

THE ROLE OF WOODFORDIA FRUTICOSA (LINN) (LYTHRACEAE)  
FLOWERS IN THE PRODUCTION OF VASAKARISHTAYA  
A FERMENTED AYURVEDIC PRODUCT

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Fermented drugs known as "Arishta" and "Asawa" are commonly used in the treatment of many diseases especially in the convalescences stage. A preparation used in the treatment of bronchial diseases Vasakarishtya is produced by fermenting for 30 days a concentrated decoction of Adathoda vasica root bark to which sugar (40%) and small amount of other dried plant materials (kalka) have been added. The fermentation is set off by the addition of the dried flowers of Woodfordia fruticosa to the fermentation vessel.

We monitored a 30 l fermentation by periodically withdrawing 10 ml of samples and measuring its pH, alcohol (GC) and sugar (HPLC) contents. (Fig.1) The results with those of model experiments help to clarify the role played by Woodfordia fruticosa as a fermentation catalyst.

On addition of W.fruticosa flowers there is rapid lowering of pH and an increase in the rate of inversion of sucrose. The lowering of pH is due to the high gallic acid content W.fruticosa. However model experiments show quite clearly that gallic acid by itself is unable to invert sucrose. The inversion of sugar is enzymatic as shown by the fact that autoclaved W.fruticosa flowers are not capable of increasing the rate of inversion of a pure sucrose solution. Dried W.fruticosa flowers exhibit peroxidase activity indicating thereby that enzymes are not destroyed in the drying process. Experiments are underway to determine the source of enzymes i.e. as to whether they are from the microflora present in the flowers or are endogenous. The lowering of pH and the increase of osmotic pressure caused by the inversion of sucrose inhibit the growth of unwanted microorganisms. Cultures of the arishtaya showed the presence of Saccharomyces cereviceae and Schizosaccharomyces pombe. In practise, fungal growths are not observed in properly conducted arishtaya fermentations. Further it can be expected that gallic acid would function as an effective antioxidant.

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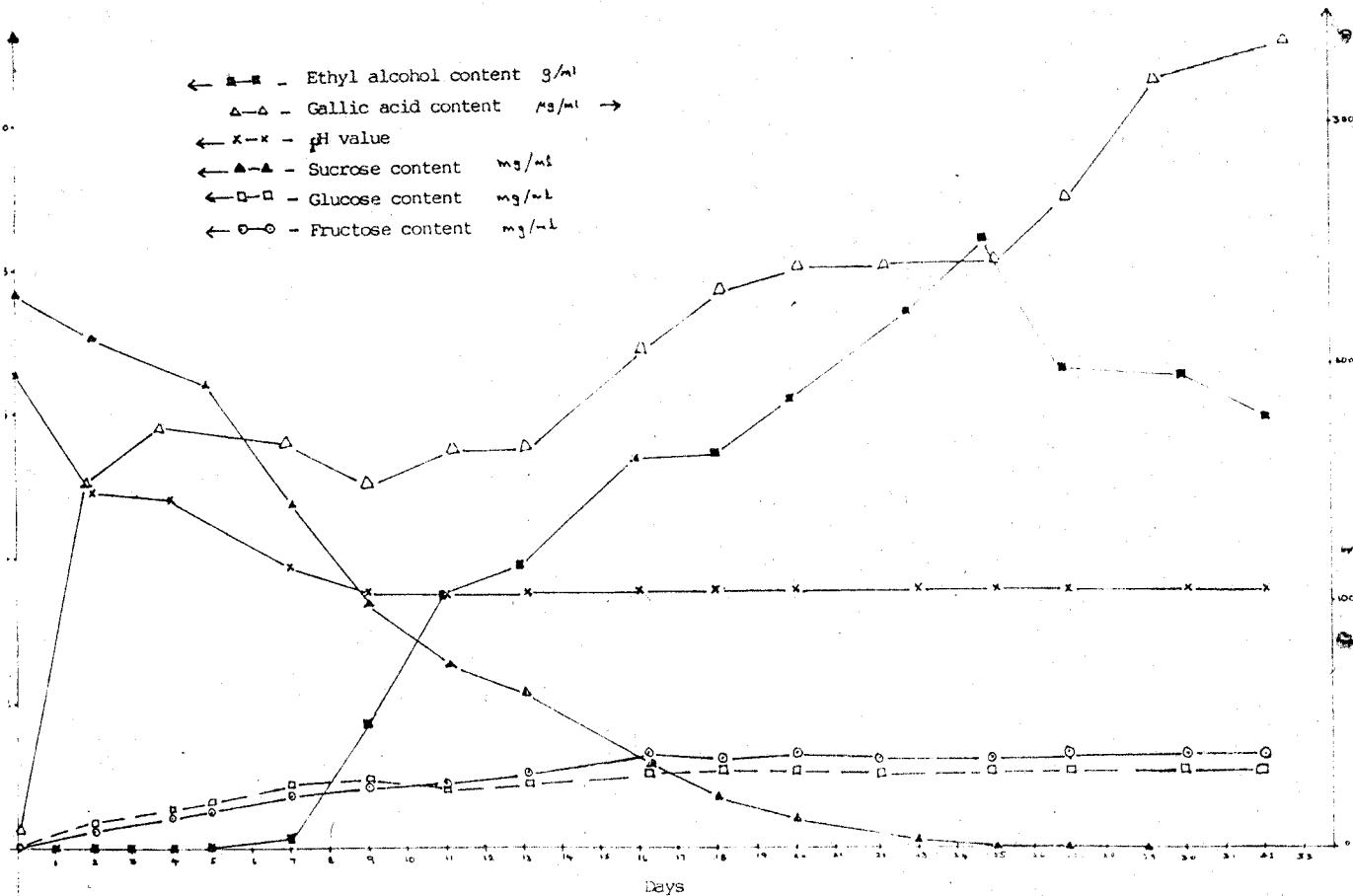


Fig. 1