October 7, 1983

Subject: Effects of Microwave Treatment on Tobacco

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Object:

The object of this work was to do a preliminary evaluation of the effects of microwave delamination of compacted tobacco on some tobacco characteristics.

Summary:

Compacted grades of flue-cured, burley, and turkish tobacco were delaminated with microwave energy. The temperature of the tobacco was raised to 175 F. or greater. Tobacco samples were analyzed for total sugars, % nicotine, and essential oils. Cigarettes were made for each grade and smoked on an expert panel. Controls were non-microwaved tobacco of the same grade.

Results indicate that microwave delamination does not significantly alter the chemical or smoking characteristics of the tobacco tested.

Results & Conclusions:

Overall, compacted tobacco heated to temperatures of 140 F. or above with microwave energy was totally delaminated by the treatment. The tobacco heated with microwaves was hot and soft at these temperatures.

Table 1 lists the results of samples analyzed for total sugars and % nicotine. The results indicate that the microwave treatment had no effect on the total sugars or % nicotine in any of the grades tested. Differences in the number can be explained by the general variation of these characteristics in tobacco and the test procedures. The treatment of a larger amount of tobacco with increased sampling would be needed to accurately define any differences that might be present.

The samples taken for essential oil analysis were run in duplicate. Results of this evaluation are listed in Table 2. These results show that there is no difference in the essential oil content of the tobacco before and after the microwave treatment.