TECHNOLOGY OF OBTAINING PHOSPHORIC ORGANIC-MINERAL FERTILIZERS

Description
The application of phosphoric organic-mineral fertilizers obtained with the use of the elaborated technology is important for preservation of biological and landscape diversity, maintenance of ecological stability of intrasoil processes and increase of soils fertility which are actual technological and agroecological problems. The elaborated way of obtaining phosphoric organic-mineral fertilizer includes machine work of coal and phosphate in planetary grinding mills, thus the finished product contains 5% of solvable phosphorus. The exit of humic acids on dry ash free substance makes 9.5%.

The application of complex fertilizers containing humin substances is considered as effective method, not only improving stability of soils to unfavorable agrogenic factors, but also enriching plants by elements of feed.

Production of phosphoric organic-mineral fertilizers on the basis of local raw materials (oxidated brown coals and apatite) will allow to meet the requirements of the regions of Siberia, Transbaikalia and Far East.

The technological circuit of obtaining phosphoric organic-mineral fertilizers from oxidated brown coals and apatite

Technical appraisal and economic benefits
Estimated reserves of oxidated brown coals of the Gusinoozersk deposit (100 km from Ulan-Ude) exceed 3 million ton. These coals are close to the surface and can be excavated. They are still not developed because of their small caloricity.
The elaborated technology of obtaining phosphoric organic-mineral fertilizers has a high economic efficiency because of usage of cheap natural raw material. Processing plants (crushers and grinding mills) located close to fields are underused.

The annual economic benefit of the intrusion of elaborated technology of obtaining of phosphoric organic-mineral fertilizers from oxidated brown coals can make up 12.5 million roubles. Payback time of the project is three years.

Application areas
Consumers of phosphoric organic-mineral fertilizers are agroindustrial complexes, gardening companies and other organizations of the region.

Development stage
The pilot tests of technology of obtaining phosphoric organic-mineral fertilizers are conducted on the basis of the Public Corporation "Stroikomplekt". As a result, the experimental batch of phosphoric organic-mineral fertilizer in quantity of 0.6 tons was produced. Field tests of obtained phosphoric organic-mineral fertilizers have shown increasing productivity of agricultures. The improvement of growth parameters in the initial stage of plants growth, which determines occurrence and development of valuable reproduction organs, steady against diseases, and also activating of biochemical processes in plants and soil. The act of pilot tests realization is obtained.

Patent situation
The patent is issued in Russian Federation (2004).

Commercial offers
The investment agreement for commercialization of the elaboration.

Estimated cost
The cost of phosphoric organic-mineral fertilizer will be within the limits average prices of similar mineral fertilizers with the organic components.

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