

Growing media affects germination and seedling growth of peruvian ground cherry (*Physalis peruviana* L.)

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An experiment was conducted to find out the effect of growing media on seed germination and seedling growth of *Physalis peruviana* L. Eight growing media were formulated using soil, sand and FYM in different proportion including soil in alone as control. The mixture media had significant effect on seed germination and growth of the seedlings. Maximum germination (86.86 %), seedling length (36.59cm) and dry matter accumulation i.e. total dry weight of seedling (87.82mg) were recorded with soil + sand + FYM (1:1:1) treatment. The leaf area and stem diameter of seedlings were maximum with soil + sand + FYM (2:1:2), but it was statistically at par with soil + sand + FYM (1:1:1) treatment. Treatments having FYM as a component of growing medium showed better growth of the seedlings. Minimum germination, length as well as dry weight root and shoot, leaf area and stem diameter were noted in control (soil).

Key words : *Physalis peruviana* L., Growing media, Germination, Seedling growth

INTRODUCTION

The Peruvian ground cherry (*Physalis peruviana* L.) belongs to family Solanaceae is an annual as well as perennial herb characterized by their persistent calyx which completely encloses the golden yellow colour fruit. The crop is said to be native of Peru and Chile and reportedly cultivated in South Africa, Kenya, India, Egypt, New Zealand, the Caribbean, South East Asia, California, Columbia and Hawaii (Legge, 1974; Klinac, 1986; Chattopadhyay, 1996). It is commonly called as 'Poha' in Hawaii, 'Golden berry' in South Africa 'Rasbhari', 'Makoi' or 'Tepari' in India (Gupta and Roy, 1980). In India, it is a minor fruit which fetches very high price in market. The chief source of commercial supply of fruits is reported from Uttar Pradesh, Punjab, Andhra Pradesh, West Bengal and Madhya Pradesh, Rajasthan especially from peri-urban areas. The ripe fruits are eaten fresh or can be used for preparation of excellent quality of jam for which it is also called the 'Jam Fruit of India' (Majumdar, 1979).

The Peruvian ground cherry being a quick growing short duration herbaceous shrub can be grown as pure crop or an intercrop in orchards. The crop seems to have wide adaptability of soil and climatic conditions and said to be grown wherever the tomatoes are in cultivation (Morton, 1987). As annual crop, *Physalis peruviana* is

raised through seed in nursery and thereafter transplanted in well prepared field. Healthy and vigorous seedling is the prerequisite of better growth and development of plant in field condition. Several factors of nursery conditions significantly influenced the seed germination and seedling growth. Besides physiological condition of seed, light, moisture etc., the growing medium is considered most important factor. Seedling raised in soil showed poor growth due to poor aeration and compactness of soil. Sand provides good aeration but lack of essential nutrients restricts the seedling growth. Other viable option is the addition of FYM in growing medium that may improve the nutrient content, its availability as well as physical conditions of the soil. As the growing medium is conducive of the growth and vigour of the seedlings, the present investigation was conducted to find out the effect of growing media on seedling growth of Peruvian ground cherry.

MATERIALS AND METHODS

The experiment was conducted at Regional Research Station and Faculty of Agriculture, Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Wadura, Sopore (Jammu & Kashmir) during Spring, 2009. The growing media treatments were: T₁ –