FORMULATION, OPTIMISATION AND EVALUATION OF UNIQUE HERBAL FUNCTIONAL MILK AS A SUPPLEMENT TO BOOST THE IMMUNITY OF COVID 19 PATIENTS

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ABSTRACT

More and more people are interested in an herbal or natural way of life and they are more interested in the preparation of food products enriched with nutrients from organic and natural ingredients. The present study aimed to develop functional milk – Herbal immunobooster milk for the management of COVID- 19 patients and to study its physicochemical and sensory qualities of the resultant product. The treatment details were TC (Control), T1 (2% immunobooster powder), T2 (4% immunobooster powder), T3 (6% immunobooster powder) and T4 (8% immunobooster powder)

The mean titratable acidity (percentage lactic acid) of herbal milk was ranged from 0.20 to 0.32 and pH ranged from 6.5 to 7.5. Analysis of variance ($p<0.01$) revealed a significant difference between control and treatments and within the treatments indicating that the addition of palm sugar will alter the titratable acidity of herbal milk.

The moisture (g%) percentage of herbal milk samples was 82.13, 82.00, 81.25, 80.18 and 81.87 for control and treatments T1, T2, T3, and T4 respectively. The results of the fat percentage of the samples ranged from 2.72 to 3.41. Analysis of the data revealed no significant difference in the moisture and fat percentage of control and treatment herbal milk samples. There is a gradual decrease in moisture level as the treatment level proceeds depends on several factors, which include type and quality of milk, heat treatment and quantity of herbal powder included.

The mean ± SE total solids (g) percentage of herbal milk samples were 17.91, 18.09, 18.83, 19.18 and 19.86 for control and treatments T1, T2, T3 and T4 respectively. The SNF and ash percentage ranged from 15.11 to 15.88 and 0.73 to 1.05mg% respectively. Analysis of data revealed no significant difference between control and

treatments and within treatments. There is a gradual increase in the percentage of the total solids of treatment samples noticed as the incorporation of sweetening agents like palm sugar and immunobooster powder in different treatments.

The mean viscosity (cP/sec) of herbal milk samples were 2.42, 3.09, 3.21, 3.38 and 3.47 and the mean energy value (cal/g) of herbal milk samples were 6336.83, 6330.33, 6222.17, 6215.17 and 6211.50 for control and treatments T1, T2, T3 and T4 respectively. Analysis of data revealed a significant difference (P <0.01) between control and treatments and within the treatments indicating that the addition of herbal immunobooster powder at different levels produces a significant change in the viscosity of the product and energy due to an increase in the density of the product and low energy value of herbal immunobooster powder.

In microbial quality analysis of herbal milk with immunobooster powder samples, the standard plate count, coliform count and yeast and mould count are within the permissible level of BIS indicating that addition of palm sugar at different level does not produces any significant difference and the samples were prepared in hygienic condition.

The organoleptic quality revealed that 4 percent incorporation of immunobooster powder (T2) scored better result than control and other treatments (T3 and T4). Consumer preferences for the herbal incorporated with 4 percent incorporation of immunobooster powder samples are highly acceptable. In the economics of production, the cost of the control sample was comparatively lower (Rs.92 per liter) as compared to treatments T1, T2, T3 and T4 samples were rupees 96, 100, 104 and 108 per liter respectively. The production costs were increased in the treatment samples because of the increase in the price of immunobooster powder.

BIOGRAPHY

Dr. S.P. Malarkannan, basically a Veterinarian obtained his bachelor degree in Veterinary Science from Tamilnadu Veterinary and Animal Sciences University, Chennai in 2014. He completed his Master Degree in dairy science from the Kerala Agricultural University and a doctoral degree from Gandhigram Rural University, Dindigul, Tamil Nadu, India. He is presently working as Assistant Professor, in the Department of Rural Development Science, Arul Anandar College, Karumathur, India affiliated with Madurai Kamaraj University. He has more than 25 national and International publications and good knowledge of ethno veterinary medicines and management of dairy farms.

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