

## **Growing Sorghum Varieties with Potential of Fodder and Biofuel Crops, with Potential of Two Harvest in One Year**

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**Abstract :** Growing Sorghum varieties, with the potential of the animal food source, by using the treated wastewater from High Rate Algae Ponds (HRAPs) is an attractive subject. For the first time, in South Australia, Sorghum Earthnote variety one (SE1) has been grown using the wastewater from HRAPs. In this study, after the first harvest, the roots left in the soil. After a short period of time, sorghum started to regrow again, which can increase the value of planting sorghum by using the wastewater. This study demonstrates the higher amount of green biomass with the potential of animal food source after the second harvest. Different parameters, including height(mm), number of leaves and tiller, Brix percentage, fresh and dry leaf weight(g), total top fresh weight(g), stem and seed dry and fresh weight(g) have been measured in the field after first and second harvest. The results demonstrated the higher height, number of tiller, and diameter after the second harvest. Number of leaves and leaves fresh weight and total top weight increased by 6 and 10 times, respectively. Brix percentage increased by 2 times. In the first harvest, no seeds harvested, while in the second harvest, 134 g seeds harvested. This sorghum variety (SE1) showed the acceptable green biomass, especially after the second harvest. This property will add to the value of sorghum in this condition, as it will not need extra fertilizer and labor work for seed planting.

**Keywords :** energy, high rate algae ponds, HRAPs, Sorghum, waste water

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