



Occurrence of Conjointed Twin Seedlings in *Mesua ferrea* (L.)

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ABSTRACT

Mesua ferrea, a Indian evergreen tree often planted as an ornamental tree for its fragrant white flowers that yield perfume. It is one of the hardest, strongest and most durable of Indian timbers specially used for railway sleepers, bridges etc. The seed of this species had only one embryo which produce single seedling. Here, we report 'conjointed twin seedlings' in this species. Perhaps, this could be the first report on *Mesua ferrea* L. This is a rare natural phenomenon and such abnormality may be useful for further breeding programme.

Key words:

abnormality, *Mesua ferrea*, Nagkesar, twin seedling

INTRODUCTION

Mesua ferrea Linn. is popularly called as Nagkesar. It is famous for its fragrant white flowers that yield perfume. Its bark, flower, unripe fruits and seed oil have medicinal value. It is one of the hardest, strongest and most durable of Indian timbers specially used for railway sleepers, bridges etc. The fruit of the species bears 3- 4 seeds and normally each seed produce single seedling. Here, we report 'conjointed twin seedlings' from seed of this species. Morphological abnormalities in seedlings like polyembryony, double embryo, twin and triple seedlings, albino and chlorophyll mutant seedlings are widely reported in country. Such abnormalities are due to several factors such as developmental error during development of ovary, during fertilization, genetic factors or mutation (Gunaga et al. 2008). At the time of grading these seedlings are generally discarded from planting stock. This is a rare natural phenomenon and such abnormality may be useful for further breeding programme.

MATERIALS AND METHODS

At the nursery of College of Forestry, Dapoli seedlings of many commercial important plant species occurring in Konkan region of Maharashtra are raised. *Mesua ferrea* L. is one of them. In order to raise seedlings, seeds were collected from healthy trees of this species which are located in Asud village of Dapoli Taluka in a Ratnagiri District, during March 2011. Matured seeds were sown in nursery bed and regular observation was recorded to calculate germination percentage.

RESULTS AND DISCUSSION

Seeds of *Mesua ferrea* L. have only one embryo per seed and it grows into single seedling (Photo 1). In the present study, a total of 250 seeds were sown in the nursery. During the germination period, it was observed that out of 250 seeds sown only one seed (0.4 %) showed twin seedling, which have two shoots with two independent roots. (Photo 2). Perhaps, this could

be the first report on conjointed twin seedlings in Nagkesar.

Reporting of such variations is most important for future genetic improvement and conservation programmes. Gunaga et al. 2008 have reported such abnormal seedlings record in several tropical tree species like *Acacia farnesiana*, *Robinia pseudocasia*, *Terminalia arjuna*, *Tectona grandis*, *Santalum album*, *Mangifera indica*, *Shorea robusta*, *Dalbergia*

sissoo, *Bombax ceiba*, *Putranjiva roxburghii*, *Nathopodytes nimmoniana*, *Saraca asoca*, *Garcinia indica* and *Mammea suriga* across the country. However, the growth of the abnormal seedlings, if desirable, can be used for future breeding programme. Hence, such seedlings instead of discarding could be retained and grown to test their early performance under field conditions. However, some research workers had recommended keeping leading shoot out of



Photo 1 Single embryo



Photo 2 Double embryo



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