Cereal based alcohol production is more beneficial

In the last few years every possible method is being explored for preparing human consumable items from natural sources. Interest in the manufacture of ethyl alcohol from cereals and other agricultural raw materials has developed, particularly in U.S.A. Keeping the demand and supply in mind several improvements in fermentation and distillation process have been done. A modern process utilizing the cereal route has been successfully adopted by some wineries in India to get good quality ethyl alcohol.

The modern technology allows many raw materials such as, starch containing grains like rice, wheat, barley, sorghum, corn, *bajra* etc and tubers like tapioca, beetroots and vegetables like potato, sweetpotato and minor products eg. *mahuwa* flowers can be either used singly or in any other combination of choice depending upon abundant availability of raw materials in a particular region. This freedom for the choice of raw material lends popularity, acceptability and utility to this process.

In this process sulphuric acid is added in mash as an antiseptic to prevent fermentation spoilage and calcium hydroxide and sodium hydroxide are added for ensuring presence of nitrogen in fermentation mash. Small amount of antifoaming agent is used for froth stabilization. Aromatic flavours can also be added to potable alcohol.

Seeing the utilities, manpower, environmental friendly manufacturing process and production cost, etc it is concluded that prospects for cereals based alcohol production are many times better than the plants based on conventional technology [Sharma, *Sci Tech Entrepreneur*, 2000, **8**(1), 16].

Preparing Muscadine Vinegar in short time

Muscadine grapes (***Vitis rotundifolia* Mich.**) are native to the South eastern United States. Fruits are harvested, crushed and pressed to yield juice which is consumed as such or used to prepare other products like jelly and wine. The wine is sometimes converted into a fruity vinegar by letting it stand (open vat) for months. Currently fruit flavoured vinegars have become extremely popular therefore its supply has to be maintained. The traditional method being time consuming, Food Technologists at Mississippi State University have developed a laboratory constructed trickle generator to hasten the process.

In this method, berries were mixed with 100 ppm (w/w) potassium hydrogen phosphate prior to crushing. The obtained juice (17° Brix, pH 3.21) is fermented to an ethanol content of 8.1% using *Saccharomyces bayanus*. The resulting wine is used to produce vinegar by trickle vinegar generator. The generator is made of autoclavable PVC packed with sterilized oak wood chips. The chips are inoculated with *Acetobactor aceti* subsp. *aceti* and the wine is passed through the reactor at a rate of 40 ml/h with a cycle of 12 hours. Thus utilizing this method vinegar with an acetic acid level of 3.8% can be prepared in less than one week compared to submerged method which can take months.. Through this process vinegar can also be made from by-products of different fruit processes such as waste pineapple juice, watermelon juice, apples and overripe bananas. [Anderson *et al, Small Fruits Review*, 2000, **1**(2), 35].

New fruit Drink from **neglected fruit**

Monkey Jack (Hindi-*Barhal*), ***Artocarpus lakoocha* Roxb.** is an excellent but neglected fruit. It can be processed into high-valued beverages like RTS drink, nectar and squash. This fruit holds promise to processing industry and growers as well.

The fruits cultivated in northern India, ripen in July-August. About 200-300 fruits are born on each tree. Pulp colour of a ripe fruit is light yellow or orange, TSS 17-21° Brix, acidity 0.70-1.14% (citric acid).

Department of Food Technology, Narendra Deva University of Agriculture & Technology, Faizabad, Uttar Pradesh, prepared Ready -To- Serve beverage which contains 10% each of juice, TSS and 0.3% acidity. Syrup prepared by boiling sugar (900g) in water (8,100 ml) with citric acid (25 g) followed by filtering and cooling is mixed with juice (1000 ml). Sulphur dioxide is added at a level of 100 ppm. This is bottled and crown corked. Pasteurization is done at 80-82° C for 25-30 minutes. It is used as such without any dilution. Nectar and squash can also be prepared. These products were highly appreciated by consumers. Thus this neglected fruit holds promise for a bright commercial future [Singh *et al, Indian Hort*, 2000, **45**(3), 6].