



NURSERY RAISING OF THE VEGETABLES CROPS

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Abstract:

Plants growing in nurseries can easily be protected from many harmful effects by following proper climatic conditions, protective structures, micro climatic conditions etc. Planting saplings on polybags helps it to gain access to all artificial media, nutrients, growth regulators etc. Since vegetables are essential part of balanced diet it should be of good quality and disease free. This review aims to highlight the importance of growing vegetables on seedling trays, as it is low cost, good management and moreover it gives good productivity.

Keywords:

Good productivity, low cost, disease free, seedling tray.

Introduction:

The primary requirement for attaining full yield potential of any vegetable crop requires healthy seeds and seedlings. Nowadays the importance of quality seeds and seedlings are well known to farmers. Growing of seedlings in technologies like portrays or plug trays achieves higher yields and quality produce. This technology achieves maximum germination count and healthy establishment of plants. This technology requires soil-less substrate with the mixture of coco-peat and vermiculite. Most of the farmers are unaware of the critical and abnormal climatic conditions. According to Mokidul Islam, Utpal Barua and Jessica D the productivity of vegetables in Ri-Bhoi district of Meghalaya is extremely low due to adverse climatic condition viz., moisture stress, high rainfall during rainy season, frost during winter season, poor soil nutrient due to losses resulted by leaching toxicity of heavy metal ions. To overcome these situations, they decided to plant seedlings in portrays. The seedlings are well protected from abnormal climatic conditions and as well as from many insect and pest. This practice provided job opportunities and income round the year for the local people. The resource book on Horticulture Nursery Management states that yearly demand of vegetable seedlings and seeds in India

S.No	Crop	Seedling(millions)	Seeds(Kg)
01	Brinjal	200000	635
02	Onion	695000	2779
03	Tomato	13028	600
04	Cabbage	22963	101
05	Chilli	14157	195

(Source: Resource Book on Horticulture Nursery Management, NAIP, ICAR, 2012)

In another case, Kouser Parveen Wani(2011) stated that the farmers in Himalayan regions faced situation of getting lower income and lower yield due to high frost conditions. Growing off season with hybrids show higher output in production and productivity. Local farmers had a fear on taking risks in their farming life because their subsistence depends upon this.

Country	Area(ha)
India	525

(References-Kouser Parveen Wani, Pradeep Kumar Singh, Asima Amin*, Faheema Mushtaq and Zahoor Ahmad Dar, PROTECTED CULTIVATION OF TOMATO, CAPSICUM AND CUCUMBER UNDER KASHMIR VALLEY CONDITION, Asian Journal of Science and Technology Vol. 1, Issue 4, , July, 2011, pp.056-061)

Country	Area(ha)
India	211.12(viiiith plan)

(References-Hillolmoy Chakraborty¹ and Laxmi Narayan Sethi², Prospects of Protected Cultivation of Vegetable Crops in North Eastern Hilly Region, International Journal of Basic and Applied Biology, Volume 2, Number 5; April-June, 2015, pp.284-289)

Vegetables are very exposed to frosting and freezing which leads to severe loss. Many regions in the country faces different adverse climatic conditions, diseases and pest to overcome all these effects the best way to grow vegetable crops is through seedling tray technology.

Media:

It is the most important component for growing all plants. The media contains a variety of soilless innards like peat moss, vermiculite, perlite, shredded coconut husks(coir) and a wetting agent.

Fertilizers:

Many fertilizers can be used for vegetable bedding plant production. The commonly used fertilizers include 15-0-15 NPK (dark weather feed) and 20-10-20 NPK.

Experimental Details:

Since vegetable crops are more prone to diseases and pest it requires proper growing media, fertilizer supplies and management practices.

