Retting of Kenaf, *Hibiscus Cannabinus L.*

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Very little scientific information is available concerning the retting of kenaf, *Hibiscus cannabinus L.* While trials have been made by farmers in several areas of El Salvador, the results have never been sufficiently satisfactory to encourage them to exploit the crop as a source of soft fiber. It seems probable that an efficient method would aid considerably in promoting its production. The ease with which the plant can be grown and the apparent need for soft fiber makes it a promising crop for this region.

In the retting of kenaf, organisms break down the soft tissue of the cortex leaving the fibers free. The type of organisms which act upon the fiber depends upon the conditions of the retting, whether tank retting or stack retting. In stack retting the active agents appear to be mostly mold fungi and in tank retting bacteria are the most active agents. There seems to be little information available as to the optimum conditions for these organisms in retting kenaf. An experiment was designed in 1946 to study the various methods of retting and how they may be improved. The experiment was divided into two phases, first, a study of combinations of temperature and pH in tank retting and, second, a study of methods of stack retting, with and without sprinkling. The results of these investigations are set forth in this publication.

**EXPERIMENTAL METHODS**

As reported in a previous investigation (5), and in the work of Choussy (2), kenaf should be cut for fiber about 90 days after planting. Fiber cut 60 to 70 days after seeding is soft and lustrous but not as strong. Plants allowed to remain over 100 days become hard and the fiber is coarse. In order to have plant material of the same age for experimental work, seedings were made at different dates. At approximately 90 days growth the lower 3 feet of the stems were harvested. The stems were then treated, depending upon the experiment.

For the tank retting of kenaf, large glass jars were used and the temperature controlled with a water bath. The pH was controlled with sulfuric acid and lime-water. In the first experiments conducted tap water was used in the jars, but with some trials it was found that river water with its impurities was preferable. The first three experiments consisted of combinations of pH 6.0, 7.0, and 8.0 with temperatures at normal temperatures and 34° and 40°C. Green stems with the cortex not removed were cut to the proper lengths to fit into the jars and the different conditions of pH and temperature were adjusted. The first investigation included normal temperature and 34°C with the different pH levels. Then the water bath was changed to 40°C and a second test made, including the normal

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3Figures in parenthesis refer to "Literature Cited", p. 1004.

4Normal temperatures in the flasks ranged from 22° to 26°C.