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RESEARCH ARTICLE

Performance of distillery industry by-products on nutrient aspects and enhanced yield of guinea grass

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SUMMARY : Distillery spentwash is a nutrient rich liquid organic waste obtained from molasses based distillery industries after biomethanation process and it is the carrier of huge amounts of nutrients and organic matter. A field investigation was carried out during 2009 to 2010, at Research and Development Farm M/s. Bannari Amman Sugars Distillery Division Ltd, Ealur, Sathyamangalam, Erode to assess the performance of guinea grass by utilizing distillery industry byproducts *viz.*, distillery spentwash, biocompost and spentwash ash. Treatments involved were distillery spentwash @ 37.5 and 50 kilo litre per ha at full and split dose, biocompost @ 5.0 tonnes per ha and spentwash ash @ 400 kg per ha with recommended dose of fertilizers and the parameters were assessed at 12th, 26th, 39th and 52nd weeks after planting. Results of the field experiment revealed that the application of spentwash @ 50 kilo litre per ha at full dose with recommend dose of nitrogen and phosphorus increased the quality and nutrient parameters and green fodder yield over recommended dose of fertilizer.

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Key Words :
BDS, Biocompost, Spentwash ash, Soluble protein, Nutrients, Green fodder yield.

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Distilleries, one of the most important agro-based industries in India, produce alcohol from molasses. They generate large volume of foul smelling coloured wastewater known as spentwash. For production of each litre of alcohol, 12-15 litre of spentwash is produced. The raw spentwash is acidic in nature (pH < 4.0) and is generally characterized by high levels of biochemical oxygen demand and chemical oxygen demand. Alternatively, it is subjected to biomethanation treatment to decrease the content and the output is known as Biomethanated Distillery Spentwash (BDS). It contains nutrients, organic matter and plant growth promoters namely gibberellic acid and indole acetic acid. Biocompost is being prepared by using pressmud and distillery spentwash at the ratio of 1:2.5. It is being used a source of nutrients with a potential of increasing crop production on sustainable manner. The distillery spentwash contains about 1.2 per cent of potassium but this concentration is increased to the range between 10 and 18 per cent, when it is ignited into ash. Forage crops require high amount of N and K and are the better choice towards assessing the nutrient potential of spentwash since it is rich in K and N (Galavi *et al.*, 2009). Keeping this in view, the present study was made to assess the performance of distillery industry byproducts on growth and quality of guinea grass.

EXPERIMENTAL METHODOLOGY

Collection and characterization of distillery industry by-products :

The BDS was collected from the distillery unit of M/s. Bannari Amman Sugars Ltd., Periyapuliyur, Erode district, Tamil Nadu and analyzed for its physico-chemical properties by standard procedures (APHA, 1998). Biocompost is being prepared and marketed by M/s. Bannari Amman Sugars Ltd., Ealur and analyzed for its physico - chemical properties. Spentwash ash is being produced by M/s. Bannari Amman Sugars