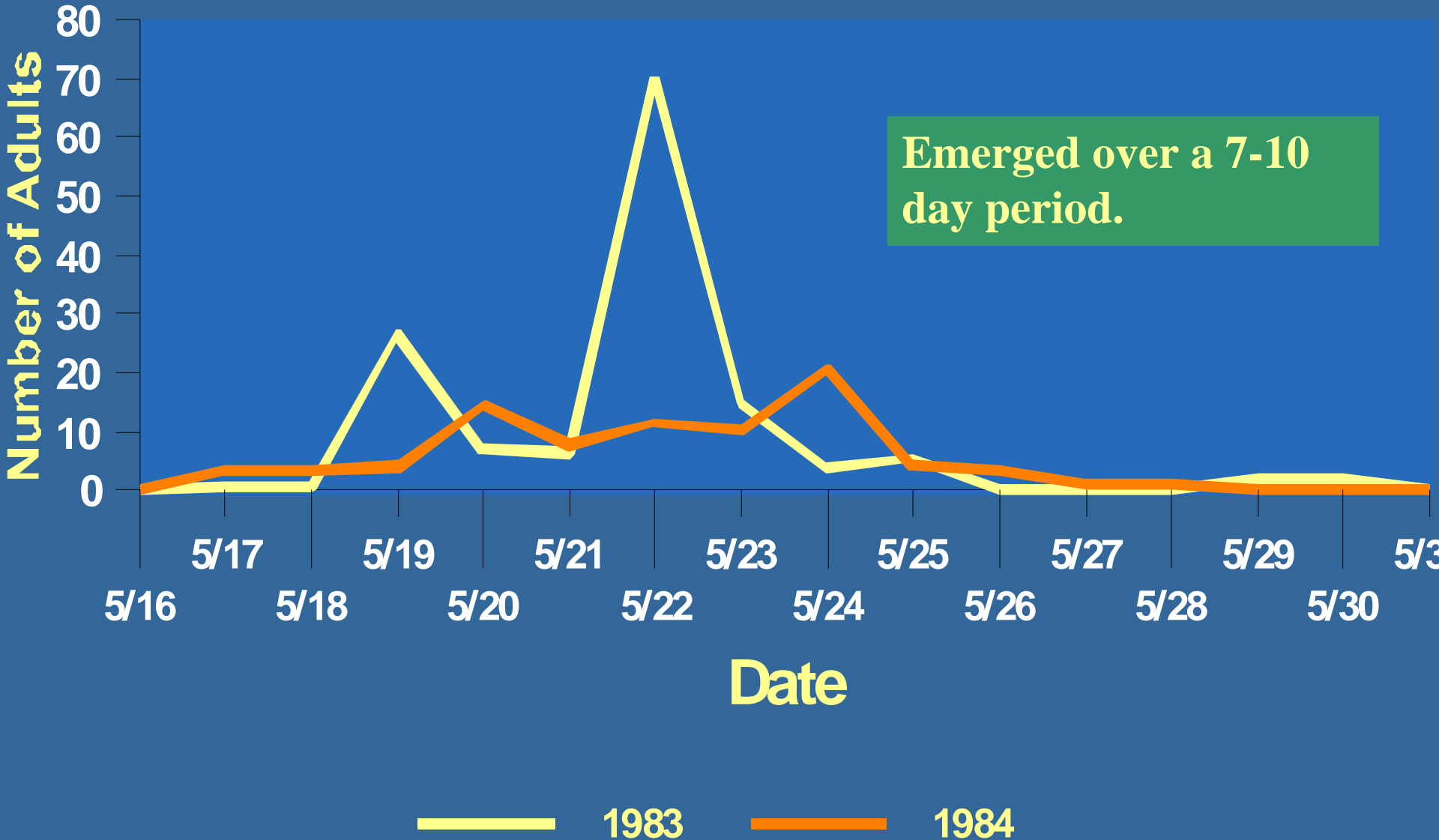
Balsam Gall Midge Outbreak Cycles in VT: about 6 to 7 Years Apart







Balsam Gall Midge Sticky Trap Catch Patterns







**Egg clusters laid
among the needles.**

Balsam Gall Midge Eggs

Eggs 0.5mm(1/50'') long

Newly Laid



Balsam Gall Midge Eggs

40X

Close to Hatching



Feeding of the newly hatched larva causes the needle tissue to expand around it and it appears to sink into the gall.



Larvae of the good midge are attracted to the gall-maker larvae and become enveloped with them in the gall.

A close-up photograph of a plant gall, likely on a stem. The gall is a swollen, yellowish-green structure. A small, orange, segmented larva is visible on the surface of the gall. A small, white, hair-like structure is also present. The background is dark and out of focus.

Dasineura

Paradiplois

Early September Gall



Paradiplois

Dasineura

Late September Gall




Dasineura Exiting the Gall

Most *Paradiplosis* exit by the end of September while most *Dasineura* exit in October.

Overwinter as larvae in the soil

Galls on Needles



A close-up photograph of a pine branch showing numerous galled needles. The galls are small, yellowish-green, and appear as distorted, swollen structures at the base of the needles. The text overlay in the top right corner explains that Gall Midge is considered to be at outbreak levels when more than 10% of the current shoots have galled needles.

