

PROJECT NUMBER: 1503
PROJECT TITLE: Modified Smoking Materials
PROJECT LEADER: J. G. Nepomuceno
PERIOD COVERED: November, 1987

FOAMED FILLER BINDER

- A. Objective: To develop a process for applying a subjectively acceptable foamed binder to the tobacco filler during making to improve cigarette quality.
- B. Results: Firmness results from Cambridge Lights cigarettes made with 1% pectin binder added to the rod at the maker show a 0.1-0.15 mm pack firmness improvement over the control at standard weight. The results also show that at this binder addition level, pack firmness numbers equivalent to those of the control are achieved with =24 mg less tobacco. In order to achieve these pack firmness results, the OV of the feed tobacco was reduced by =1.5% OV units to compensate for the moisture increase resulting from the binder addition. However, with the pectin costing approximately \$11.26/lb, the above results do not appear to be cost effective at this high binder addition rate. As a result, development efforts to redesign the binder and nozzle applicator systems are in progress to maximize the firmness improvement at the lower addition rates (less than 0.3% add-on). Evaluation of a nozzle tip with a reduced diameter (from 0.063" i.d. to 0.047" i.d.) looks very promising. Low foam densities (less than 0.15 g/cc) were achieved without excessive pressure build-up in the foam generator. This pressure was minimized by telescoping down to the reduced diameter at the final half inch of the nozzle. Testing of nozzles with diameters reduced further is planned. Objective is to further increase the foam velocity to match or slightly exceed the suction tape speed thus increasing the dispersion of binder within the rod.

Degraded pectin samples from Grindsted (TS-P 095) were shipped to Australia and Switzerland for their evaluations. This pectin was shown to match the performance of the degraded pectins we have evaluated in-house. The analytical data on this material along with the manual of QA procedures was also shipped under separate cover. These results were further discussed via telephone with FTR and Australia in more detail.

- C. Plans: Redesign the binder and nozzle applicator systems and evaluate on the Cambridge cigarette with the objective of maximizing the firmness improvement at the lower addition rates.

2001117667