

Varietal Suitability for Gur Manufacture

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In Bangladesh, gur is one of the most important sweetener for rural peoples, and gur making is the only rural industry in the non-mill zones of north-west and south-west part of the country. The production of sugarcane, manufacturing of gur and marketing are labour intensive and creates huge rural employment during September to December. Crushing of sugarcane is done by diesel crusher, power crusher and country crusher, and sugar extraction efficiency varies from 45-70% which is much less compared to sugar mills incurring huge amount of national losses. Therefore, for gur making soft sugarcane having low fibre content is preferred. Besides, gur is normally praised in the market for its colour. Bright golden yellow coloured solid or semi-solid gur is preferred by the consumers, and to get higher market price, at present gur manufacturers use Sodium Hydro-Sulphite (NaHSO_3) which is locally known as Hydrose. The chemical composition of gur and its quality depends on varietal characteristics. The characteristics of a variety for good quality gur making are softness, low fibre % cane, medium stalk diameter, bright colour of gur, easily clarifiable juice, low mineral content and high sucrose with low invert sugars. The varieties suitable for gur making are found to be equally good for sugar production. However, a variety suitable for sugar production may not be equally suitable for gur making (Singh *et al.* 1975). Considering the above varietal characters a trial was conducted to screen sugarcane varieties having above mentioned characteristics suitable for good quality gur manufacturing.

Eight sugarcane varieties including two old varieties such as Isd-16, Isd-17, Isd-18, Isd-19, Isd-20, Isd-21, Q-69 and Co. 527 were taken for the trial. Direct cane analysis were done using Wet Disintegrator and Saccharimeter. The whole canes were analysed for moisture % cane, Brix % cane, fibre % cane, pol % cane, purity and reducing sugars % cane. Reducing sugars content was determined by Lane and Eynon Method (1979). Gur was prepared from the juice extracted immediately after harvest by open pan boiling method.

Results of direct analysis of cane have been shown in the Figure 1. It is seen from the figure that minimum fibre % cane was found in Q-69 followed by Co. 527, Isd-17 and Isd-19. Higher pol % cane, Brix % cane and lower reducing sugars were also found in Q-69, Isd-16, Isd-17 and Co. 527. The recovery of gur has also been found higher in Q-69 followed by Co. 527, Isd-17, Isd-19 and Isd-16 (Figure 2). Similar findings were reported elsewhere (Rao *et al.*, 1983). The quality of gur is considered by its sucrose content, reducing sugars, colour etc. (Gopal and Chiranjivi, 1959). Though the old varieties Q-69 and Co. 527 have degenerated and cane yield reduced due to diseases and insect pests infestation but because of potential suitable characteristics for gur manufacturing these two old varieties are still under cultivation in non-mill zones. These old varieties might be replaced by SRTI bred and released varieties Isd-16 and Isd-17 having similar

