Study of chemical and microbial changes of Probiotic monterey cheese

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Summary

Probiotics bacteria which including *Lactobacillus acidophilus* ,*Bifidobacterium longum* were added (10^{11} cfu/ml) during Monterey cheese manufacturing after the reactivation and the results obtained were:

1- Decreasing of moisture content for Monterey cheese manufactured by adding the mixed starter Probiotic after 42 days of ripening, reaching (38.96)% comparing with the other samples.

2- Increasing of protein ratio while using the mixed starter in manufacturing of Monterey cheese comparing with control Monterey cheese and Monterey cheese manufactured by adding the single starter, reaching after 42 days of ripening to (23.41, 23.78 and 23.64) % respectively, as well as increasing of soluble nitrogen ratio in Monterey cheese manufactured by adding the mixed starter comparing with the other cheeses during the progress of ripening period to reach (0.875) after 42 days.

3- Fat ratio increased in cheese samples, the higher increase was at the end of ripening period after 42 days in Monterey cheeses manufactured by adding mixed starter reaching (30.45)% after comparing with (31.20 and 31.03)% for control and single starter manufactured cheeses respectively.

4- Salt ratio of Monterey cheese manufactured by adding mixed starter was (1.55) after 42 days of ripening comparing with control cheese and Monterey cheeses manufactured by adding the single starter which were (1.45 and 1.53) respectively.

5- Increasing of ash ratio for Monterey cheese manufactured by adding mixed starter reaching after 42 days of ripening (4.27)% comparing with control cheese and Monterey cheese manufactured by adding the single starter which were (4.16 and 4.20) % respectively.

6- Decreasing of the pH for the three Monterey cheese samples, the maximum decrease after 42 days of ripening was (5.20) when adding mixed starter, while for the control and single starter Monterey chesses the pH was (5.62 and 5.42) respectively. We notice increasing the titratable acidity of Monterey cheese manufactured by adding mixed starter reaching (0.92) comparing with control and single starter Monterey cheeses which reached (0.54 and 0.72) respectively after 42 days of ripening.

7- Increasing the numbers of proteolytic and lipolytic bacteria in the progress of ripening period until 28 days then started to reduce for all cheese samples.

8- Increasing the numbers of total bacteria for cheese samples during ripening period until 28 days then started to reduce tow logarithmic cycle during manufacturing period.

9- The result of electrophoresis showed that the average of not proteolyses for cheese manufacture using mixed starter was higher compared to others.

10- Monterey cheeses manufactured by adding mixed starter was best than control and single starter Monterey cheeses when conducting the organoleptic evaluation, especially for flavor.