

## The Role of Priority Effects on Host-Parasite Interactions

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In many host-parasite systems, interactions are studied between one host species and one parasite species. However, in natural ecosystems, organisms often times have to defend against multiple parasites simultaneously. The order and timing of the arrival of parasites, or the priority effects, can impact the parasite success and their interactions with later parasites. To better understand the priority effects of host-parasites interactions under co-infected conditions, this project tested a full factorial design of infections of the host moth species, *Galleria mellonella*, with two competing parasitic nematode species, *Steinernema carpocapsae* and *Heterorhabditis indica*, and a control solution. The first round of infections took place on day 1 followed by the second round of infections on day 3, and host mortality was recorded throughout the project. After day 10, the nematodes were recovered from the host cadavers and counted. The results show that infection by *H. indica* following infection by *S. carpocapsae* increases the odds of host mortality compared to coinfection following the other order of these two species. *H. indica* was also shown to be the more successful parasite with higher average nematode counts once recovered from the cadavers, but less successful when in competition with *S. carpocapsae*.