

**Abstract:**

*Tecomella undulata* is an indigenous and valuable plant species and is compatible with arid and semi-arid regions of Iran. The remained populations of this species are propagated due to their very slow propagation, limited distribution range and high utilization. The purpose of this study was to investigate the flowering situation, determine the reasons for not forming fruit and study the sexual reproduction on the flowers and seeds of *Tecomella undulata* from the four regions with different geographical coordinates and elevation in the south of Kerman province. At first, the flowers were collected from four regions (Dalfard, Esfandaghe, Mardehak and Dasht-e-Kuch) with different elevations (1373, 1773, 898.48, 550 m) in March, 2016. Morphological characteristics such as flower shape, petal number, petal size, number of seals, septum size, flag number, flag form and number of flower pins. After collecting the seeds in August and September, they were cultivated in a factorial completely randomized block design with three replications, including the culture medium as factor A in three A1 (50% Peat and 50% sand), A2 (40% Peat and 60% sand), A3 (30% Peat and 70% sand), and seed priming treatments as factor B in four levels (ordinary water, warm water (35 and 45 ° C) and moderate sulfuric acid) and factor T, as The growth time of the seeds during in three consecutive months. In fact, 12 treatments were carried out on 36 plots and 5 per plot, 180 pots in total. In each pot, 5 seeds were cultivated and irrigation was done every day with the same regularity so that only the soils were been moistured. One month after the germination of seeds in open space, measurements were performed on the number of leaves, leaf area, seedling height and diameter with the aim of identifying sexual reproduction of *Tecomella undulata* for three months, and finally, the statistical analysis of data were performed using the SAS software and the mean of data was compared by Duncan method. The results showed that simple effects of culture media, priming, time, dual intractions of culture media × priming, culture media × time and priming × time, as well as intractions of culture medium × priming × time were significant on all traits evaluated including germination percentage, length Leaf, seedling diameter, leaf number, leaf length and width ( $P \leq 0.01$ ). The highest germination rate was observed in 45 ° C water application treatments with 60% + peat + 40% gravel bed after the end of the first month with a mean of 61.5%. Generally, according to the experiments, it can be said that seeds of *Tecomella undulata* will be germinated at the same time by priming, and the percentage of germination and their germination speed was the highest and highest under the influence of warm water treatment 45 ° C, and 60% sand and 60% Peat. Therefore, for the propagation of *Tecomella undulata* seeds, were used the seeds collected in Dasht-e-Koch habitat and by applying the treatment and culture media needed for the restoration and development of devastated habitats of *Tecomella undulata* and plantation in southern Kerman region.

**Key words:** flower morphology, sexual reproduction, priming, *Tecomella undulata*



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Four Different Altitudinal Regions (Case Study: Southern Province  
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