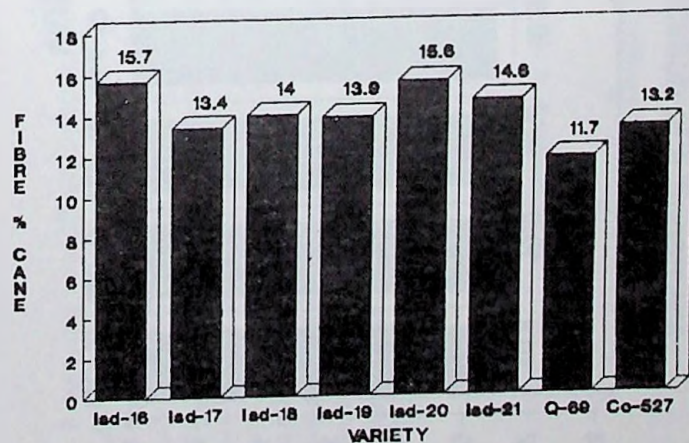
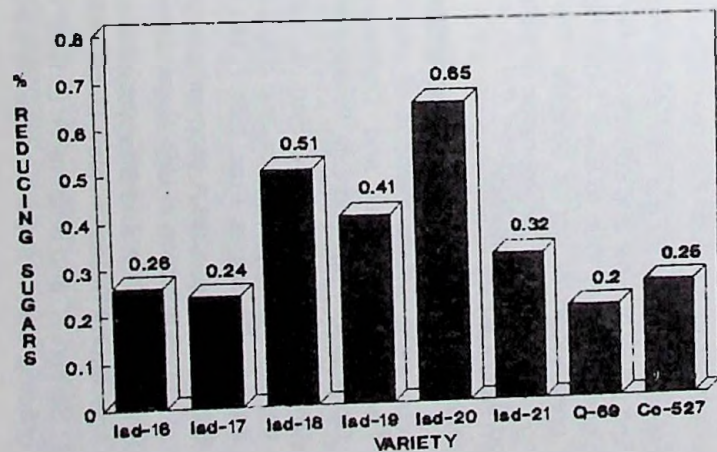
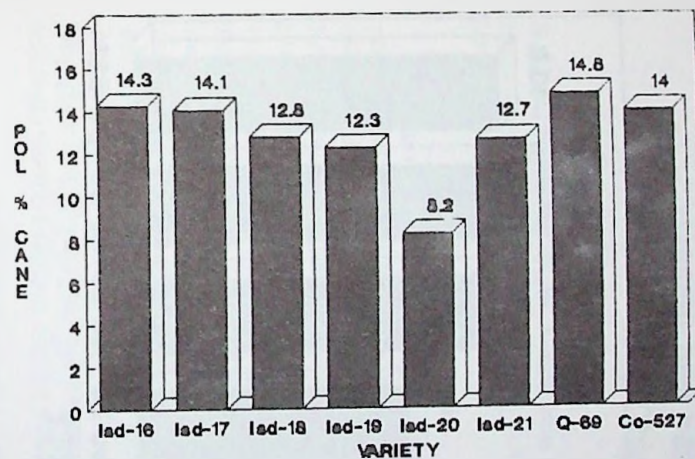
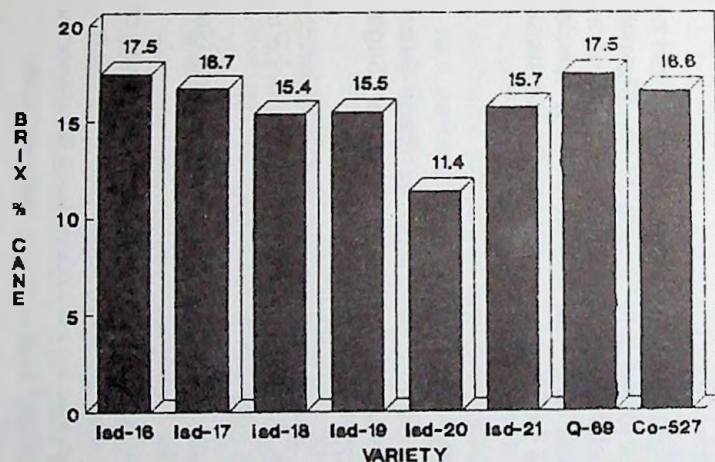


Figure 1. Direct chemical analysis of sugarcane varieties.

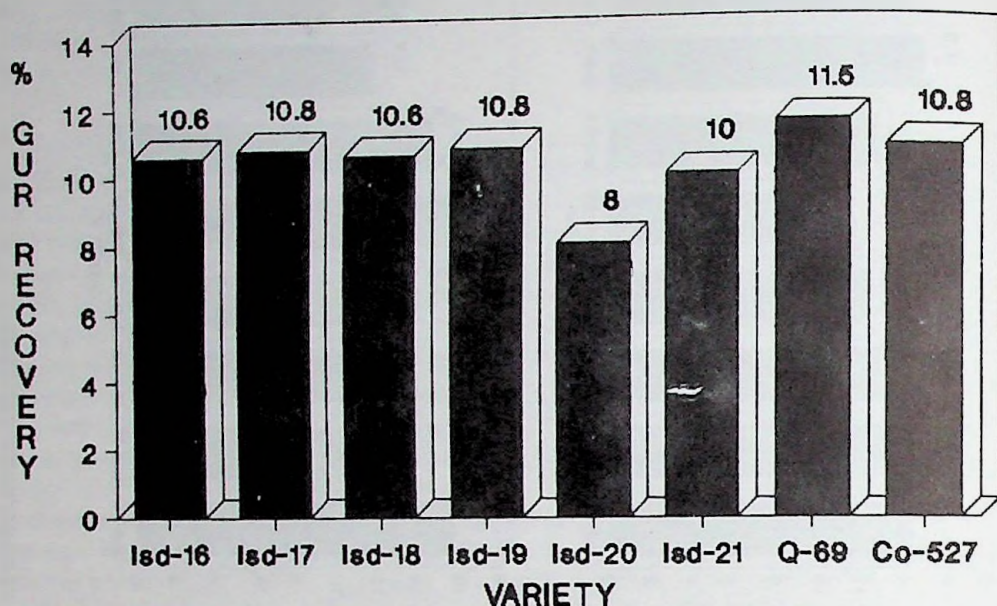


Figure 2. Gur recovery of different sugarcane varieties.

characteristics suitable for gur manufacturing. Higher extraction of juice is possible by diesel and power crusher and country crusher due to less fibre % cane which ultimately gives higher gur yield. Due to lower reducing sugars level, higher recovery as well as longer preservation of gur is possible. Therefore, this trial suggests for a special breeding programme for incorporation of suitable varietal characters mentioned above for good quality gur production.

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