

# **EFFECT OF CULTIVATION TEMPERATURES ON THE VIABILITY AND ACID PRODUCTION OF SOME STARTER CULTURES**

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## **ABSTRACT**

Pure and active cultures of two single and four mixed ones were subjected to study the effect of incubation temperatures namely 35,40 and 45°C on their viability and activity during their incubation for 2,4,6,8,12 and 16 hrs. The obtained results could be concluded as follows:

1. The rate of acidity increased slowly during the early stage of incubation, then more rapidly as the organisms increased in numbers and finally slowly as the maximum numbers of living organisms were reached.

2. *S. thermophilus* showed more active than *L. bulgaricus* in relation to acid production and viable counts.

3. The desirable level of acidity is 0.7% obtained by *L. bulgaricus* which have been incubated at 45°C after 16 hrs., while cultures incubated at 35 and 40°C were not able to produce this level during 16 hrs. Of incubation, while the acidity of *S. thermophilus* reached the recommended level after 12 hrs. Of incubation at 40°C. The mixed culture produce this level after 6 hrs at 40 and/or 45°C and after 12 hrs at 35°C. Thermophilic lactic cultures type yoghurt and type *Bifidobacterium* reached also this level of acidity after 4 hrs, of incubation at 40 and/or 45°C, while mixed culture (*Mircen*) after 12 hrs, at the same temperatures.

4. The most favourable incubation temperature for *S. thermophilus* is 40°C but 45 °C is recommended for *L. bulgaricus* and all cultures containing mixed strains. Incubation temperature of 40 and 45°C were recommended to permit good growth of starter organisms, while lower incubation temperature of 35°C is not practical in producing active starter which can be successfully used in making dairy products .

**Key words : starter culture type *Bifidobacterium*.**

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