

Worldwide progress in the use of agricultural fibers for the manufacture of pulp, paper, and paperboard

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The worldwide capacity for production of papermaking pulp, from agricultural fibers, and the use of this pulp for manufacture of all grades of paper and paperboard, increased dramatically from 1975 until 1997, going from 9.3 million metric tons, or 6.9% of total papermaking pulp capacity, in 1975 to 23 million metric tons in 1997, or 10.9% of total papermaking pulp capacity. Unfortunately, due to the serious financial crisis in the Asian countries, and in some Latin American countries, which began in 1997, combined with the fact that China closed some 2000 small agricultural fiber based mills, which did not have chemical recovery systems, this goal was never reached, so there was actually no increase in capacity for 1998 and very little projected for the future. However, it is my belief that, as soon as the economic situation improves in these countries, whose paper industries are major users of agricultural fibers, we shall see this increase in their use resumed.

Straw, sugar cane bagasse, and bamboo, also grown as a crop are the leading agricultural fibers being used from a quantity standpoint. However, many other agricultural fibers are being used, especially for specialty pulps for high priced paper products. Pulp production in some five countries is based 100% on agricultural fibers and at least nine countries depend on agricultural fibers for more than 50% of their pulp production, with China and India being the leaders. As a result of the modern technology, which has been developed for collecting, storing, handling and pulping these raw materials, the economics of using them has improved tremendously since straw was abandoned, as a primary raw material, in many mills in the Midwest, who were producing high quality corrugating medium. This advanced technology, which was originally developed primarily, in the U.S., for pulping bagasse, is already in use in many countries and has been applied to straw, bamboo, reeds, grasses, and cotton linters and will undoubtedly be applied to other agricultural fibers, including kenaf, in the future.

From a technical and quality standpoint, any grade of paper, paperboard or reconstituted panelboard can be produced by using a combination of various agricultural fiber pulps, for 100% of the fibrous furnish. However, in North America, pulpwood will continue to be king, but some of the agricultural fibers are expected to become important supplementary fibrous raw materials. The agricultural fibers, which appear to have the greatest prospects for major use in North America, are bagasse, cereal straw, seed grass straw and possibly kenaf and grain sorghum stalks. It is projected that, as soon as economic conditions become more stable in Asia and Latin America, the use of agricultural fibers, worldwide, will resume acceleration at a rapid rate. In fact, the time may be approaching in some areas of North America, when paper company executives realize that the use of some of these fibers is already economical and would result in profitable operations, especially as supplementary fibrous raw materials.