

A new record of three seeded *Kusum* (*Schleichera oleosa* Lour.) Merr. fruits from Jharkhand, INDIA

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Abstract:

The present paper reports new record of *kusum* fruits (berries) from the species of *Kusum* (*Schleichera oleosa*) from India. The systematic account, details of material collected, co-ordinates and geographic distribution of this species in Jharkhand are incorporated. Generally, *Kusum* (*S. oleosa*) bears single seeded fruits and sometimes two seeded but we recorded three seeded fruits of *S. oleosa* and being reported for the first time under our study. Observation also revealed the more bigger seed size (14.8m x 11.9m x 7.4m) and higher weight (648 mg) obtained from the three seeded berries of *kusum*. Since, *kusum* is one of the best lac host plants, the report may be usefully applied for the successful implementation of afforestation programmes launched for lac farmers.

Introduction:

Schleichera oleosa (Lour) Merr, (Syn. *Schleichera trijuga* Willd & Klein, *Cussambium oleosum* O. Kuntze, *Pistacia oleosa* Lour.) is commonly known as Lac tree (Eng), *kusum* (India), *pongro* (French), *khmer* (Cambodia), gum-lac tree (Filipino), *kasambi* (Indonesian), *kusambi* (Malay), *takhro* (Thailand). *Schleichera* belong to monotypic taxon of plants in Sapindaceae family. The plant known under different Indian language as *Kusum* (Hindi & Gujarati), *Chakota*, *Sagade* (Kannada), *Kosimb* (Konkani), *Poovam* (Tamil & Malyalam), *kusumb* (Marathi), *Kusumbha* (Sanskrit) & *Kosangi* (Telgu).

Kusum (*Schleichera oleosa*) is an important lac host tree known for its multipurpose use by the people in form of food, feed, fuel, timber, pharmaceutical and raw materials of industries. Besides the extraction of several edible as well as non edible oils from the *Kusum*^[1], the main use of *kusum* is as the host tree of lac insect (*Kerria lacca* Kerr.) for production of natural,

biodegradable and commercially important lac resin that provides livelihood security to lakhs of farmers in states like Jharkhand, Chhattisgarh, Orissa, Andhra Pradesh and West Bengal^[2].

Taxonomically, *S. oleosa* fruits are broadly ovoid, ellipsoid to subglobular berry, single seeded and sometimes two seeded^[1,2], dry indehiscent, apex pointed, yellow, hard-crustaceous, smooth or slightly spiny. The seeds of *S. oleosa* have subglobular, about 12 mm x 10 mm x 8 mm^[1], hilum orbicular, testa brown, smooth, glabrous enclosed in a succulent yellow aril.

Materials and Methods:

Yellow fruits of *S. oleosa* were collected from the well-established orchard of *kusum* tree located at the Institute Research Farm of ICAR- Indian Institute of Natural Resins and Gums (*erstwhile* Indian Lac Research Institute), Namkum, Ranchi (23°23'N, 85°23'E and 650 m above sea level), Jharkhand, India. Immediately after collection, fruits were detopped apically for the seed count in intact fruits, thereafter deaired by hand rubbing in fresh tap water contained in a bucket and then seeds were dried in shade for a few days; afterward seed length, width, thickness and weight were recorded.



Figure 1: Three seeded fruits (berries) of *kusum* (*Schleichera oleosa*).

Results and Discussions:

In our study, we have established a new record of three seeded *kusum* (Fig. 1). Before our observation, it had been reported that *S. oleosa* fruit (berries) bears a single seed and sometimes double seeded fruits were also observed^[1,2]. The seed produced from three seeded berries of *kusum* have an average size of 14.8m x 11.9m x 7.4m which is higher than the average seed size (~ 12 mm x 10 mm x 8 mm) as reported earlier^[1]. Further, seed weight was also observed to be higher (648 mg). The results of the study indicated that the berries of *kusum* also bear three seeds and the seed of three seeded berries posses higher seed size as well as weight which indicates higher seed vigour ^[3,4]. Several reports have revealed that seeds of higher sizes had different level of germination and growth^[5]. The size of seed influences the fitness of parent plants and their population regeneration process^[6,7,8]. The seedling emerging from the large seeded have greater survival ability^[9]. Hence, more seed number, size and weight as reported in our study in case of *S. oleosa* ascertain the survival potential of this plant.

Conclusion:

The present study reported for the first time that *S. oleosa* fruit (berries) possess three seeds and all seed in three seeded berries bear larger seed size which may greatly influence the success of afforestation programmes, consequently benefiting the lac farmers also.

References:

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