Integration of Time of Planting and Insecticide Application Schedule to Control Sesame Webworm and Gall Midge in Uganda

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ABSTRACT

Objectives: This study aimed to increase grain yield of sesame by protecting it against sesame webworm and gall midge. The specific objective was to determine the appropriate time and frequency of insecticide application (insecticide application schedule) and time of planting of sesame to control the pests. Methodology and results: Time of planting sesame included at the onset of rains, and at 2 and 4 weeks after onset of rains (WAO). Seven insecticide application schedules of the contact liquid insecticide Cypercal P 720 EC \textregistered were investigated. This insecticide contains two active ingredients, 120 g/l cypermethrin and 600 g/l profenofos. Application of the insecticide twice at 2 and 4 weeks after emergence (WAE) on sesame planted at the onset of rain resulted into the lowest incidence (0.5 larvae/10 plants) of sesame webworm and highest grain yield (1039 Kg ha\textsuperscript{-1}). This was statistically comparable to the outcome with weekly insecticide application (same incidence) and grain yield of 1161 Kg ha\textsuperscript{-1}. The contact insecticide did not significantly reduce incidence and capsule damage by the sesame gall midge. The sesame gall midge had the least incidence and
capsule damage on sesame planted two weeks after the onset of rain.

**Conclusion and application of the findings:** Planting sesame at the onset of rains combined with insecticide application twice at 2 and 4 WAE is the most effective strategy of controlling sesame webworm and achieving the highest sesame grain yield. It is important to monitor the dominance of either sesame webworm or gall midge during crop growth. Where sesame gall midge dominates, delaying planting by two weeks after the onset of rain is preferable. Research on the effect of insecticide application schedule on sesame gall midge using systemic insecticides is recommended.

**Key words:** Sesame, webworm, gall midge, insecticide application, time of planting