

SWORN TRANSLATOR & INTERPRETER
OF THE ENGLISH LANGUAGE
Provincial Court – Gdańsk, Poland
JOANNA SZABLEWSKA
24 / 5 Akteona St, 80-299 Gdańsk, Poland
tel. (48) 602 608 618, tel. / fax (48 58) 554 52 38

Certified translation of the original document in Polish

Institute of Dairy Products Development	7 Oczapowskiego St, 10-957 Olsztyn
Faculty of Food Sciences	tel./fax (089) 523 34 02
The M. Oczapowski Academy of Agriculture and Technology in Olsztyn	Tax Id. No. 739-040-64-74 Account: BIG Bank Gdański SA II O/Olsztyn 11601931-66927000

Olsztyn, 17-02-99

Opinion Regarding the Influence of the Energy Stimulator Type ADR-4 on the Process of Milk Fermentation

The ADR-4 ceramic discs from ADR System Company of Gdańsk were used in the research.

The milk fermentation process was carried out using uncontaminated bacterial cultures that are used in the production of yoghurt and granulated cottage cheese. Natural and fruit flavoured yoghurt was produced. For the production of fruit yoghurt, prior to the fermentation process, 4% sugar was added to the milk. The milk fermentation was carried out in 2 litre beakers at the temperature of 43⁰C for yoghurt production and 30⁰C for cottage cheese production. All experiments were repeated three times.

Certified translation into English: page 1 of 2



Joanna Szablewska

Based on the test results, it was proven that the ADR-4 disc exerts an advantageous influence on the manufacture process of both natural yoghurt and cottage cheese. In the case of natural yoghurt, the correct pH value of the finished product was obtained already after 2.5 hours of fermentation, while the souring of the control milk took one hour longer.

The positive influence of the disc was also proven in the process of milk souring with milk fermentation bacteria used in the production of granulated cottage cheese. The souring of milk to adequate pH level at 30⁰C with the disc took 3 hours on average, and was 30 minutes faster in comparison with the control samples.

Based on the conducted experiments and the obtained results, we may verify that the ADR-4 energy stimulator accelerated the milk fermentation process.

It must be emphasised that the experiments were carried out on a laboratory scale and prior to recommending the ADR-4 stimulators to the manufacturers of fermented beverages and granulated cottages cheese, one needs to perform experiments on an industrial scale.

(-) illegible signature

Prof. Dr Hab. Władysław Chojnowski

The above has been faithful rendering into English of the contents of the document in Polish as presented to me for translation. In witness whereof I have set my hand and affixed my seal of office in the City of Gdańsk this 31 January, 2001.

Joanna Szablewska, translator & interpreter duly sworn by Provincial Court, Gdańsk.

Fee collected under the Regulation by the Minister of Justice of 25 August 1986

(Dz.U. No. 33/86, item 168, as amended).

Sign: JS / 2001

(2150 zn; 2 str)

