

***MANUFACTURE OF YOGHURT FROM COW MILK FORTIFIED WITH TRYPSIN MODIFIED WHEY PROTEINS***

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***ABSTRACT:***

Two types of whey protein concentrates (WPC) heat precipitated salted sweet whey (SWPC) ultra filtrated acid whey (FWPC) were hydrolyzed with trypsin at the rate of 0.4 gm / 100 gm protein. Nine treatments of yoghurt were made to study the effect of replacing non-fat dry milk with trypsinized WPC on the quality of yoghurt. Replacement of non-fat dry milk with hydrolyzed WPC caused significant ( $p < 0.05$ ) increase total protein, ash, non-protein nitrogen and diacetyl (DA) and acetyl methyl carbinol (AMC) contents, curd tension and scores of organoleptic properties, while syneresis decreased. On the other hand, fortification of cow milk with trypsinized whey protein concentrates (mFWPC and mSWPC) did not affect significantly the total solids content, acidity and pH values of the resultant yoghurt treatments. The type of WPC did not have significant effect on total solids, total protein, ash and non-protein nitrogen contents, while mFWPC was effectively increased the DA + AMC, scores of organoleptic properties and decrease the syneresis of whey as compared to yoghurt treated with mSWPC. Total solids, total protein, non-protein nitrogen and ash content did not change significantly during the storage period; however, the acidity increased and pH value decreased as the storage period proceeded. DA and AMC increased, while whey syneresis decreased up to the 6th day of storage, thereafter DA + AMC decreased, whilst whey syneresis increased up to the end of storage period. It could be replace non-fat dry milk with mFWPC up to 75% and mSWPC up to 50% without detrimental effects on yoghurt quality made from cow milk.

***Key words:*** : Cow milk, yoghurt fortification, modified whey protein concentrate, non-fat dry milk.

***MANUFACTURE OF LOW FAT PREBIOTIC YOGHURT***

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***ABSTRACT:***

Effect of replacing milk fat with inulin on the chemical, rheological, microbiological and sensory properties of probiotic yoghurt was studied. Control yoghurt was made from buffalo's milk that standardized to 4.0% fat. Two treatments were made from buffalo's milk standardized to 3.0% fat and inulin was added to them at the rate of 1.0 and 0.5%, respectively. Another two treatments were made from buffalo's milk standardized to 2.0% fat and inulin was added to them at the rate of 2.0 and 1.0% in the same order. The other two treatments were made from buffalo's milk standardized to 1.0% fat and inulin was added to them at the rate of 3.0 and 1.5% successively. Replacement of milk fat with the same amount of inulin did not affect significantly ( $p > 0.05$ ) the total solids, total protein and ash content of low fat probiotic yoghurt, while total solids content decreased when the amount of inulin was decreased. Replacement of milk fat with inulin caused a significant ( $p < 0.05$ ) increase in total carbohydrate content, diacetyl, acetyl methyl carbinol, curd tension and acidity, while total energy and whey syneresis decreased of the resultant yoghurt treatments. Those yoghurt treatments made from 3.0 and 2.0% fat milk with adding 1.0% inulin were the most acceptable samples. Also, adding inulin stimulate the growth of total bacterial lactobacilli and streptococci. On the other hand, total solids, total protein, fat, ash and carbohydrate contents and calorific values did not change in yoghurt samples during storage, at  $6 \pm 1^\circ\text{C}$  for 12 days, while titratable acidity and total volatile fatty acids increased at the same conditions. Whey syneresis of all yoghurt treatments decreased until the 6th day of storage then increased later on. Diacetyl and acetyl methyl carbinol increased up to the 6th day of storage then decreased as storage period progressed. Scores of sensory evaluation were almost stable during the first 6 days of storage period then decreased slightly until the end of storage period. Total bacterial, lactobacilli and streptococci counts of all yoghurt treatments increased up to the 3rd day of storage period then decreased until the end of storage period.

***Key words:*** Low fat, yoghurt, probiotic, inulin, fat replacers.

