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**BREAKING SEED DORMANCY IN POITAVAGA
(ALBYZZIA STIPULATA, BOIVIN)**

Pottavaga wood is used chiefly for making packing cases and catamaran. Fresh seeds of this legume do not germinate under normal conditions. Preliminary studies revealed that the seeds fail to imbibe water even after 30 days of soaking and that they germinate promptly on removal of the seed coat. Dormancy of such hard seeds can be overcome by scarifications. The present investigation was taken up to find out an easy effective and cheap method to overcome seed dormancy in this species.

Fresh uniform air dry seeds were used in these studies. The seeds were subjected to different treatments which consisted of soaking in sulphuric acid, hot water treatment, mechanical scarification and chipping. The seeds were soaked in concentrated sulphuric acid for various periods and thereafter washed in tap water for 30 minutes. Hot water treatment consisted of dipping the seeds in hot water (initial temperature 100°C) for various periods and then transferring to water at room temperature. Mechanical scarification was effected by rubbing the micropyl region or the two flat surfaces of the seed against a rough surface. In the chipping treatment the seed coat was chipped off at the chalazal end without injuring the cotyledons.

The treated seeds were sown in petridishes lined with moist filter paper in 4 replications of 25 seeds each and the germination counts were taken, upto a period of 30 days. Untreated seeds served as control.

Results presented in Table 1 show that scarifying the micropyle region was the most effective treatment giving 100 per cent germination. Verschaffelt (1967) has reported that in Leguminosae micropyle remains open in the seed and water fails to enter by this channel because it cannot wet the walls of the micropyle. Chipping was equally effective showing 97 per cent germination. Stiles and Cocking (1967) has found that hard coated seeds absorb water rapidly when a portion of the seed coat is removed by filing or chipping it. Scarifying the two flat surfaces of the seed has given 60 per cent germination. Villiers (1968) has pointed out that uptake of water is prevented by testa and rupture of this layer is promptly followed by swelling due to water uptake and germination commences almost immediately. Toole *et al.* (1964) found that in peanuts removal of the outer layer of the seed coat improved germination.

Hot water treatments have promoted the germination of the seeds substantially. This is in conformity with the findings of Yadava *et al.* (1976) in

Table 1

Per cent germination of seeds of *A stipulata* after different treatments

Treatment	Per cent germination of seeds
Immersed in sulphuric acid for 1 minute	7
do 3 do	20
do 5 do	33
Immersed in hot water for 3 minutes	93
do 5 do	87
do 10 do	87
Scarification of micropyle	100
do of sides	60
Chipping of seed coat	97
No treatment	0
C, D. at 5% level	7.94

Desmanthus virgatus. It appears that immersion of seeds in hot water renders the seed coat permeable to water (Stiles and Cocking 1967).

Sulphuric acid treatment also has induced germination of the seed. Brown (1972) has reported that treatment with concentrated sulphuric acid tends to disintegrate the superficial layers of testa of hard seeds. The stimulation of germination of the seed with sulphuric acid treatment may be due to the increased permeability of seed coats (Stiles and Cocking, 1967; Yadava *et al.* 1976)

Scarifying the micropyle region and chipping the chalazal end, though effective in stimulating germination of the seeds of *Albizzia stipulata*, are difficult to carry out when large quantities of seeds are to be treated. Hot water treatment is as effective as these treatments in stimulating germination. Hence dipping the seeds in hot water (100°C) for 3 minutes can be employed as an effective method for overcoming dormancy of Pottavaga seeds.

സംഗ്രഹം

അർബിസ്സിയ സ്റ്റിപ്പുലോറ എന്ന ശാസ്ത്രനാമത്തിൽ അറിയപ്പെടുന്ന പൊട്ടവാകയിൽ നടത്തിയ പ്രാഥമിക പഠനങ്ങളിൽനിന്നും പ്രസുഷിയുടെ മുഖ്യകാരണം വിത്തിന്റെ കട്ടിയുള്ള പുറംതോടാണെന്നും മനസ്സിലാക്കാൻ കഴിഞ്ഞു. വിത്തിന്റെ അംഗുരണശേഷി വർദ്ധിപ്പിക്കുന്നതിന് അവലംബിച്ച വിവിധമാർഗ്ഗങ്ങളിൽ വിത്തിന്റെ നിഭാഗം മുറിച്ചുകളയുക, വിത്തു ചൂട്ടവെള്ളത്തിൽ മുക്കുക, വിത്തിന്റെ പുറംതോടു് ഉരസുക എന്നീ മാർഗ്ഗങ്ങൾ സംഹൃദിക അളത്തിൽ വിത്തു മുക്കുന്നതിനേക്കാൾ ഫലപ്രദമാണെന്നും കാണാൻ കഴിഞ്ഞു. ഇവയിൽ ഏറ്റവും എളുപ്പമാർഗ്ഗം ചൂട്ടവെള്ളത്തിൽ (100°C) മൂന്നുമിനിട്ടു് സമയം വിത്തു മുക്കിയെടുക്കുന്നതാണ്.

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