

## **Impact of use of fertilizers on soils and groundwater-a case study**

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Nitrogen is the basic building block of plant and animal proteins, and is essential to all forms of life. No doubt the Green Revolution has kept the aspirations of the growing population alive, but on the other hand it has led to the increased use of fertilizers, insecticides and herbicides to improve crop yields and to protect the vulnerable high yielding varieties.. This has resulted in excessive nitrogen in the ecosystem, causing a range of ill effects from reduced soil fertility to toxic algal blooms, and also elevated nitrate levels in groundwaters. Nitrate, a deadly poison, is not supposed to be present in drinking water as it could cause the blue baby syndrome. gastric cancer etc., The main culprit is the excessive use of fertilizers in agriculture, which increased by about four times between 1960 and 1995.

It is in this context, a field cum laboratory research work has been taken up in one of the southern districts of Karnataka, India. The study area forms a part of lateritic landscape with gentle slope receiving 744mm of rainfall annually. The area is covered predominately with red soil. The major types of rocks include granites and granitic gneisses. The results of the investigation showed that the deadly poisonous nitrates are found in groundwaters at concentrations much above the permissible limits. The migration of nitrates in the field was also studied by a novel approach. The full length paper unfolds the methodology followed, the results of the study and recommendations.