

Formulation of nutritionally superior and low cost cereal based soup mix powder using sprouted green gram and soya as major sources of protein

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This study was conducted to develop a nutritious instant soup mixture with cereals (red raw rice), legumes (Sprouted green gram and soya bean) and dehydrated vegetables (Pumpkins, Mushrooms, B-onions, Tomato, and Gotukola). Germination or malting of legumes improves the availability of minerals, reduce the anti-nutritional factors, enhances some of the vitamins and improves the overall nutritive values. Therefore malted (sprouted) green gram is an ideal source of protein rich material for blending with Soya, Rice and Vegetables to prepare a nutritive blend for use as a soup mix. Preliminary studies were conducted to select the best composition of vegetables and food grain sources in the soup mixture. Sensory evaluation was used to evaluate the quality parameters; color, aroma, taste, consistency and overall acceptability by 30 untrained panelists. Results were analyzed by using Minitab statistical software package to selected combinations.

The proximate chemical analysis was conducted for the best soup formula. The storage stability of the developed soup mixture in the package (PE/AL/PE) was evaluated in terms of water activity, moisture content, color changes and microbial quality at three weeks intervals for twelve weeks.

The data on rank sum difference test revealed that this soup mixture containing dehydrated powders of 50% vegetables, 40% food grain and 10% other vegetables (which includes 15% pumpkin, 15% Mushroom, 10% B-onion, 7% Tomato & 3% Gotukola, 15% red rice, 15% Sprouted green gram, 10% soya bean, and 3% curry leaves, 4% corn flour, 2% salt and 1% pepper) was the best among the four mixtures evaluated. The selected mixture had considerable amount of crude protein, crude fat, crude fiber, total ash and starch as of 19.44, 4.80, 14.04, 11.48 and 45.10% respectively. During the storage period of 12 weeks, the moisture content, water activity and color of the dried soup mixture have changed but not significant. The total

colony forming units (CFU) was below the recommended level. The ingredients cost for preparation of one cup of soup was found to be Rs.2.7