



## EFFECT OF INTERVAL OF CUTTING HARVEST ON VEGETATIVE PROPAGATION OF *ZANTHOXYLUM ALATUM* (TIMRU)

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**ABSTRACT:** *Zanthoxylum alatum* is a highly valued aromatic and medicinal plant and its growing demand and problems associated with its natural regeneration has caused a serious reduction in its native populations in India, as a result, this species has been declared as endangered species. Considering the unavailability of any standardized vegetative propagation protocol in this species, experiments were conducted to develop adequate propagation technique of this species. In this experiment, the effect of different intervals of cutting harvest on the rooting of shoot cuttings of *Z. alatum* stools has been studied. Shoots arising from the stools were harvested at 40, 60, 80, 180 and 360 day intervals upto a period of one year, the number of rounds of cutting harvest for the above intervals was 6, 4, 3, 2 and 1 respectively. Cuttings of 14 cm length and >12 mm diameter were made from the excised shoots. The cuttings were planted to study rooting behaviour and survival. For 80-day cutting harvest interval, round 2 emerged as the most successful round from the point of view of number of cuttings (5.36) per stool, rooting (65.58%) and survival (60.56%). For 180-day cutting harvest interval, round 1 was the best propagation period yielding 9.41 cuttings per stool with 82.96 per cent rooting and 70.55 per cent survival. Round 1 showed better response than round 2 on all parameters. The 360-day cutting harvest interval had one round which recorded 18.0 cuttings per stool and the rooting and survival of cuttings were 81.06 and 73.37 per cent respectively.

**Keywords:** *Cutting harvest interval, propagation, stooling, Zanthoxylum alatum*

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### INTRODUCTION

Demand for medicinal plants is increasing in both developing and developed countries due to their growing recognition for being non-toxic, having less side effects and availability at affordable prices. Herbal medicines have been used traditionally to treat many conditions such as asthma, cough, cholera, toothache, eczema, chronic fatigue, irritable bowel syndrome, premenstrual syndrome, rheumatoid arthritis, migraine, menopausal symptoms, cancer, etc. However, habitat loss and deforestation coupled with over-harvesting has resulted in dwindling population of many important medicinal plants around the world. Among different medicinal plants of Indian Himalayan Region, the genus *Zanthoxylum* (family: Rutaceae) possesses high medicinal, economic and ecological importance and has about 250 species spread all over the world. Most of the plants of this genus are dioecious,

pan-tropical in distribution and bear sharp thorns on either the stem or the foliage. *Zanthoxylum* species are used in the America, India, China, Japan and Africa for medicinal and culinary purposes. Many species of *Zanthoxylum* have been extensively studied, due to their large role in the traditional medicine of various cultures. These species have demonstrated antifungal, antimicrobial, anti-inflammatory, gastro-stimulant and cyto-toxic properties. The genus is the resource of a variety of classes of biologically active secondary metabolites including amides, alkaloids, lignans and coumarins with febrifuge, sudorific, diuretic, insecticidal and antifungal properties (Singh and Singh, 2011). *Z. alatum*, commonly known as Timur, Timru or Tomar, is an important medicinal shrub/small tree. It is semi-evergreen or evergreen, thorny and attains a height up to 6 m. It is found in the warmer valleys of the Himalaya, Eastern Ghats in Odisha and Andhra