

A note on polyembryony in *Saraca asoca* (Roxb.) Wilde, a critically endangered medicinal tree species

Polyembryony is one of the abnormalities of seedling, which produce more than one seedling from single embryo in a seed. This could be due to some developmental errors that occur in the seed. Suppose these seedlings develop from antipodal or synergid cells of embryo sac, then these seedlings may give rise to haploid individuals, which are mostly utilized in the heterosis breeding (Verma *et al.*, 2009). Recently, we have recorded polyembryony seedlings in *Saraca asoca*, one of the medicinally important and rare plants of India (Ravikumar and Ved, 2000). Perhaps, this could be the first report on polyembryony in *S. asoca* (Plate 1). Seeds of *Saraca asoca* were collected from trees located in the Campus during May, 2009 in order to study the effect of seed maturity stage on seed germination and seedling vigour. This experiment was carried out at Forest nursery of College of Forestry, Dapoli, Maharashtra. Seeds were sown in nursery container filled with potting mixture consisting of soil, black sand and farm-yard-manure in the ratio of 1:1:½, respectively. Observation on daily germination was recorded.

Total germination of 78 per cent was recorded in *Saraca asoca*. Out of these seedlings, 5.13 percent of seedlings were polyembryony (Plate 1). Among polyembryony seedlings, 2.56 per cent of plants showed triplet seedlings and remaining plants had four and five seedlings from single seed, which contribute about 1.28 per cent each. Such observations on occurrence of either twin or polyembryony at seedling stage have already been reported in several tropical tree species such as *Dalbergia sissoo* (Kumar *et al.*, 1977), *Bombax ceiba* (Venkatesh and Emmanuel, 1978), *Putranjiva roxburghii* (Thapliyal, 2004), *Nothapodytes nimmoniana* (Hombe Gowda *et al.*, 2004),

Mangifera indica (Kannur *et al.*, 2005), *Garcinia indica* (Gunaga and Vasudeva, 2008(a), *Mammea suriga* (Gunaga and Vasudeva, 2008(b), *Humboldtia vahliana* and *Syzygium mundagam* (Jose *et al.*, 2009). The growth performance of such abnormal seedlings at juvenile stage has not been observed by the earlier workers. The genetic potential of such abnormal seedlings, if desirable can be used for future breeding programmes. Hence, such seedling instead of discarding could be grown to test their early performance under field conditions. However, some research workers have recommended to retain these seedlings with leading shoot for higher vigour and remaining shoots can be culled out at the earliest possible to use these seedlings for field planting (Gunaga and Vasudeva, 2008).



Plate 1. Polyembryony in *Saraca asoca* (b-d)
(a-normal, b-triplet and c-four shoots, d-five shoots)

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