

A REVIEW ON USE OF NITRIFICATION INHIBITORS FOR INCREASING NITROGEN USE EFFICIENCY

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ABSTRACT

The rapid conversion of NH_4^+ to NO_3^- in soil results in the inefficient use of both soil N and applied N fertilizer. Nitrification inhibitors (NIs) are chemicals that inhibit or retard oxidation of ammonium to nitrate N. Use of NIs increases the efficiency of N-fertilizers, because nitrates formed on the oxidation of ammonium are easily lost by leaching under upland and denitrification under submerged soil conditions.

*A large number of chemicals are known to have nitrification inhibiting properties such as N-Serve, DCD, ATS etc. but there are also some non-synthetic ecofriendly NIs which have inhibiting properties viz., Neem cake, Tea waste etc. A newly developed non synthetic NIs that has been becoming popular is the Biological Nitrification Inhibitor (BNI). BNI capacity is widespread among the crop and pastures. A tropical pasture grass *Brachiaria humidicola* showed that BNIs can provide sufficient inhibitory activity soil nitrification and nitrous oxide emissions*

In theory, reducing nitrification under conditions where there is a high risk of N loss from NO_3^- leaching or denitrification, improved nitrogen use efficiency (NUE) .By applying NIs we can not only inhibit the nitrification process but can also increases the NUE, as well as can prevent different losses of nitrogen.

KEYWORDS: Nitrification Inhibitors, Biological Nitrification Inhibitors, Nutrient Use Efficiency

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