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Efforts to Introduce Sugar Beet Crop in Sudan for a Sustainable Improvement of Agricultural Production in Rural Communities

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Abstract

The industrial processing of agricultural products play an important role to improve farmers income. The sugar industry in particular has such a positive economic impact on farmers in Sudan. Sugar cane is the main crop for producing sugar in Sudan at the moment, and delivers about 50 % of Sudan needs for sugar. There is a need to increase sugar production for self satisfaction and possible export of this strategic commodity. However, insufficient water resources limit the increase of sugar cane acreage in Central and North Sudan. Sugar beet (*Beta vulgaris* L.) is an important alternative for sugar production, it needs less water and has a shorter cultivation period. The present study tried to investigate the possibility of introducing sugar beet in Sudan. The study focused on the suitability of various varieties of sugar beet to be cultivated in different parts of Sudan. Experiments were carried out at six locations and included 2-36 varieties per season and site. A number of varieties were found to be suitable under Sudan conditions and two varieties were released for commercial use. A number of field experiments were executed to study appropriate cultural practices. The results indicated that early sowing gave the best yield. Nitrogen fertilisation gave significant increase in yield. The study also showed that sugar beet needed 19 – 20 irrigations with an average of 200 – 300 m³ of water per irrigation, while sugar cane needs almost twice as much. The optimum planting population was found to be 83 333 plants ha⁻¹. The study showed that sugar beet is highly sensitive to weed infestation and yield can be reduced by 85 % if weeding was delayed to 10 weeks after sowing. The study also showed that sugar beet was attacked by insects feeding on leaves such as *Spodoptera exiguae*, whereas three population peaks were recorded in the season. The study indicated that sugar beet can successfully be grown in Sudan for sugar production and can play an advantage role in improving the economy of rural communities.

Keywords: Cultural practice, Sudan, sugar beet, sugar industry, varieties