Germination dynamics of Masbedda (Gymnema sylvestre) seeds as affected by soil moisture conditions and different field conditions

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Gymnema sylvestre is a woody perennial vine grows in tropical forests. *Gymnema* has a ready demand in local and foreign market, because of its anti-diabetic properties. Due to overexploitation of natural habitats, the species is now being threatened. Since a little information is available on germination dynamics of the species, the present study was undertaken to study the effect of different field conditions and moisture levels on germination of *Gymnema sylvestre* seeds.

Fully matured pods were picked directly from the mother plants and seeds were extracted. Uniform and viable seeds were screened for the germination tests. Seeds, @ 25 numbers per dish were placed on petri dishes filled with a top soil medium and moistened daily. Five moisture levels (i.e. 100, 80, 60, 50 and 30 % of field capacity) were maintained until the germination is completed. Experimental design was Complete Randomized Design (CRD) with 5 replicates. Three different fields (i.e. open grass land, forest land and a home garden) were used to assess the germination of seeds under different field conditions and a laboratory experiment was also conducted as a control. Germinated seeds were counted daily and germination percentage was calculated.

The moisture level of 50 % (of the Field Capacity) gave the highest germination (93 %) followed by 60 % moisture level (88 % germination), which were not significantly ($p \leq 0.05$) different. The lowest germination (51%) was recorded at field capacity. Excessive moisture might have caused poor air circulation in this media thereby seed germination was poor. Furthermore a very poor germinations (7, 3 and 1 %) were recorded from forest land, open grass land and home garden, respectively, whereas 88 % of seeds were germinated under laboratory conditions. Lack of moisture may be the reason for poor germination recorded under field conditions. Therefore, it can be concluded that, germination of *G. sylvestre* seeds could be occurred at a higher % if the soil moisture is favorable i.e. at least 50-60% of the field capacity. Therefore maintenance of soil moisture is very essential for the germination of Masbadda seeds in the field.

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