PROJECT NUMBER: 1101
PROJECT TITLE: Entomological Research
PROJECT LEADER: D. L. Faustini
WRITTEN BY: L. Ryan
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## I. METHOPRENE

A. Objective: Determine the most efficient use of methoprene within PM's cigarette beetle (CB) management program.

B. Results: Low-level, non-uniform applications of Kabat® allowed CBs to develop on untreated lamina and break through the expected Kabat® protection in Maury St. warehouse #28 during the summer of 1989. This may be avoided by uniform applications of Kabat® to achieve 5 ppm of methoprene on lamina (1).

C. Plans: Continue to integrate methoprene into PM's pest management program. Evaluate methoprene residues on cigarettes in the marketplace (2).

D. References:

1. Ryan, L., Lehman, R. M. and Minor, M. F. Cigarette Beetle Infestation in a Kabat® Warehouse. Memo to Faustini, D. L. 3 January 1990.

2. Ryan, L. Monitoring Methoprene Residues on Cigarettes in the Marketplace. Memo to Faustini, D. L. 3 January 1990.

## II. FUMIGATION

A. Objective: Investigate alternatives to conventional fumigants for the disinfestation of bulk tobacco.

B. Results: Vacuum-steam conditioning as an alternative to methyl bromide fumigation for obtaining phytosanitary certificates (phytos) for export cut filler (ECF) has been approved by the Agricultural Research Service (1). The Animal and Plant Health Inspection Service are expected to issue a compliance agreement and treatment parameters this quarter (2). The cut filler production process kills all CBs at both the initial vacuum-steam conditioning step and at the driers (3).

Although low-oxygen modified atmospheres generated by Ageless® sachets have been shown to be lethal to CBs, three or more sachets are required per ECF bag to ensure 100% CB kill (4).

C. Plans: Evaluate strategies to protect ECF in silos prior to packaging and assist Manufacturing department personnel in implementing conditioning-phytos for ECF at the Manufacturing Center and Stockton Street (5).