TITLE	STRUCTURE AND PROPERTIES OF FIBER FROM DIFFERENT PARTS OF PINEAPPLE LEAF
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ABSTRACT	There is a lot of agricultural waste in Thailand. One type of waste is pineapple leaves. There have been many attempts in using the fiber from pineapple leaves as a filler and a reinforcing material in polymer composites. The fiber is obtained from every part and position of the leaves, and there are several methods to separate the fiber. Therefore, the mechanical properties of the fibers may be different. The information about the fiber structure and properties are very important in order to fully utilize the waste leaf. In this research, the structure of pineapple leaf fibers (PALF) in the transverse and longitudinal directions were investigated. The fiber is a bundle of many microfibers of about 3 um in diameter, which are held together with binding materials. The fiber can be separate into two categories according to the regions in which it is found, i.e. mesophyll fiber bundle and vascular fiber bundle. Each type of fiber contains similar microfibers with a small cavity in the middle called a lumen. The fiber has a rough surface. After treating the fiber with sodium hydroxide solution, the fiber surface is smooth and has no interruptions or ends is along the length of the fiber. Moreover, the mechanical properties of the fiber can be obtained with four separation methods, i.e. hand scraping, retting, wet milling and wet dry milling. Hand scraping provides the fiber with the highest strength followed by wet milling, retting, and, finally wet dry milling. The strength of the fiber depends on the gauge length, i.e. the shorter the gauge length the higher the strength of the fiber. The strength of the fiber obtained from the bottom, the middle, and the top parts of the leaf were also determined. The bottom position tends to be stronger than the middle and the top positions. In addition, the strength of the fiber from the leaf from stem, ratoon, and crown were not different. The strength of the fiber from different leaves around the stem was also considered. Strength increases from the outer leaf to the inner leaf of the stem. The distribution of strength was different depending on the age of the leaves. It is concluded that the strength variation

	of the fiber from different types of leaves and parts is too small to be worth the separation of the leaves to get the best fiber.