

Environmental performance of Brazilian nitrogen fertilizers

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It is internationally known that one of the main conditions to consolidate LCA use is the availability of a database. In this sense, some branches of the Brazilian society (government, industries and academy) are joining efforts to build the Brazilian database.

Agricultural products are among the main constituent elements of such a database due to the fact that they are important raw materials and due also to its regional characteristic.

Fertilizers represent the main input for agricultural production. Considering that nitrogen fertilizers compete with other petroleum derivatives, they play an important role in economy.

In this frame this paper presents the inventory of nitrogen fertilizers for Brazilian conditions, as a contribution to the construction of the Brazilian database.

In the modeling it is shown that 72% of the nitrogen used by Brazilian agriculture are imported (urea 49%; ammonium sulfate 21% and ammonium nitrate 8%). The 28% corresponding to Brazilian production are distributed among urea (55%), ammonium sulfate (7%) and ammonium nitrate (16%).

The paper describes the modeling of the Brazilian production of urea, ammonium sulfate and ammonium nitrate and identifies the sources of the imported fertilizers.

Ammonia production in Brazil is based in oil derivatives (refinery gas and asphaltic residue) and natural gas. All the ammonium sulfate Brazilian production is based in residual production.

Preliminary results of the inventory for the Brazilian production of petroleum derivatives, natural gas, ammonia, nitric acid, urea and ammonium nitrate are presented.