According to B.K. Goswami, Vijay Bhardwaj, Ambuj Bhardwaj* and Neetu Singh, surplus germination was noticed under cocopeat media(coconut husks) in (T-3)

AM fungus and then, AM fungus,(T-7) crucifer treatment and Trichoderma, AM fungus,(T-8)Crucifer residue. Whereas in case of vermicompost media(media containing earthworms), more germination rate was seen in AM fungus,(T-7)

crucifer and then, (T-3) AM fungus. In case of soil media, most germination percentage is recorded in (T-3) AM fungus and then, Trichoderma, AM fungus, (T-8) Crucifer residue and AM fungus, (T-7) crucifer. Overall, the growing media, cocopeat and AM fungus has shown the highest germination percentage but least in the growing media soil which has no supplements applied. The next experiment is based on the organic media and effect on seedlings of vegetables. According to Mesude Unal, 8 types of composition media mixtures, as media1 has mixture of peat, stable manure, prunings, zeolite with the ratio (1:1:1:1), media2 has mixture of peat, stable manure, prunings, Leonardite, with the ratio (2:1:1:5g/kg), media3 has mixture of peat, stable manure, zeolite with the ratio (2:1:1), media4 has mixture of peat, stable manure, perlite with the ratio (2:1:1), media5 has mixture of peat, sand, nitrogen, phosphorous, potash with the ratio (2:2:15kg/da), media6 has mixture of peat, stable manure with the ratio (2:2), media7 has peat, zeolite with the ratio (2:2), media8 has peat (4). The result was observed that media4 with peat, stable manure, perlite, media5 with peat, sand, npk, media6 with peat, stable manure, media8 with peat shows high production with tomato and pepper. The next experiment is based on using of protrays for better and maximum growing potential. According to Kulveer Singh Yadav and Anurag Bajpay, the use of portrays on growing of different seedlings is very helpful in ensuring increased development of roots, germination rate, proper spacing, seed viability, individual area for each seed, avoids contamination or any mixtures possibilities etc. Several experiments were conducted for determining production in different regions. According to P. Vivek and V.M. Duraisamy, tomato plant seedlings were sown in selected medias as one in (1.) coir pith and other two as (2.) vermi compost (3.) coir pith+ vermi compost. It was found that coir pith growing media has 99% germination rate, vermi compost has 87%, and coir pith+vermi compost has 92%. It's because coir pith has very good EC, pH and more. The oxygen circulation in coir pith is far better than the other media. With coir pith it was recorded as shoot length having 89.3mm, root length having 37.9mm, stem diameter having 1.77mm, and no. of leaves having 4 at the age of 30 days. The next experiment is based on organic fertilizers and growing medias. According to Y. Tuzel, G.B. Oztekin and E. Tan, poor impact of vermicompost in the quality of seedlings of tomato, but when used in mixture with peat, and FYM shows better results. The next experiment is based on growth impacts of tomato with nutrised seeds. According to SURABHI HOTA and K ARULMOZHISELVAN, it was noted that for growing tomato

seedlings seed media and manure is perfect for seedlings germination. And also vermicompost has also potential to germinate in higher quantity i.e;98.6%.The media having vermicompost, coir pith, in which vermicompost has soya chunks shows higher germination as compared to vermiculite. The next experiment is based on impact of pine bark goat manure, pine bark only compost on vegetable seedlings growth. According to, L.T. Mupondi, P.N.S. Mnkeni and P. Muchaonyerwa, it was observed that pine bark goat manure has very good effect on growth of the vegetable seedlings, that results in improved nutrients, weight contents etc, and can be used in selected vegetables. The next experiment is based on growth impacts due to mixing of Spent Coffee Grounds (SCG) with media. According to Antonios Chrysargyris, Omiros Antoniou, Panayiota Xylia, Spyridon Petropoulos, Nikos Tzortzakis, it was found that SCG has very bad impact on the Brassica oleracea species, less plant height, number of leaves, fresh weight etc.

Conclusion:

By analyzing all the above experiments and researches we can clearly understand that the best way of growing vegetable crops under protective structure gives good germination percentage, viability rate and disease free varieties. This technology avoids heavy losses in the total production. Even the investment made on this technology is comparatively less than growing the crops in an open field. Since the investment amount is less all farmer communities can afford to this technology.

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