SORGHUM PRESS CALIBRATION

Covering a modern homesteading tradition in his book, Sweet Sorghum (Lara M. Ervin, 1992), George Kuepper discusses ways to transform this natural sweetener from plant to plate. Sorghum production is a practice used by many farmers to produce sorghum syrup. Sorghum is a natural sweetener that benefits health, body and food. This excerpt is from Chapter 12 and Chapter 13; it describes milling and cooking methods of sorghum production. Learn more about growing and harvesting sweet sorghum by reading Growing Sorghum: A Natural Sweetener.

You can purchase this book through Kerr Center Publications: Sweet Sorghum. kerrcenter.com

MILLING

Efficiency of juice extraction is the goal of milling. It is accomplished by proper maintenance of the roller surfaces, accurate spacing of the rollers, correct roller speed, and skilled feeding of the mill. Most rollers on three-roller mills are grooved. The surfaces are neither convex nor concave, so any adjustment is uniform along the length of the rollers' interface. Spacing of rollers on three-roller mills is standard; however, each unit should be checked for imprinted instructions to the contrary. A 3/8 inch gap is needed between feeder and top rollers, and a 1/16 inch gap between the expeller and top rollers. Adjustment bolts are positioned on each end of the smaller rollers and are used to set the gaps.

SPEED

The current recommended speed for a three-roller mill with a top roller diameter of 12 inches is 7.5 rpm for the top roller. The speed of top rollers on smaller mills is closer to 9 rpm. This contrasts with earlier recommendations that called for top roller speeds of 9 to 11 rpm for large mills and 10 to 12 rpm for small mills (Freeman et a1., 1986). A study in Tennessee found top roller speeds ranging from 4.8 to 11.4 rpm, with most averaging close to 8 rpm (Wilhelm and McCarty, 1985). Trials carried out by farmers have shown that as much as 20 percent of the potential juice yield is lost by increasing mill speeds from 7.5 to 12 rpm (Wilhelm, 1987). One way to check a mill for extraction efficiency is to weigh 100 pounds of stalks, mill them, and weigh the extracted juice. An effective mill will squeeze about 45 to 50 pounds of juice per 100 pounds of cane. Efficient feeding of the mill requires steady pushing of the stalks, butt end first. Capacity of mills will vary, but maximum capacity should be maintained as much as possible. A properly set and operated mill will expel stalks with joints breaking over as they leave the last roller. Cane waste should be dry to only slightly sticky.

MAINTENANCE

Maintaining a mill requires the same common sense applied to other equipment upkeep. Because bearings work at low speed, lubrication can guarantee a long life if not otherwise abused. Running the mill at a correct feeding rate and speed will make it last longer and decrease downtime. It is important to use only food-grade grease on any portion of the mill where the lubricant might come into contact with either stalks or juice. This includes all roller bearings. Food-grade grease can be bought from most apiary (beekeeper) supply houses and from suppliers to the food industry.