

Life tables and feeding ability of *Ophraella communa* (Coleoptera: Chrysomelidae) a potential biocontrol agent of *Ambrosia artemisiifolia*

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The impact of a native chrysomelid defoliator, *Ophraella communa* Lesage, on common ragweed, *Ambrosia artemisiifolia*, was evaluated in a controlled environment. A life-table was constructed, and the feeding potential of different life stages of *O. communa* determined at three temperatures (20, 24 and 28°C) and three relative humidities (50, 60 and 80%). Under near optimal conditions (26-28°C, 40-50% RH) the intrinsic rate of increase was 0.190-0.192 and the net reproductive rate was 650-670 daughters per generation. *Ophraella communa* is able to double its population size in five days and the average generation time is 30-35 days. Three first- and third-instar larvae of *O. communa* consumed between 35.7% and 58.6% of ragweed leaf area in two days, respectively. Feeding of *O. communa* predisposed common ragweed to attack by a host-specific fungal pathogen, *Phoma* sp.. Inoculated alone, *Phoma* sp. causes systemic infection and invades and kills inflorescences, but rarely kills the whole plant. Combinations of *O. communa* and *Phoma* sp. display a synergistic effect resulting in high levels of plant mortality.

Biology of *Smicronyx guineanus* and *S. umbrinus* (Coleoptera: Curculionidae), potential biocontrol agents of *Striga hermonthica* (Scrophulariaceae) in Burkina Faso

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A three-year (1991-1993) investigation was done in the field and laboratory to study the biology of *Smicronyx guineanus* Voss and *S. umbrinus* Hustache. The life-history of the weevils attacking *Striga hermonthica* (Del.) Benth., was studied in Burkina Faso, west Africa. Field experiments were conducted at Kaya, in fields of sorghum, *Sorghum bicolor* (L.) Moench, and pearl millet, *Pennisetum americanum* (L.) K. Schum. (syn. *P. typhoides* (Burm.) Stapf and Hubb.). The weevils are univoltine; the adults emerge in late August, mate and the larvae enter the ovary of the striga inflorescence with a subsequent formation of galls which prevent seed production. The larvae drop to the soil and bury themselves to a depth of 1-15 cm, enter into dormancy and pupate. The effect of precipitation on emergence of adults of the two species of *Smicronyx* was investigated in the insectary. Ten, 20, 30, 40 and 50 mm of rainfall were simulated and the effect on the pupal emergence noted. Highly significant differences were observed and rainfall of 30-40 mm was found to be optimal for *S. guineanus* and *S. umbrinus* adult emergence.