

Chilean nitrate and organic farming

Description

Chilean nitrate (synonym: sodium nitrate) is manufactured from sodium-rich rocks which occur in a number of locations, e.g. Chile. The mineral deposit 'caliche' which occurs in Chile contains 6-10 % NaNO_3 . To manufacture Chilean nitrate, caliche is mined and crushed, then NaNO_3 is extracted and crystallized. The end product Chilean nitrate contains ca. 98 % NaNO_3 . The nitrate ion, which acts as N source for crops, is identical to nitrate from synthetic mineral fertilizers.

Necessity and Alternatives

Within the framework of concepts of plant nutrition in organic farming (see separate document), N fertilizers are necessary to a certain extent. At present, there is a whole range of N fertilizers of plant and animal origin available, which are authorized for organic farming. Thus, there is no need to use nitrate fertilizers like Chilean nitrate.

Compatibility with concepts of plant nutrition in organic farming

The concepts of plant nutrition deviate fundamentally in conventional and organic farming. In conventional farming, the farmer supplies as many nutrients from external sources as the crops need. These are often supplied in mineral, easily soluble form.

By contrast, organic crops should primarily receive nutrients from the soil, which is regarded as the basis for crop production. Only in case of need, nutrients from external sources may be added. N is supplied in the form of organic substances, where most N is bound to organic molecules. Such compounds "feed" the soil (promote activity of soil micro-organisms), and become available for crops only after mineralization by microorganisms.

Chilean nitrate contains mainly mineral NaNO_3 , and its effect on crop growth is identical to mineral nitrate. Fertilization with Chilean nitrate therefore corresponds to the conventional concept of plant nutrition, but contradicts the organic concept of plant nutrition.

Current regulatory status

Currently, all of the major international standards for organic farming (Codex Alimentarius, GL 32 – 1999, Rev. 1 – 2001; IFOAM Basic Standards; European regulation 2092/91 EEC) do not allow the use of Chilean nitrate.

Recommendations

The use of Chilean nitrate corresponds to conventional fertilization with mineral nitrate and might compromise the concepts of organic plant nutrition as a whole. Because there are sufficient alternatives authorized, we recommend that the use of Chilean nitrate is not allowed in organic farming.