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Assessment of microwave blanching as a preparatory tool for home freezing of yellow squash

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Microwave blanching of fruits and vegetables has been identified as a process that retains nutrients better than conventional blanching methods (boiling water and steam). Only low wattage microwaves using selected vegetables have been investigated in the past. Further studies are necessary to determine the effect of today's higher wattage microwaves on the blanching of vegetables.

Yellow squash was blanched in covered containers for 3 min using: boiling water (BW), steam (ST), and 3 microwaves (1000watt-MW1, 1200watt-MW2, and 1300watt-MW3). Samples were ice-cooled, placed in freezer bags, and stored at -18 C for 6 months. Enzyme activity, physico/chemical, nutritional and sensory parameters were assessed during and following 6 months of frozen storage.

Peroxidase (POD) activity decreased from 2.77-4.03 units (unblanched) to 0.01-2.04 units (blanched). The MW3 treatment retained 96% Fe (170 mg/kg) and 93% K (2133 mg/kg), which was significantly better than any other blanch treatment. Ascorbic acid retention was highest (12.9 mg/100g) for the MW3 blanch treatment (87%). There was no significant ascorbic acid retention difference among the MW3 and ST treatments. Texture values were lowest for BW treatments (59-75 Newtons) due to increased cooking effect. There were no significant differences among the treatments for consumer preference.

The study indicated that the overall quality of MW (all 3 wattages) blanched yellow squash was as good as or superior to BW and ST methods. The availability of this and other such information to home preservers of fruits and vegetables could lead to a higher quality of products for consumption.