



Effect of Rooting Hormone Concentrations on Success of Phalsa (*Grewia asiatica*) Cuttings

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Since the discovery of auxin, there has been spectacular progress in the area of chemical regulation of plant growth and development. At present there are five groups of PGRs viz., auxins, gibberellins, cytokinins, ethylene and abscisic acid. However, some others like brassinosteroids, jasmonic acid, oligosaccharides and fusicoccin are found useful in one or other ways for growth and development of horticultural crops. These plant growth regulators are organic compounds other than nutrients, which in small amounts promote, inhibit or otherwise modify any physiological process in plants. These growth regulators can be natural or synthetic. Phalsa (*Grewia subinaequalis* D.C.) a member of family Tiliaceae, is one of the oldest fruits known to Indian. Phalsa has been mentioned in Vedic literature as having certain medicinal properties. It is capable of growing under neglected and water scarcity conditions where only a few other crops could survive. Besides, it is an important catch crop in commercial orcharding. The mildly acidic fruits are rich in Vitamin A, C and minerals. Flowering in phalsa starts from February-March and continues till May. After 40-45 days of flowering, the fruits start ripening. Fruits are small-sized and ripen over a period of about a month. Gradual but steady ripening of few fruits in a cluster during summer necessitates frequent harvesting. Therefore a number of pickings are required at 2–3 days intervals which are very expensive. Phalsa fruits have short shelf life; therefore, its fruits are suitable for local market or need to be processed immediately after harvesting. Problems in phalsa whether related to the propagation or production may be tackled with the use PGRs are presented here.

Botany of phalsa

Phalsa belongs to genus *Grewia*. It is deciduous bush in North India. It can be trained both as a bush and single stemmed small tree. In South India it is evergreen. It performs better in areas with district winters. The stem is hard and brittle. The bark has mucilaginous juice, which is used to purifying to sugar or jaggery. Leaves are broad rough and light green in colour, with hairs on both sides. Flowers small, yellow in colour, appear in clusters on peduncles in leaf axis. Flowers appear in April in north India. Fruit ripens in June and is drupe with one or two hard seeds.

Use of PGR in rooting of cuttings

Stem cuttings and air layers which are means of multiplication of phalsa did not root easily. However, treatments with auxins like IBA and NAA may improve rooting of difficult to-root hardwood cuttings of phalsa. Effect of auxins has been found to be positive for induction of rooting and for longer roots in phalsa stem cuttings. As phalsa stem cuttings are difficult to root, a treatment with auxins like IAA, IBA and NAA improve rooting of difficult-to-root hardwood cuttings of phalsa.

Propagation of phalsa

Phalsa is commonly propagated through seed. Cuttings are difficult to root due to the presence of mucilage. Some reports say that IBA treated cuttings can root when planted in January. Bold seeds give 90 percent germination during July. Sow seeds on raised beds 2cm deep in lines 10cm apart. Seed to seed distance should be 2cm. Cover the seeds with mixture of sand + F.Y.M 50: 50 ratio.

Apply water with sprinkler, immediately after sowing. Avoid flooding of seed beds, failing which root rot fungus *Pythium* may appear. Apply 1% Bavistin solution after the seed germinate. Apply the solution Dursban 20EC (chlorophyriphos) @ 10ml/L of water after 30days of seed sowing to check the attack of white ants. Seeding become ready for transplanting in January.

References

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