



The European Skipper— A Pest of Grass Hays

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Origin and Present Distribution

The European (or Essex) skipper is a pest of grass hays in northern Michigan. Accidentally introduced from Europe, it has become established in Canada, the north-eastern U.S. and Michigan. It was first found in Michigan in 1927 near Detroit and now occurs throughout the state. Large aggregations (swarms) of adults have been reported as locally annoying in many counties in the last few years, with car radiators plugged and windshields smeared by driving through them. The most serious infestations have been in the eastern-most Upper Peninsula where estimated losses of grass hay have been up to 1 ton per acre. During the last four years, damage to grass hays has been reported in the northern Lower Peninsula, with some damage occurring in wheat, oats, and corn fields adjacent to grass hay fields.

Biology and Description

EGGS: The female skipper lays a row of tiny, whitish eggs under the lower leaf sheaths of grasses during early- to mid-July (Fig. 1). Eggs are oval, flattened, somewhat concave, and number from 3-6 per stem. Eggs develop for three weeks and then go into a resting stage until the following spring. This egg is very resistant to weathering, and eggs on dry hay or straw packing material are probably the stage that was brought into North America during the early 1900's.

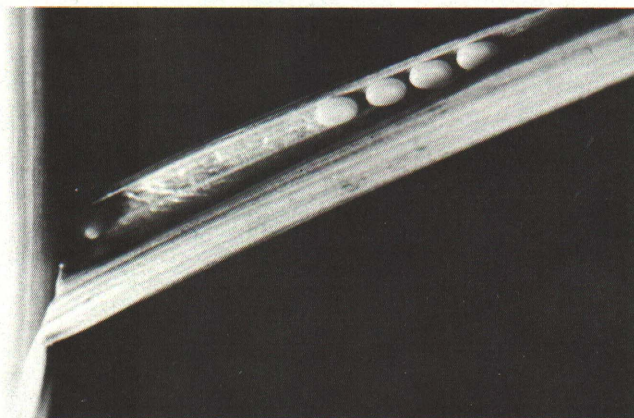


Fig. 1. Eggs of the European skipper

LARVAE: Larvae hatch by late April in the southern counties and by mid-May in the northernmost counties. The larvae are greenish caterpillars, an inch long when full grown, with a carmel-colored head and a constriction or "neck," behind the head (Fig. 2). The caterpillars have six jointed legs just behind the head and fleshy legs toward the rear of the body. A pair of whitish stripes run the entire length of the caterpillars back. Larvae are most abundant during late May in the southern counties and during June in the northern counties.

Larvae commonly roll the leaves of grasses together, binding them with a webbing and hiding in this tunnel while feeding on the margins of the leaves.

Quackgrass, timothy, red top, brome grass, orchard grass, perennial rye, Canadian and Kentucky bluegrass are known hosts. Larvae have also been reported feeding on wheat, corn and oats in Michigan. However, economic damage in Michigan has been primarily confined to grass hays.

PUPAE: Fully developed larvae fasten pieces of leaves or stems around themselves and pupate within this loose cover; however, some pupate without this covering. The spindle-shaped pupa is green, $\frac{3}{4}$ of an inch long, with a double white stripe down its sides and a strong horn projecting forward from the head (Fig. 3). The pupal period usually lasts about 10 days; no feeding occurs during this life stage.



Fig. 2. Larva of the European skipper

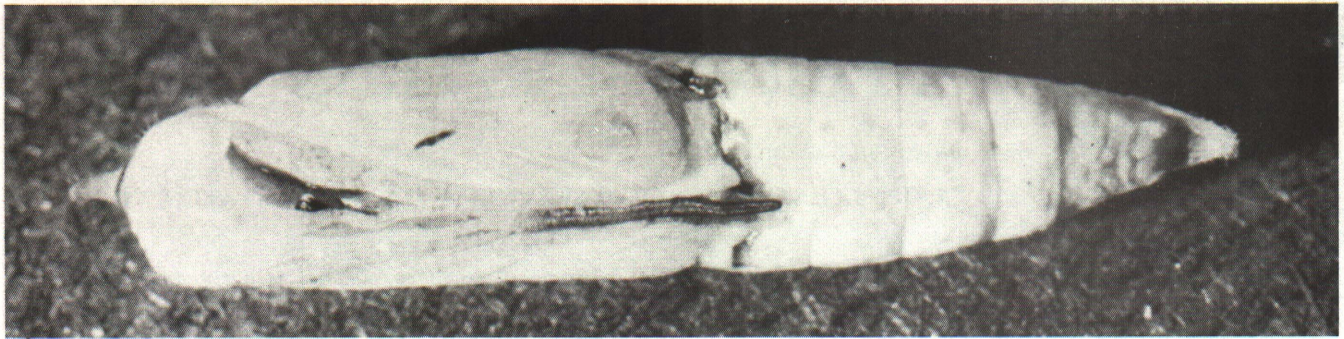


Fig. 3. Pupa of the European skipper

ADULTS: The adult copper-colored skippers (Fig. 4) appear between June 10-30 in northern Michigan. The orange or golden brown wings span $\frac{3}{4}$ of an inch and have black veins and margins. Males are more slender than the females and have a black mark near the base of the front wing (lacking in females). Both males and females have the "hooked" antennal tips, typical of skippers. At rest, the forewings are held vertically and the hind wings horizontally over the abdomen. Adult skippers feed on nectar and can be considered pollinators of flowers.

Males appear about one week before the females, with peak activity of both males and females occurring in early July, but persisting until late July or early August. Flight is slow and they are easily captured in an insect sweep net. They tend to fly in large groups just above the grasses and at times are extremely numerous.

NATURAL ENEMIES: Birds are the only recorded predators of the European skipper in the U.S. A number of native parasites of the larvae and pupae have been reported by Canadian researchers, but to date they have not been of any importance. Control of the larvae by a nuclear polyhedrosis virus is under study at the present time and has shown some promise in Canada. Control by any or all of these natural enemies is a possibility and further studies will be undertaken.

Checking the Field

Growers with grass hays and pasture crops or with grassy fields adjacent to corn or small grain fields should be alert to this pest. Check the grass starting in mid-to-late May for:

1. leaves with edges eaten;
2. portions of leaves rolled into tubes;
3. cylindrical, greenish larvae in the tubes or on the leaves.

An easy method to determine if a spray is needed is to count the number of larvae in a one-square-foot area



Fig. 4. Adult European skipper

within the field. Take two or three of these samples from each field. A spray is needed if six or more larvae are found per square foot.

Currently registered insecticides for control of the European skipper are carbaryl (Sevin) at 1.5 pounds active insecticide per acre and *Bacillus thuringiensis* (Dipel) at 0.25 to 0.50 pounds of formulation per acre. For adequate coverage, spray at 10 gallons per acre. Do not contaminate ponds or streams.

Registration of other insecticides is forthcoming and your County Agricultural Extension Agent will be notified as soon as they become available.

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