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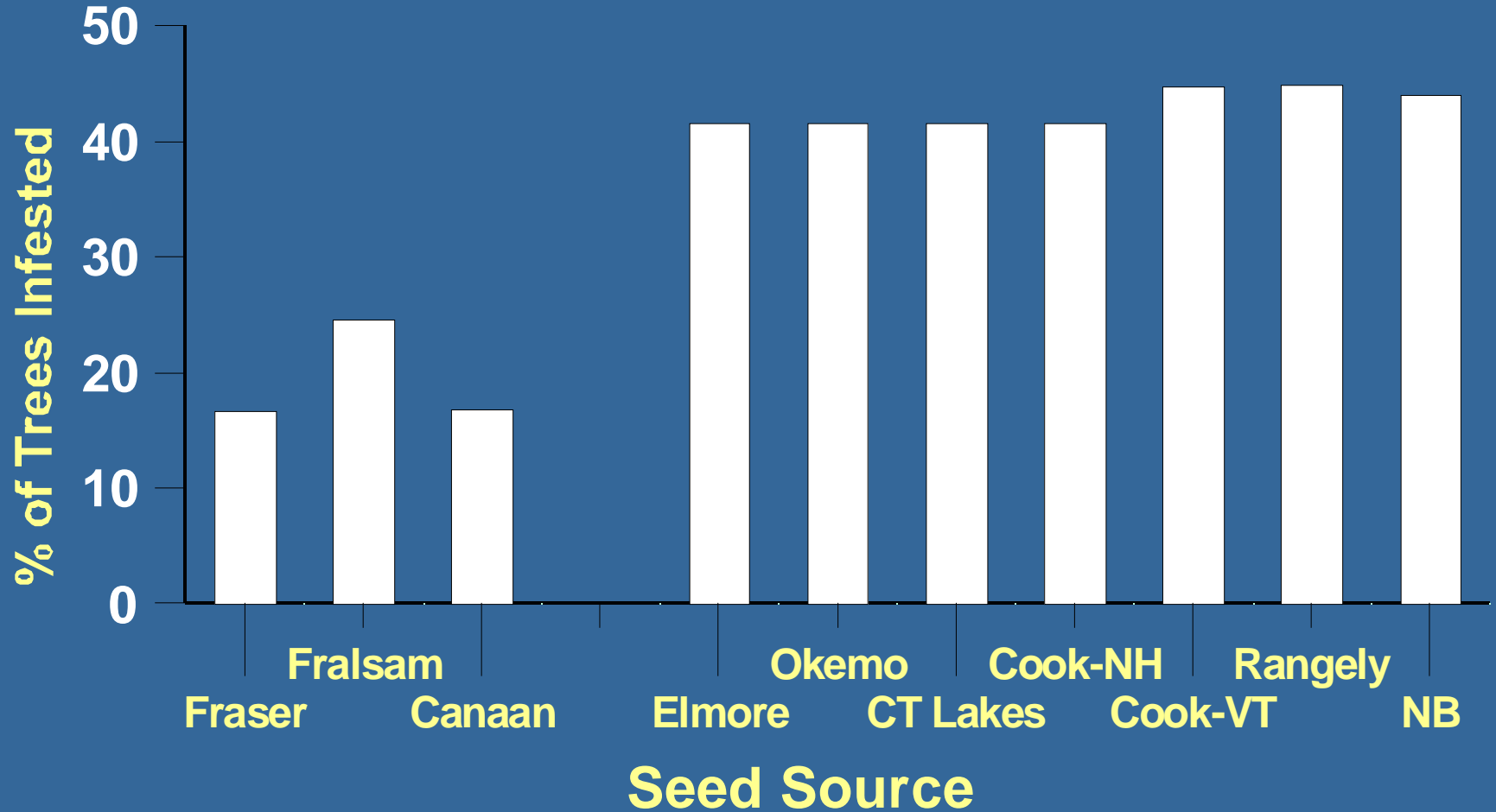








Balsam Gall Midge Host Preference by Seed Source- 2Yr. Ave.



Recommended shoot length of 1 1/2 to 2 inches for best control timing

	Percent Control by Average Actual Shoot Length									
Inches	3/4	1	1 1/4	1 3/8	1 5/8	2	2 1/8	2 1/2	1 1/4 + 2 1/8	
Treatment										
Diazinon 83			94	99	99	94		71		
Diazinon 83	71	78	91			88	77			98
Diazinon 84				92			98			
Lorsban 84				84			99			



Aerial Treatments with Diazinon
AG500 at 2 pints/Ac in 1 gallon of water
vs. Ground Backpack Treatments of
2 tsps/gallon on May 28, 1984

<u>Lincoln</u>	<u>% Control</u>
Aerial	66
Ground	86
<u>Brookfield</u>	
<u>Aerial</u>	78
<u>Ground</u>	92





Summary

- Monitor trees frequently for damage.
- Consider control once more than 10% of the current shoots have galled needles.
- Spray when new shoots in the upper third of the crown ave. 1 ½ - 2 inches in length.
- Remember that when damage noticeably decreases, most gall midge adults seen are probably the good midge.