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Entomology

Methods for Rearing *Heliocheilus albipunctella* in the Laboratory and Eliminating the Pupal Diapause

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Introduction

The millet head miner *Heliocheilus albipunctella* is one of the most damaging pests of pearl millet in the Sahel. During the past 15 years, considerable progress in the development of pest control measures has been achieved through increased knowledge of the ecology of this heliothine moth (Nwanze and Youm 1995, Kadi Kadi et al. 1998, Youm and Owusu 1998a, 1998b). Future research to improve control of the millet head miner could be enhanced through the development of reliable artificial rearing techniques. Moreover, the improved rearing techniques could be used for the assessment of biological control agents and for supporting millet breeding programs to advance head miner integrated pest management (IPM).

Breeding populations of *H. albipunctella* were established at the Natural Resources Institute (NRI), University of Greenwich, UK from eggs collected from Niger at the end of the 1996, 1997 and 1998 field seasons. Previous authors have reported difficulty in rearing *H. albipunctella* (Gahukar et al. 1986), and the process has remained problematic. However, from 1996 to 1998 we effectively increased the number of generations reared in each successive year, and the 1998 population was sustained until the end of the project, which was terminated after 15 months.

Methods and Results

Heliocheilus albipunctella cultures were maintained under environmentally controlled conditions. Relative humidity was kept at a constant 60%. A photoperiod of 14 h light and 10 h dark, with photophase light intensity changes, was used, and temperatures were maintained at 31°C and 27°C, respectively. Under this temperature regime few pupae entered diapause. The information