In- vitro clonal micro propagation of Agave (*Agave sisalana)*

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Agave (*Agave sisalana*) is a robust perennial of which leaves yield a hard coarse fibre. This is used mainly in the manufacture of twines, cordage and fishing nets. Since large scale supply of homogeneous planting materials for plantation was very difficult from conventional systems. Therefore, the objective of this study was to develop a suitable protocol for *in- vitro* micro propagation of Agave.

All studies were arranged according to the Completely Randomized Design. In step 1, Clorox solution (NaOCl) (10 % and 20 % solution with 10 and 20 minutes) and agave bulbils were used as explants for surface sterilization. MS basal media was used with two hormones of indole acetic acid (IAA) and benzyl amino purine (BAP). There were 12 treatments with all possible combinations of IAA (0.5, 1.0 and 1.5 mg/ L) and BAP (2.0, 2.5, 3.0 and 3.5 mg/ L) were tested for multiplication in step 2. In step 3, five types of potting media (i.e. 1:1coir dust: sand; 1:2 coir dust: sand; 1: 3 coir dust: sand; 2:1 coir dust: sand and 3: 1 coir dust: sand) were tested for acclimatization.

Most effective sterilization method was observed in the treatment of 20 % Clorox solution for 10 minutes. Interaction of two hormones was significantly affected on number of shoots per plant, number of roots per plant and leaf length. The highest mean number of shoots (7.3 $\pm$ 0.1) was recorded with combination of 1.5 mg/ L of IAA and 2.0 mg/ L of BAP while higher number of roots (7 $\pm$ 0.1) were recorded with hormone combination of 1 mg/ L IAA and 2.5 mg/ L of BAP. The highest leaf length was recorded with hormone combination of 1.5 mg/ L of IAA and 2.5 mg/ L of BAP. The most suitable potting media for acclimatization of agave plantlets was shown to be coir dust: sand (1: 1) media.

It can be concluded that 20% Clorox solution for 10 minutes can be used to surface sterilize the agave bulbils. The medium containing 1.5 mg/ L IAA and 2 mg/ L BAP gave the highest shoot proliferation rate whereas the best hormonal combination for root induction was 1 mg/ L IAA and 2.5 mg/ L BAP. For Agave acclimatization, prepared media with equal volume of coir dust and sand was shown highest survival rate.

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