

Effects of different natural organic additives on *in vitro* regeneration of radish (*Raphanus sativus* L.) *Var.* Beeralu Rabu

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In vitro regeneration ability was greatly influenced by medium composition of culture media which deliver nutrients into *in vitro* plant growth as well as *in vivo* plant growth. In addition to inorganic salts, a carbon and energy source, vitamins, and plant growth regulators, in case of specific needs of particular species or tissues, other components, including organic nitrogen compounds, organic acids, and a wide variety of complex natural extracts, can be important. *Raphanus sativus* L. commonly known as 'radish' is a popular vegetable crop used by people all over the world for its culinary and medicinal properties. 'Beeralu' is a Sri Lankan radish variety which has been recommended for low country in Sri Lanka. Therefore, variety 'Beeralu' is needed to be subjected to further tissue culture studies. Hence, the present study was carried out initially to find out the effects of different organic additives on *in vitro* shoot regeneration of Radish (*Raphanus sativus* L.) *Var.* Beeralu. Hypocotyl explants of aseptic plantlets were cultured on MS basal medium (100ml) supplemented with 2.5mg/L Benzyl Adenine (BAP) and 0.1mg/L 1-Naphthaleneacetic Acid (NAA) and natural additives; rice flour (5g), grind potato tubers' juice (100g/20ml) H₂O, grind carrot juice (100g/20ml H₂O), orange juice (10g/100ml H₂O), green gram (10g/100ml H₂O) and control. Complete Randomized Design (CRD) with five replicates was used for the study. After one month, the numbers of regenerated shoots were counted and statistical analysis was carried out using the Student Newman-Kuells Means Separation Test of SAS program (9.1.3). Number of shoots which was gained by control treatment was 7 shoots/explant. The highest mean number of shoots (12 shoots/explant) from Radish *Var.* Beeralu was observed in MS basal medium with 2.5mg/LBAP and 0.1mg/LNAA supplemented with orange juice (10g/100ml H₂O). No shoots were (0 shoots/explant) observed from medium with carrot juice but it induced callus formation. Media with rice flour (6 shoots/explant), grind potato tubers and green gram (1shoot/explant) inhibit the shoot regeneration.

Key words: *In vitro* regeneration, natural additives, orange juice, *Raphanus sativus* L.

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