

Parasitoids

Parasitoids are some of the most potent tools available for inundative control of insect pest populations. The advantages of parasitoids are their ability to search out pest insects and their ability to persist over multiple years. Parasitoids lay their eggs in the pest (host) where they hatch, kill and eat the host (Figure 1). The parasitoid survives on host nutrients and emerges again the next year to repeat the process. Each female parasitoid holds hundreds of eggs, meaning these natural enemies can rapidly destroy a pest population if conditions are right.



Figure 2. *Macroglanes penetrans* laying eggs on orange wheat blossom midge eggs.



Figure 1. Parasitized cereal leaf beetle

Limitations

Parasitoids are susceptible to pesticides, just like their host insect. Timing of spraying is integral to maintain populations of beneficial parasitoids. Natural barriers for finding and killing pests exist everywhere and vary from year to year, proper IPM must be used to maximize parasitoid survival and effectiveness.

Research

Parasitoids are capable of obtaining levels of control reaching 90% of the pest population. Research at WTARC aims to find available parasitoids of local pests and introduce them into the Golden Triangle. To this effect in 2014 *M. penetrans* (Figure 2) was introduced to control the Orange Blossom Wheat Midge.