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Brooks Emerick* (bemerick@kutztown.edu), Lytle Hall 266, Kutztown University, 15200 Kutztown Rd, Kutztown, PA 19530. *Infected Host-Feeding in Semi-Discrete Host-Parasitoid Population Dynamics*. Preliminary report.

Discrete-time models are the traditional approach for capturing population dynamics of a host-parasitoid system. More recent work has introduced a semi-discrete framework for obtaining model update functions that connect host-parasitoid population levels from year-to-year. In particular, this framework uses differential equations to describe the host-parasitoid interaction during the time of year when they come in contact, allowing specific behaviors to be mechanistically incorporated. We use the semi-discrete approach to study the effects of infected-host-feeding, the tendency of female parasitoids to occasionally feed on an already infected host larvae. We find that infected-host-feeding does stabilize the system even with a time-dependent feeding rate, yielding a period-doubling bifurcation as the number of viable hosts increases. Overall, infected-host-feeding creates an inefficiency in the parasitoid reproduction habits from year to year effectively establishing coexistence between the two species. (Received September 17, 2019)