



Expoziția Internațională Specializată
INFOINVENT

Ediția a XVIII-a, 22-24 Noiembrie 2023



Method for obtaining of natural pigments from the cyanobacterial biomass.

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Aim:

The elaboration of the new antioxidant extracts based on pigments from *Arthrospira platensis* biomass, remaining from the production of the BioR remedy.



Solution:

The development of a new process for obtaining antioxidant extracts based on natural pigments from the *Arthrospira platensis* cyanobacteria biomass, with an increased content of β -carotene, lutein, chlorophyll a, antioxidant and enzymatic activities.

Avantajes:

- ✓ -Increase the quality of the final product;
- ✓ -Valorization of remaining biomass after industrial production;
- ✓ -Obtaining of the extracts with a wide spectrum of antioxidant action;
- ✓ -Presence in the extracts of the thermostable antioxidant superoxide dismutase enzyme;
- ✓ -Use of non-toxic solvents;

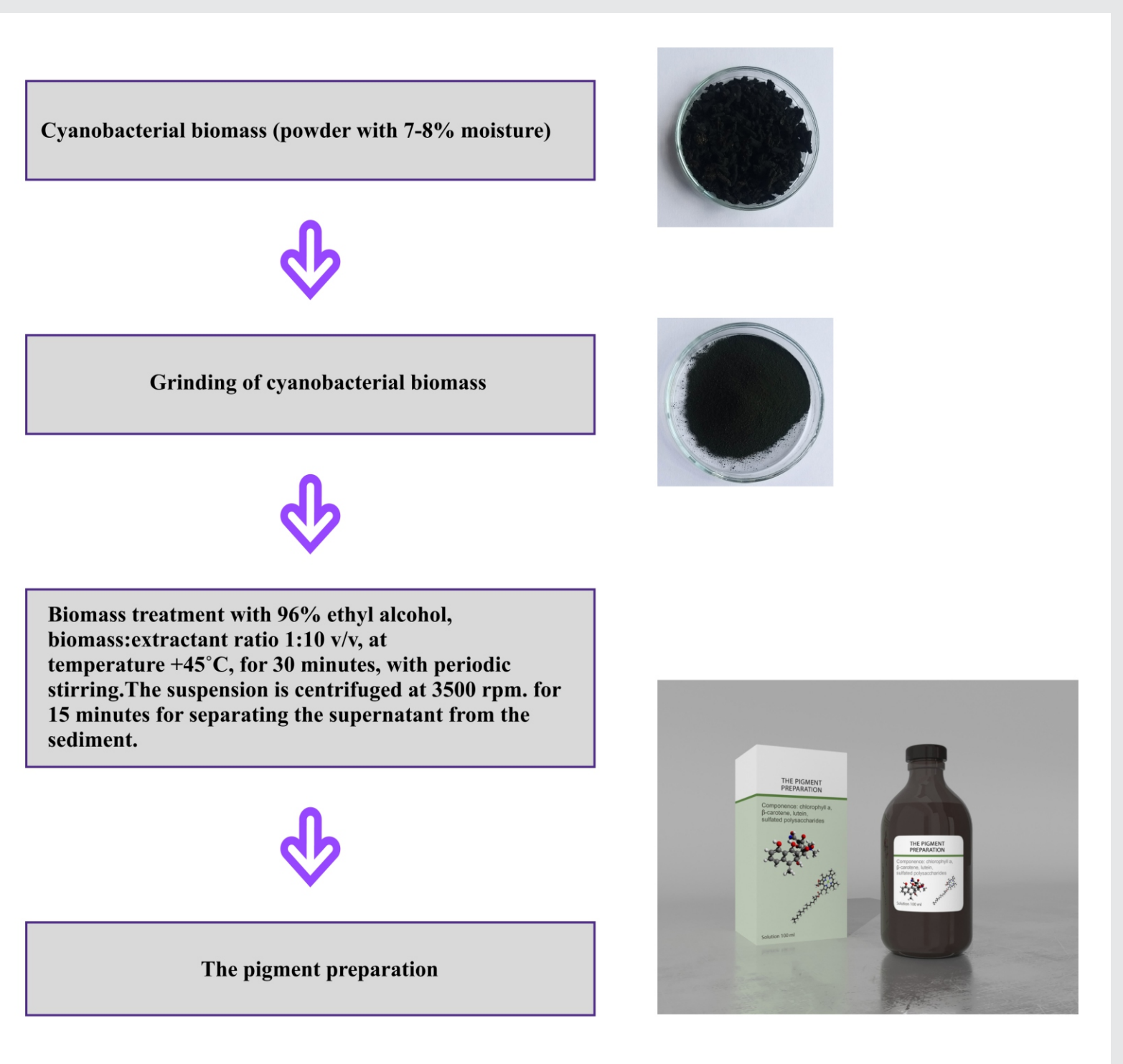
State of development:

The preparation is used in the research laboratories of the Scientific and Practical Institute of Biotechnology in Animal Husbandry and Veterinary Medicine.
The preparation is tested at the enterprises for swine and sheep production.

Essence:

THE ESSENCE of the invention is the proposal of a new process for obtaining of antioxidant extracts based on pigments from *Arthrospira platensis* biomass. The dried at the temperature of $+50\pm 5^\circ\text{C}$ remaining biomass was ground and then mixed with 96% ethyl alcohol in the 1:10 v/v ratio. The suspension is supposed to sonication (50 W) for 5 minutes or placed in a water bath at the temperature of $+45^\circ\text{C}$ for 30 minutes with periodic stirring. At the end of the process, the extract is separated from the biomass by centrifugation at 3500 rpm. for 5 minutes.

TECHNICAL RESULT consists in the obtaining of the extracts with a content of β -carotene of 0.645 ± 0.001 - 0.6875 ± 0.010 mg/100g. The extracts have catalase activity of 659.02 ± 13.20 - 720.14 ± 7.10 mmol/min/mg protein, superoxide dismutase activity of 107.52 ± 20 - 545.95 ± 1.16 U/mg protein and the concentrated extract contains 14.21 ± 0.020 mg/100g of β -carotene, 0.569 ± 0.001 mg/100g of lutein, 14.243 ± 0.066 mg/l of chlorophyll a, 442.5 ± 0.58 mg/l of sulfated polysaccharides, total antioxidant activity of $195.93\pm 9.15\%$ inhibition, catalase activity of 1235 ± 30.59 mmol/min./mg protein, superoxide dismutase activity of 618 ± 2.6 U/mg protein.



The results were obtained in the framework of the project 20.80009.5107.16. "New biologically active microbial preparations for increasing the reproductive and productive potential of animals of zootechnical interest", financed by NARD