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Parasitic Wasps

Order:	Hymenoptera (bees, ants, and wasps)
Family:	Braconidae, Ichneumonidae, Encyrtidae, and others (parasitic wasps)
Metamorphosis:	Complete (egg-larva-pupa-adult)
Mouthparts:	Chewing in larvae and adults (sometimes modified into sucking mouthparts in adults)



A **PARASITIC WASP**, *Bathyplectes curculionis*, see color print, Fig. 25, on publication B-1013.

Parasitic wasps, wasps that parasitize and eventually kill their insect prey, are highly variable in size, shape, and ecology. As a group, they parasitize various insects and related arthropods at different growth stages of their prey. They are important as naturally occurring biological control agents. They have also been intentionally introduced to suppress pest insect populations including Russian wheat aphids and alfalfa weevils in Wyoming

Body Form

Eggs: Eggs are laid within or on the body of prey. They are of various shapes and sizes, depending upon the species.

Larvae: Parasitic wasp larvae are generally grub like. They have a distinctive but small head capsule and well-developed mandibles. Their bodies are fleshy and usually cream colored. They are found feeding internally in the body of prey or sometimes externally on the cuticle (skin) of prey, depending on the species.

Pupae: Pupae are various shapes and sizes, depending on the species. Puparia may be found within the body wall of prey or outside the body.

Adults: Most parasitic wasps have two pairs of well-developed wings. The wing venation in many species is partly to highly reduced. There is usually a constriction where the abdomen and thorax meet, giving the appearance of a thin waist. Sometimes the constriction is extended into a long stalk.

Life History

The adult female wasp lays an egg in or on the body of a host insect. Common host insects in cropping systems are the aphids and larvae of Lepidoptera and Coleoptera. The egg hatches, and the larva feed in or on the host, eventually killing it. In some species, a single egg will produce multiple offspring. If the larvae feed internally in a host, the wasp larvae may pupate in the body of the host or emerge from the

body and pupate outside the host. If the larvae feed externally on a host, the wasp larvae will pupate outside the body of the host. Adults will mate, and multiple generations will occur per year. Overwintering stages are variable and in some species are unknown.

Plant Benefit

Plants benefit from parasite activity due to the reduction in population of insect pests. Some of the more common crop pest insects suppressed by parasitic wasps in Wyoming are aphids, caterpillars, and beetle larvae.

Management

Parasitic wasps are important naturally occurring biological control agents. Some species have been intentionally introduced to suppress pest insect populations. In Wyoming, these include parasitic wasps introduced to control alfalfa weevil and Russian wheat aphid. Some species are available for sale for greenhouse and backyard use.

Sources of further information: Guides on crop production and pest management will often include information on beneficial insects like parasitic wasps.



Aphids parasitized by **PARASITIC WASPS**. The aphids to the left and bottom are mummified bodies that occur as a result of parasitism (beneficial). The top right aphid is a healthy Russian wheat aphid. See color print, Fig. 26, on publication B-1013.

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