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INFLUENCE OF SEED PRIMING ON GERMINATION AND SEEDLING GROWTH OF *ADEANTHERA PAVONINA* IN SUB-HUMID REGION OF WEST BENGAL, INDIA

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Abstract: *Adenanthera pavonina* L. is highly valued medicinal tree species in forestry. To work on the study related to its problem of germination due to hard seed coat is urgently required for its conservation. An experiment consisting 12 pre-sowing treatments were analyzed to study the effect of pre sowing treatment on germination and initial seedling growth of *A. pavonina* at Pundibari, West Bengal. It was found that seeds pre-treated with ten minute boiling water and nitric acid 10 minutes gave significantly better germination percentage and initial seedling growth.

Keywords: *Adeanthera pavonina*, *pre-sowing, germination, shoot length*

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Adenanthera pavonina (L.) belongs to family Fabaceae is a fast growing deciduous tree native to India and southern China and growing throughout the lowland tropics up to 300-400 m (Bouquet et al., 1974). Being leguminous, it fixes atmospheric nitrogen and helps in rejuvenating the soil health. Besides its multiple parts uses, seeds are gaining more attention due to its attractive colour and used as beads in jewellery, leis and rosaries (Jaromin et al., 2011). Seeds have high protein and oil extracted the seeds is used as industrial lubricant (Burkill, 1966). The plant due to the presence of flavonoid, glycosides, saponins and steroids (Howes, 1974; Khare, 2007) was reported to demonstrate anti-inflammatory, analgesic, antihypertensive, anti-oxidant, anticarcinogenic, CNS depressant and anticonvulsant, antihyperlipidaemic, antifungal, antibacterial, hepatoprotective and renal protective activities (Olajidem et al., 2004; Adedapo et al., 2009; Das et al., 2011; Hussain et al., 2011; Chauhan et al., 2012; Jayakumari et al., 2012; Pandhare and Sangameswaran, 2012; Mujahid et al., 2013, 2015; Kumar et al., 2015). With all these medicinal values, the plant is important and needs to multiplied and adopted in a farming system. But due to its hard coated and impermeable seeds there is complication in germination at its natural environment producing uneven recruitment and seedling growth. Hence, pre-sowing treatments are prerequisite for proper and timely germination of this species. Mechanical and chemical scarification has been successfully attempted (Thilakar and Jeya Rathi, 2013) but no such attempts have been made for the species in Terai region of West Bengal. Therefore the present study was undertaken to standardize the pre sowing treatments for proper and optimum germination and better initial seedling growth of *A. pavonina* under Terai zone of West Bengal.

MATERIAL AND METHODS

Study Area

The experiment was carried out in the nursery of Department of Forestry, Uttar Banga Krishi Vishwavidyalaya, Pundibari, West Bengal, India. The study area is situated between 26^{0}19'86" N and 89^{0}23'53"E at with an elevation of 43 m from mean sea level (measured by GPS Garmin 72). The climate of the study area is subtropical which lies in the Terai region of West Bengal receiving average annual rainfall of 250-300 cm from South-West monsoon. The soil of the nursery was sandy to sandy loam with acidic reaction,