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Production Technology of *Alpinia purpurata*

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Red ginger, also known as ornamental ginger, is a tall, upright, herbaceous, perennial, evergreen plant from the South Pacific, with bright red floral bracts and inconspicuous white flowers. Native to New Caledonia, it is widely cultivated in the tropics and subtropics. It grows well in rich soil and in wet habitats, but it can grow in dry areas as well. Red ginger is quite popular as an ornamental and cut flower. The plant comes up well under partial shade and is suitable as an intercrop in coconut gardens. It is well adapted to all major agro climatic zones of India. With its long, attractive red flower bracts and lush green leaves, it suits well for tropicaltheme landscapes. It is useful as a tall informal hedge or screen. It is a good backdrop or foundation planting, especially in front of foundation walls. It can be used as a shrub border in mass plantings or as a specimen plant. It is a very ideal cut flower. Since this plant can spread extensively, planting it near natural areas should be done with caution since it might invade. In such cases, planting can be taken up in containers or the beds are surrounded with a physical barrier such as a plastic mow strip. Important species A. purpurata is the most popular species. The other important species are A. zerumbet and A. conchigera. Of these species, A. zerumbet is highly appreciated for its beautiful flowers and is commonly called as „Queen"s candle". It grows on wetlands in forest valleys. A. speciosa, the shell flower or shell ginger (white and purple, fragrant); A. sanderae (leaves are striped white and green and rarely blooms); A. calcarata (leaves green, flowers red and yellow, fruits orange) and A. formosana are the other species available.

Propagation

Seeds: Seeds are rarely produced. Seeds are sown shallow in a moist, slightly acidic, well drained organic medium. Seeds germinate in 2-3 weeks. The seedlings may be transplanted into larger pots as soon as they are large enough to handle. With heavy fertilizer application, some flowers will be produced in 2-3 years.

Offshoots: Inflorescences develop aerial offshoots (small plantlets) from the bract axils. These offshoots can be used as the source of new plants. The offshoots grow rapidly and soon weigh down the mature stem. To propagate with offshoots, the whole flower head can be bent into a pot and covered with soil. After roots have formed from the offshoots, the mass of rooted offshoots are cut off from the mother plant. The rooted plantlets can be separated and planted in pots or offshoots can initially be separated from the inflorescence and planted in individual pots. Rooting of offshoots is improved with 500 ppm auxin (IBA or NAA), although they can be rooted without hormone treatment. The offshoots are planted in vermiculite or perlite to allow roots to develop before transplanting them into the ground. Red ginger propagated from offshoots makes full, attractive foliage plants in 6-inch or larger pots. About 2 years is required to produce flowers of marketable size and quality.

Rhizomes: Some cultivars do not develop offshoots and must be propagated by rhizome divisions. The rhizomatous mat is divided into small clumps of one to four stems. If the roots are not well developed on the horizontal rhizome, the upright stem should be cut back to reduce water loss. The individual pieces are dusted with a fungicide and planted at 5 cm depth in vermiculite or any another well drained medium. They are kept in a warm place but not in full sun. Watering is done periodically until the plants are established. Rhizome propagated plants produce marketable flowers within a year when planted in beds.

Soil and climate: Red ginger grows up to approximately 1600‟ elevation. It grows best under full sunlight. It also grows under partial sun and light shade. Pink cultivars suffer from a tip burn disorder that is lessened with 30 percent shade. Flower yield and rate of development depend on the amount of sunlight received by the plant. It is shade tolerant but does not thrive in heavy shade. It does fine in light shade and tolerates moderate shade. It grows best where the temperature is 21-350C. It is not tolerant of temperature below 100C and should be grown in conditions of 160C or higher. Flowering occurs round the year, with greater production during the summer. Some yellowing of the foliage occurs at high temperatures. Red ginger has low salt tolerance and is not drought tolerant. The crop requires protection from wind and salt spray. Browning, tip burn and discoloration may result if irrigation water is saline

Planting: The rhizomes divided into small pieces are planted in pots or directly in the field. For pot growing, potting mixture consisting of equal parts of loam, leaf mould and well decayed manure is the best medium. For planting in the field, the land is prepared by ploughing. The rhizome is placed about one inch below the soil surface. A spacing of 50 x 50 cm is adopted. Watering is restricted till the rhizomes sprout, as too much watering may lead to rotting of the rhizomes. Shade from direct sunlight should be provided.

Irrigation: The soil must be kept moist. Irrigation is given at weekly intervals during dry periods. The best flower quality is achieved with adequate irrigation

Nutrition: The plants should be given organic manure and fertilizers for proper growth. Well rotten farmyard manure at the rate of 4-5kg/m2 may be applied at the time of soil preparation and 5-10 g each of NPK/m2 at the time of planting rhizomes. The plants should be given fertilizers every two weeks when they are growing actively. Flowers are produced almost throughout the year. Micronutrients are applied @ 450-700 ppm Mn, 30-60 ppm Fe, 10-15 ppm Cu, 40- 90 ppm Zn and 15-25 ppm

Pruning: Pruning is done to remove spent flowering shoots and yellow and dried foliage. Spent flowers at the ground are cut off.

Plant protection: No serious pests are reported in red ginger. However, red spider mites, mealy bugs, scale insects and aphids cause considerable damage. Field sanitation is part of good pest management for red ginger. Removal of all mature flowers and dried plant parts from the field is done regularly, so that they do not serve as hosts where pests can multiply. Heavy watering following planting may sometimes cause rotting of rhizomes.

Harvesting: Inflorescences are harvested in the early morning while still turgid. They should be cut when the bracts are about two-thirds to three-fourths open. The entire shoot should be cut a little above ground level. All except the top one to three leaves are removed from the stem in the field or at the packing shed prior to cleaning. The stem bases are kept in water during transport from the field to the packing area.

Rhizome propagated plants produce marketable flowers within a year after establishment. Floral spikes are harvested about 4-5 months after stem emergence. Although production is year-round, the greatest number of flowers is produced during the summer months.

Vase life: Post harvest vase life varies from 5 days in young flowers (stem diameter < 0.4 inch) to 25.5 days for standard size flowers. Sugar will extend the post harvest life by at least

a week. Vase life of pink ginger inflorescences is extended by Benzyladenine (BA) @ 200 mg/l applied as a dip or spray.

References

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