Click www.researchjournal.co.in/online/subdetail.html to purchase.



An Asian Journal of Soil Science

Vol. 6 No. 2 (December, 2011) : 159-163

Received : July, 2010; Revised : September, 2011; Accepted : October, 2011



Effect of application of spentwash on fertility status of soil

K.K. MATH, B.I. BIDARI, S.S. ANGADI, A.V. GADDI AND G. VILASITHA

SUMMARY

The waste management in the distilleries has always been a complex problem due to large volume of waste. This waste water produced by distilleries is generally discharged on land or running water. Distillery effluent contains high amount of organic matter, nitrogen, phosphorus, potassium, very high in biological oxygen demand (BOD) and chemical oxygen demand (COD) values. In addition to these nutrients, the effluent often contains substantial amounts of different organic, inorganic materials, growth parameters as well as toxic trace elements. Therefore, the effluent if utilized for crop production can prove to be a very good source of nutrients and reduce investment on fertilizer. Since the effluent contains fairly high salt load and toxic trace metals, along with high BOD and COD, the environmental implications due to its continuous use cannot be ruled out. An attempt has been made for one time controlled land application of treated bio-methanated spentwash as liquid manure for the crops based on their recommended dose of nitrogen.

Math, K.K., Bidari, B.I., Angadi, S.S., Gaddi, A.V. and Vilasitha, G. (2011). Effect of application of spentwash on fertility status of soil. *Asian J. Soil Sci.*, **6**(2): 159-163.

KEY WORDS : BOD, COD, Spentwash, Micronutrients

Distilleries, one of the most important agri-based industries in India produce ethyl alcohol from molasses for potable and industrial uses. They generate large volumes of foul smelling coloured waste water known as spentwash. For producing one litre of alcohol, 12-15 litres of spentwash is produced. Approximately 40 billion litres of spentwash is generated per annum from 285 distilleries in the country (Chhonkar *et al.*, 2000). Most of the distilleries have adopted methane generation method by utilizing spentwash produced and methane generated is used as a source of energy and for generating electricity.

Safe-disposal of bio-methanated spentwash is the major problem for most of the sugar industries because of high amount of organic load and total solids. It also contains a good amount of potassium with nitrogen, calcium and magnesium. Apart from these, it contains chlorides along with high BOD and COD.

The major concern of the sugar industries/distilleries/ environmentalist is the safe disposal and alternative use of bio-methanated spentwash. Regarding alternative uses, the study carried out at University of Agricultural Sciences, Bangalore and University of Agricultural Sciences, Dharwad proposed a protocol for one time controlled land application of treated bio-methanated spentwash as liquid manure for the crops based on their recommended dose of nitrogen.

Accordingly, the monitoring of bio-methanated spentwash use on agriculture soils of surrounding villages of Godavari sugar mills, Sameerwadi in Mudhol taluka of Bagalkot district was carried out with an objective to study the impact of spentwash application on soil fertility status.

EXPERIMENTAL METHODS

The consent villages namely, Hallur, Itnal, Teredal, Marakodi, Mughalkod, Munyal and Shivapur areas were surveyed by team of scientists of UAS, Dharwad for field application of bio-methanated spentwash. From survey, it was observed that soils are shallow with gravelly subsoil (weathered basalt parent material) having undulating topography. These soils are grouped under the order Alfisols and Inceptisols and soil texture varied from sandy

Address of the co-authors :

Address of the corresponding author :

B.I. BIDARI, Department of Soil Science and Agricultural Chemistry, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA Email : bidariacd@yahoo.com

K.K. MATH, S.S. ANGADI, A.V. GADDI AND G. VILASITHA, Department of Soil Science and Agricultural Chemistry, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA