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Process for submerged cultivation of fungal strain *Rhizopus arrhizus* CNMN FD 03, producer of lipases

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Aim:

It consists in elaboration of a new process for submerged cultivation of *Rhizopus arrhizus* CNMN FD 03 mycelial fungal strain, producer of lipolytic enzymes, and can be used in the microbiological industry for obtaining of lipases with wide application, in the food industry, production, processing of vegetable fats and oils, in medicine as a therapeutic and diagnostic agent.

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Solution:

Using of metalocomplex tetra(isothiocyanate)cobaltat(II) of tris(dimethyl pyridine2,6-dicarboxylate)strontium, with the formula $[Sr(L)_3][Co(NCS)_4]$, as a stimulator of lipases synthesis in *Rhizopus arrhizus* CNMN FD 03.

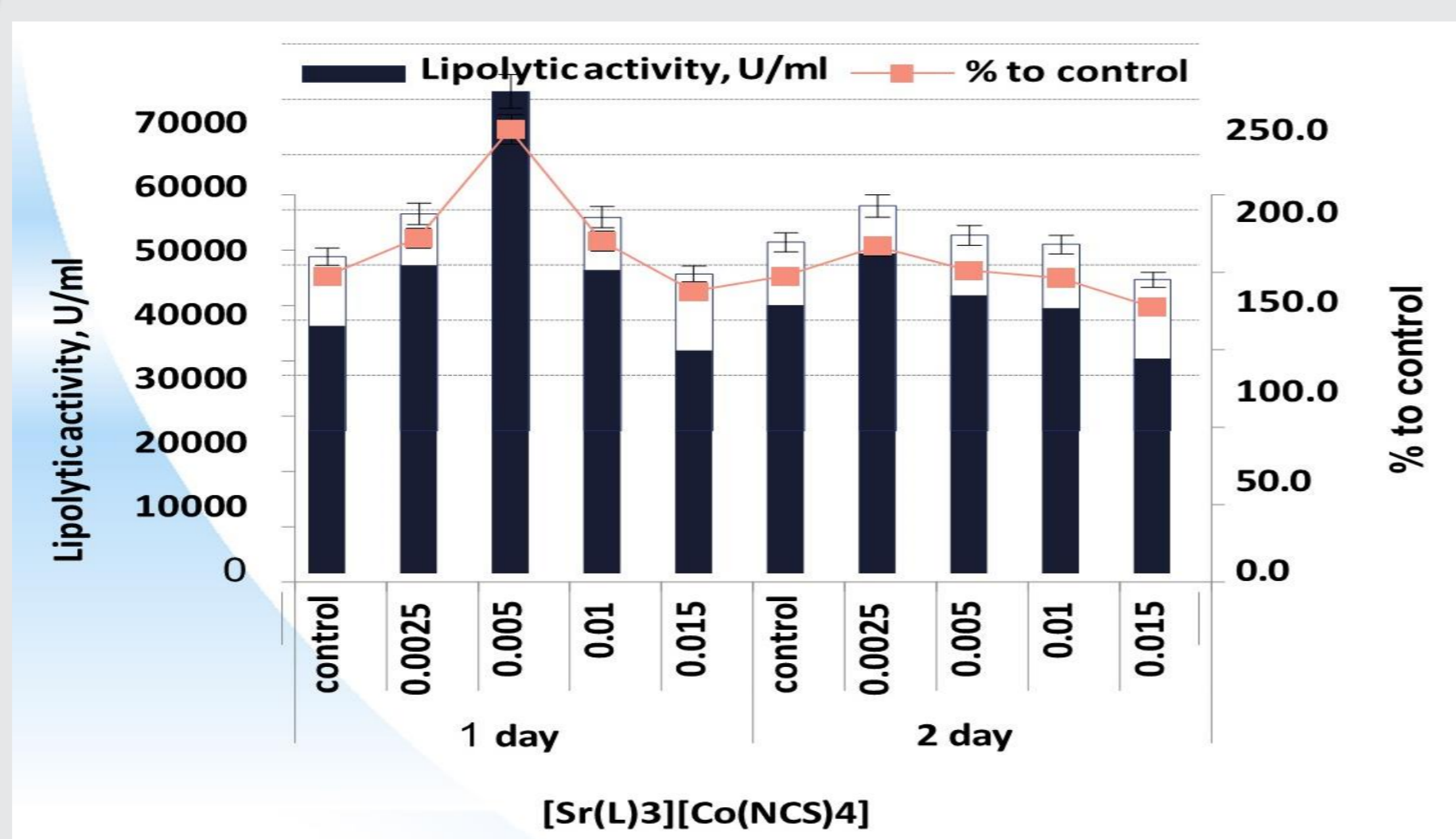
Advantages:

The addition of metalocomplex tetra(isothiocyanate)cobaltat(II) of tris(dimethyl pyridine2,6-dicarboxylate)strontium, with the formula $[Sr(L)_3][Co(NCS)_4]$ into the nutrient medium of fungal strain *Rhizopus arrhizus* CNMN FD 03 increases biosynthesis of lipases with 13,1... 79,5% compared to control (and by 12,6% compared to proxime), depending on the concentration, and reduces the producer's cycle of cultivation by 24 h. Thus, the highest values of lipase activity were found at the first day of growth, while in the control (without stimulator) the maxim of activity was revealed on the second day. The most effective concentration for enzyme production was 0,005 g/L.

Stage of implementation:

Laboratory prototype.

Essence:



The influence of different concentrations $[SrL_3][C(NCS)_4]$ on the lipolytic activity of the micromycete *Rhizopus arrhizus* CNMN FD 03.



Rhizopus arrhizus CNMN FD 03.

Method for submerged cultivation of micromycete *Rhizopus arrhizus* CNMN FD 03 – producer of lipases, which includes obtaining of spore suspension by washing with sterile distilled water the strain grown on malt-agar, inoculation (5% v/v) in liquid nutrient medium, addition of metalocomplex tetra(isothiocyanate)cobaltat(II) of tris(dimethyl pyridine-2,6-dicarboxylate)strontium, with the formula $[SrL_3][C(NCS)_4]$, used as biostimulator, in following concentrations (g/L): soybean flour - 35,0, $(NH_4)_2SO_4$ - 1,0, KH_2PO_4 - 5,0, $[SrL_3][Co(SCN)_4]$ 0,0025 - 0,015, cultivation under continuous stirring (180 - 200 rot/min), for 24 hours, at 28 - 30°C.

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