ABSTRACT

The aim of the present study was to develop functional foods for appetite improvement, establish shelf life and create a scientific evidence for their functional benefits. The development of five appetizing foods was achieved by statistically designing the experiments using Design expert® software (version 8.0). The products developed were three ready-to-drink beverages namely, ginger (*Zingiber officinale*) beverage, ajowan (*Trachyspermum ammi*) beverage, and karpurvalli (*Coleus aromaticus*) beverage; a ready-to-eat appetiser called ajowan munch and a ready-to-reconstitute convenience mix called karpurvalli soup mix with 15, 20, 15, 20, 13 combinations and with responses of overall acceptability, acidity, TSS etc. The ingredient levels were optimized and the processing steps for each product were standardized. Beverages were processed by in-pack pasteurization at 95°C for 10 minutes while ajowan munch was prepared by dehydration and concentration technique. The karpurvalli soup mix was prepared by using dehydrated karpurvalli leaves produced by optimized processing method and further homogenously mixing with other dry ingredients. The optimization of dehydration condition is the first report on karpurvalli leaves. Volatiles of the stem, stalk and leaf and the catechins of the karpurvalli were reported for the first time. The beverages packed in PP bottles were found stable and acceptable for six months at ambient conditions based on chemical, microbiological and sensory evaluations. The heat treatment at 95°C for 2 minutes and 2-3Kgy irradiation were found beneficial in having better microbiological stability. However, due to increased reductions in functional principal components i.e. gingerol and carvacrol compared to that of control, normal processing method is preferable. Among the packaging materials, the PP pouch, PP bottle and glass bottle, PP bottles were found highly suitable for processing and storage of beverages. The
ajowan munch and karpurvalli soup mix had an established shelf life of eight and six months, respectively. Among the three beverages evaluated in animal studies, the appetizing effect was more for karpurvalli beverage followed by ginger and ajowan beverages. The appetizer administration reduced the plasma leptin levels as well as regular consumption increased the food consumption and weight gain in rats. In human studies, among the different concentration of karpurvalli beverage evaluated, the one with sensorily tolerable limits i.e. with 12% karpurvalli juice found more beneficial in terms of hormonal changes as well as subjective rating as compared to the beverages with 18 and 24% karpurvalli juice.