

Deer Flies, Yellow Flies, Horse Flies

Chrysops, Diachlorus, Tabanus spp.

(Insecta: Diptera: Tabanidae)

Description:

Immature stages: Eggs are cylindrical in shape, 1 to 2.5 mm in length and are initially creamy white but darken within hours. Larvae taper at each end and are whitish, brown or green depending on the species. Black bands are found around each segment of the body. Pupae are brown, rounded anteriorly, tapered posteriorly, and have leg and wing cases attached to the body. A row of spines encircles each abdominal segment. A pupal "aster" consisting of six pointed projections is located at the apex of the abdomen.

Adult stages: Adults are large flies with broad bodies and bulging eyes. Eyes are contiguous in the males and widely separated in the females. The thorax and abdomen are covered with fine hairs. Deer flies range in length from 7 to 10 mm while horse flies are from 10 to 25 mm. Deer flies are yellow to black, have stripes on the abdomen, and possess mottled wings with dark patches. Yellow flies are predominantly yellow, with vibrant green eyes with two dark bands, wings have a brown patch at the apex. Horse flies are black to dark brown with green or black eyes.

Biology:

Life Cycle: Deer flies (genus *Chrysops*), yellow flies (genus *Diachlorus*), and horse flies (genus *Tabanus*) develop in aquatic and semi-aquatic habitat. As larvae, they feed on other small insects. After emerging as adults, they seek sources for blood, typically large ungulates such as horses, cattle, and deer.

Distribution: Found globally. Georgia produces large populations due to the availability of suitable habitat throughout the state.

Damage:

Deer flies may irritate humans by circling around the head continuously. Tabanid torment of horses may result in risk to riders when animals toss their heads, kick, and exhibit other fly avoidance behaviors. Once a Tabanid finds a host, it slashes the skin so that blood exudes from the wound and laps it up. Even after the fly departs, blood may continue to flow from the bite site until it clots and seals the cut. Only the females "bite," but when populations are large, the blood-feeding behaviors of these insects can pose a major threat to the economic performance of cattle.

Management:

Tabanids are strong fliers so can migrate from development sites for miles to find a blood meal, so flies are not necessarily being produced on the property where they are problematic. Hence, source reduction is seldom practicable.

While many insecticides are labeled for on-animal use against horse and deer flies, control is poor. Horse and deer flies spend very little



Tabanid larva



Adult deer fly



Adult yellow fly



Adult horse fly

time on the host and so do not pick up lethal doses of residual insecticides. While some pyrethroid insecticides may provide minimal repellency when recently applied, they seldom deter tabanids. Pyrethrins and botanical insecticides are effective only if applied directly to the insect. Producers who choose to use insecticides are most likely to see results if they use backrubbers, because that method ensures daily application of fresh insecticide.

Tabanids are not active at night, so it is possible to protect horses and show animals from exposure by stabling them during the day and letting them out only at night. However, this method is not practical for cattle herds.

Although traps will not fully protect animals from horse and deer flies, they can reduce local populations, especially if placed between the animals and the source from which tabanids are migrating. For instance, if a marsh is located east of the pasture, placing several tabanid traps in a row along the eastern fence line may reduce immigrating tabanids and result in fewer flies harassing pastured animals. A variety of commercial horse fly trap styles are available, or you can construct your own, such as by using these plans provided by the University of Missouri (<https://extension.missouri.edu/publications/g7013>).

Different tabanid species emerge throughout the season, meaning various species of horse and deer flies will be present from early spring through late fall, until they are killed off by a hard frost. Horses or small cattle herds can be somewhat protected from horse and deer flies using insecticides and traps, but currently available options cannot adequately suppress horse flies.

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