

## **Studies on the impact of irrigation of distillery spentwash on the yields of S-30, S-36 and Vishwa (DD) mulberry plants**

**S. CHANDRAJU\*, GIRIJA NAGENDRASWAMY, C.S. CHIDAN KUMAR<sup>1</sup> AND R. NAGENDRASWAMY**

Department of Studies in Sugar Technology, Sir M. Visweswaraya Postgraduate Center, University of Mysore, Tubinakere, MANDYA (KARNATAKA) INDIA (Email : chandraju1@yahoo.com)

### **ABSTRACT**

Cultivation of some Mulberry plants was made by irrigation with distillery spentwash of different concentrations. The spentwash i.e., primary treated spentwash (PTSW), 50% and 33% spentwash were analyzed for their plant nutrients such as nitrogen, phosphorus, potassium and other physical and chemical characteristics. Experimental soil was tested for its chemical and physical parameters. Sets of mulberry plants were sowed in the prepared land and irrigated with raw water (RW), 50% and 33% spentwash. The influence of spentwash on the yields of different varieties of mulberry plants at their respective maturity was investigated. It was found that the yields of Mysore local, M-5 and MR-2 were high in 33% spentwash [the percentage yield was maximum in S-30 (74.79%) and minimum in Vishwa(DD) (52.0%) and moderate in S-36 (68.03%)] irrigation than raw water and 50% spentwash irrigations.

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**Key words :** Distillery spentwash, Yields, Mulberry plants, Seeds sets, Soil

### **INTRODUCTION**

Sericulture, or silk farming, is the rearing of silkworms *Bombyx mori* for the production of raw silk. Mulberry leaves, particularly those of the white mulberry, are ecologically important as the sole food source of the silkworm (*Bombyx mori*, named after the mulberry genus *Morus*), the pupa/cocoon of which is used to make silk. Silk is a way of life in India. Over thousands of years, it has become an inseparable part of Indian culture and tradition. No ritual is complete without silk being used as a wear in some form or the other. Silk is the undisputed queen of textiles over the centuries. Silk provides much needed work in several developing and labour rich countries. Sericulture is a cottage industry par excellence. It is one of the most labour intensive sectors of the Indian economy combining both agriculture and industry, which provides for means of livelihood to a large section of the population i.e. mulberry cultivator, co-operative rarer, silkworm seed producer, farmer-cum rarer, realer, twister, weaver, hand spinners of silk waste, traders etc. It is the only one cash crop in agriculture sector that gives returns within 30 days. This industry provides employment nearly to three five million people in our country. India is the second largest silk producer in the World after China. Germany is the largest consumer of Indian silk. The sericulture industry is land based as silk worm rearing

involves over 700,000 farm families and is concentrated in Karnataka, Tamilnadu and Andhra Pradesh (Southern states of India). Assam and West Bengal states are also involved to certain extent (<http://www.seri.ap.gov.in>). Retrieved on 03/02/2011).

Mulberry foliage is the only food for the silkworm (*Bombyx mori*) and is grown under varied climatic conditions ranging from temperate to tropical. Favourable soils for mulberry cultivation are sandy loam and clayey loam. Slightly acidic are ideally suitable. Mulberry leaf is a major economic component in sericulture, since the quality and quantity of leaf produced per unit area have a direct bearing on cocoon harvest. In India, most states have taken up sericulture as an important agro-industry with excellent results. The total area of mulberry in the country is around 2,82,244 ha. Though mulberry cultivation is practiced in various climates, the major area is in the tropical zone covering Karnataka, Andhra Pradesh and Tamil Nadu states, with about 90 per cent. Area under mulberry in Karnataka is 166000ha.

Molasses (one of the important byproducts of sugar industry) is the chief source for the production of ethanol in distilleries by fermentation method. About 08 (eight) litres of wastewater is generated for every litre of ethanol production in distilleries, known as raw spentwash (RSW), which is characterized by high biological oxygen demand (BOD: 5000-8000mg/l) and chemical oxygen demand

\* Author for correspondence.

<sup>1</sup>Department of Chemistry, Bharathi College, Bharathi Nagar, MANDYA (KARNATAKA) INDIA