

UF α -Tallaga Cheese Quality Made by Incorporating Bifidobacteria and Different Salting Rates

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ABSTRACT:

: Nine UF α -Tallaga cheese treatments were made, to three of them salt was added at the rate of 3%, one of them was served as control and to the other two Bif. bifidum ATCC 29521 and Bif. longum BL-04 were added individually. Another three treatments were made as described above except salt was added at the rate of 4%. The other 3 cheese treatments were made as above except salt was added at the rate of 5.0%. Obtained results showed that, increasing salting rate from 3 to 5 caused a significant decrease in ripening indices [water soluble nitrogen (WSN), Shilovich number and total volatile fatty acids (TVFA)], also total scores of sensory evaluation, bifidobacterial counts while increased the salt, ash content and pH value. Moreover, cheese treatments made by adding 3% salt were not significantly different from corresponding cheese treatments made by adding 4% salt. Incorporation of bifidobacteria increased the ripening indices, total score of organoleptic evaluation, acidity, but did not affect significantly fat, total protein, ash and salt contents of cheese. Cheese treatments made by incorporating Bif. longum were not significantly different from corresponding cheese treatments made by incorporating Bif. bifidum. Total counts of bifidobacteria increased up to the 1st week then decreased till to the end of storage period. Cheese treatments those made by adding 4% salt and incorporating bifidobacteria were the most acceptable cheese and even after storage for 4 weeks contained bifidobacterial counts higher than that should be present to achieve their health benefits.

Key words: UF α -Tallaga cheese, bifidobacteria, probiotic bacteria, salting rate.

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.

EFFECT OF REPLACING SODIUM CHLORIDE WITH POTASSIUM CHLORIDE ON GOUDA CHEESE QUALITY

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ABSTRACT:

Five treatments of Gouda cheese were made to study the effect of replacing sodium chloride (NaCl) with potassium chloride (KCl) in the brine used in salting Gouda cheese. NaCl was replaced with KCl at the rate of 0.0, 20, 40, 60 and 80%. Replacement of NaCl with KCl caused a significant increase of moisture, acidity, soluble nitrogen, total volatile fatty acids, potassium content, while decreased fat, total nitrogen and sodium content. Replacement of NaCl with KCl up to 40% increased the total scores of organoleptic properties. Moisture content and pH values of all cheese treatments decreased while fat, total nitrogen, soluble nitrogen, total volatile fatty acids, acidity contents and scores of organoleptic properties increased as ripening period progressed.

Key words: Gouda cheese, low sodium, potassium, brine.

MANUFACTURE OF YOGHURT FROM COW'S MILK FORTIFIED WITH BUTTER MILK

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ABSTRACT:

The effect of replacing skim milk powder that used to fortify cow's milk with spray dried butter milk on the quality of yoghurt was studied. Control yoghurt was made from 3.0% fat cow's milk fortified with 3% skim milk powder. Four treatments were made from that milk, but skim milk powder was replaced by butter milk at the rate of 25, 50, 75 and 100%. Replacement of skim milk powder with butter milk did not affect significantly total solids, total protein, ash contents, titratable acidity, viscosity and curd tension of the resultant yoghurt treatments. Whey syneresis decreased, while diacetyl and acetyl methyl carbinol (DA + AMC) increased by replacing skim milk powder with butter milk and this increase or decrease was proportional to the rate of replacement. Replacement of skim milk powder with butter milk up to 50% did not affect the scores of organoleptic properties, while increasing the replacement rate above that decreased those scores. Scores of organoleptic properties did not change significantly during the first 6 days of storage, then decreased slightly up to the end of storage period. Total solids, total protein, fat, ash contents did not change significantly during storage, while titratable acidity increased. Diacetyl and acetyl methyl carbinol increased as storage period proceeded and reach their maximum values at the sixth day then decreased up to the end of storage period. Whey syneresis decreased during the first 6 days of storage period, then increased up to the end of storage period. Total bacterial, lactobacilli and streptococci counts increased during the first 3 days of storage period, then decreased up to the end of storage period.

Key words: Yoghurt, cow's milk, skim milk powder, butter milk.

EFFECT OF IRRADIATION TIME AND DOSE ON RIPENING OF RAS CHEESE WITH SPECIAL REFERENCE TO CONTROL SURFACE MOULD GROWTH

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ABSTRACT:

: Effects of irradiation dose and time during ripening period of Ras cheese on its quality were studied. Ras cheese was divided into 7 groups each group contains 4 wheels. Cheese groups 2, 3, 4, 5, 6 and 7 were irradiated immediately after manufacture and after 30, 60, 90, 120, 150 days respectively, while the first group was served as control. Ras cheese wheels of each group was irradiated at 2, 3, 4 and 5 kGy. Irradiation caused significant ($P < 0.05$) increase, after irradiation immediately (fresh samples), in water soluble nitrogen, Shilovich ripening index, formol ripening index, soluble tyrosine and tryptophan. Irradiation treatment caused significant ($P < 0.05$) decrease in water soluble nitrogen, Shilovich ripening index, formol index, soluble tyrosine and tryptophan, total volatile fatty acids, scores of organoleptic properties, total bacterial, lipolytic and proteolytic bacterial counts during ripening period of Ras cheese as compared with control cheese, while did not affect significantly ($P > 0.05$) the fat and total nitrogen contents. These decreases in ripening indices were proportional to the irradiation dose. Ras cheese treated with 4 and 5 kGy exhibited the lowest counts of proteolytic and lipolytic bacteria and subsequently the lowest ripening indices values and the lowest score of sensory evaluation. Irradiation cheese with 4 and 5 kGy were sufficient to inhibit the growth of mould and yeast on cheese especially when were applied after making cheese (second group) and after 30 days from making cheese (third group). All ripening indices and scores of organoleptic properties of all cheese treatments increased during ripening period, while fat and total nitrogen on dry basis did not changed significantly.

Key words: Ras cheese, ripening period, Gamma irradiation, ripening indices.