



NURSERY RAISING OF THE VEGETABLES CROPS

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Abstract:Problems regarding raising of seedlings of vegetables are found very easily, to prevent from bad impacts we can follow protective structure, providing appropriate climatic conditions, micro climate etc. Growing seedlings on port trays is very beneficial as using of artificial media, proper nutrients, growth management. It highlights “why a basic farmer is unable to opt for protected culture”. This review aims to highlight the importance of growing vegetables on protrays for better productivity at less input.

Keywords:Vegetables productivity, increment, growth, farmer benefits, increased outcome.

Introduction:In order to enhance better germination of seedlings in vegetables, we opt for protected structure such as poly house, but due to high cost of establishment farmers do not get chance to adopt it. In fact, majority farmers do not own even land holdings they work on land owners farm and get wages accordingly. As implementation of protected culture is very high for a

farmer government should focus on this issue. Major issues in vegetable production, according to Anuradha (2015), woman involves in vegetable production but indirectly, major decisions are taken by men. These problems are directly or indirectly affected in the crop production. Reasons for not able to handle the protected structure as they heavily require technical

information and labours. Since, our country is second in vegetable production, it could be on first if successful measures are taken for production of vegetables in country. Growing off season with hybrids can even show higher output in production and productivity. Basic farmers are also afraid of taking risks in their farming life because their livelihood 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 CONDITIONS, 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

The low cost polyhouse can be the choice for basic farmers at very cheap cost. Also hilly regions eg, himachal Pradesh, Ladakh etc. vegetables growing is too much difficult as mostly they need warm to moderate temperature, where as hilly areas have very cold weather all seasons. So this is why vegetables growing in protected structure is very important factor

specially in these areas. Vegetables are very exposed to frosting, freezing, it can be a severe loss due to damage. Also, very major concern about different regions in country due to different climatic conditions, the very first initializing stage it is needed to be taken to next stage. Due to very extremely high cost of equipments of protected structures it's very tough to get, it needs to be imported from the other countries in addition with custom charges. Moreover, there is no effective promotion for protected structure in rural areas and no instructors had been set up to instruct farmers. Farmers at present situation they make nursery beds and they grow seedlings on them, and later they transplant it. But there is recommended raising seedlings under protected structure has most success, rather than failure in soil growing media, as it has various amount of soil borne diseases. Most importantly business aspects in agriculture requires protected structure, and environment for production for eg; seed growing and selling extremely requires protected climate. Cost involved in buying different types of seeds of which every seeds to germinated to avoid loss by using like hybrid seeds

but its cost is high so in order to prevent the loss from less germinating ratio of plants, under required climatic and proper controlling micro climate of plants to achieve 100% success rate. More examples of low cost protected structure can be net house, plastic low tunnel. According to Kouser Parveen Wani(2011), total cost for producing in Himalayan regions can be by hiring labours is Rs. 10900.00, by 50-50 type half family and half hired labours cost can be Rs. 7700.00, and also if an individual cannot afford hiring then only for family labours cost can be Rs. 4500.00. And the income earned for any sequence of planting vegetable crops differ in range of 15,000 to 19,000. Likewise there are different types of vegetable diseases which mostly interrupt in growing vegetables which increases the chance of failure production of vegetables, there are different types of research conducted in order to identify and take measures against the diseases and pests too. Also, there are various types of harmful diseases on vegetables, and experiments were conducted to deal with them.

Experimental Details:

Different vegetables requires different types of growing media in order to grow vegetables but most important is in case of soil, vegetable plants are prone to diseases as well as pests infestation very easily also it has very less viability rate compared to soil. Therefore, growing with soil less media is a great option to grow inside protected structure. There are different types of vegetables which require different composition of different artificial media. Many experiments were conducted in order to determine viability, germination %, productivity, etc. Several experiments were conducted for determining productions in different regions. According to P. Vivek & 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. Also, experiment conducted for determining the best suitable particle size of media which ensures maximum production. According to HKMS Kumarasinghe, S Subasinghe and D Ransimala, the tests were conducted on these vegetables are bell pepper, tomato, cucumber and cabbage on which different particle size of same media was used as 3 categories named as fine, coarse, medium. In case of media coco peat was taken, on which it was found that the medium was the best particle size out of three with particle size of (0.5 mm - 3.0 mm). This experiment was to ensure increase in germination rate. And also for higher viable rate this particle size can be used in case of coco peat media. The next experiment is also on the tomato seedlings which shows the growth characteristics on raising it on soil less media. According to Kanchhi Maya Waiba and Parveen Sharma, the experiment was conducted in pro-trays having artificial media coco peat+perlite+vermiculite having the ratio of 3:1:1 respectively. The experiment was focussed on

studying differences of hybrids of tomato their genotype and performances accordingly. So, it was found that hybrid mixing of 2 i.e; CLN2126, CLN1314G shows very high growth characteristics, increased germination rate, by using the artificial medias. According to Ambuj Bhardwaj*, B.K. Goswami, Vijay Bhardwaj and Neetu Singh, the most increased germination was observed under cocopeat media in (T-3) AM fungus and then, AM fungus, (T-7) crucifer treatment and Trichoderma, AM fungus, (T-8) Crucifer residue. While in case of vermicompost media, most germination percentage was observed in AM fungus, (T-7) crucifer and then, (T-3) AM fungus. While in case of soil media, most germination percentage is observed 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 seen the highest germination percentage but low in the growing media soil having no amendments applied. The next experiment is based on onion seedlings growing with pusa red. There were 14 treatments having vc, fym, sand, soil in RBD having plot 1*1m. The maximum

germination was seen in the soil 2 part, sand 1 part, FYM 2 part. The next experiment is based on the organic media and effect on seedlings of vegetables. According to Mesude Unal, it consists of 8 types of composition media mixtures, ratios as m1 has mixture of peat, stable manure, prunings, zeolite with (1:1:1:1), m2 has mixture of peat, stable manure, prunings, Leonardite, with (2:1:1:5g/kg), m3 has mixture of peat, stable manure, zeolite with (2:1:1), m4 has mixture of peat, stable manure, perlite with (2:1:1), m5 has mixture of peat, sand, nitrogen, phosphorous, potash with (2:2:15kg/da), m6 has mixture of peat, stable manure with (2:2), m7 has peat, zeolite with (2:2), m8 has peat (4). The result was observed that m4 with peat, stable manure, perlite, m5 with peat, sand, npk, m6 with peat, stable manure, m8 with peat shows good performance with pepper, tomato, also m3 was also good. The next experiment is based on black pepper grown on soil less mixture. According to D Prasath, K B Vinitha, V Srinivasan, K Kandiannan & M Anandaraj, The 8 media mixture were taken along vermicompost, coirpith, potting mixture, Trichoderma. Different

mixtures were (coirpith), (coirpith and vermicompost), (coirpith and Trichoderma), (coirpith, Trichoderma and vermicompost), (potting mixture), (potting mixture and Trichoderma), potting mixture and vermicompost, potting mixture, Trichoderma and vermicompost. It was rbd with 4 replications, 15 treatments. potting mixture consisting of soil, fym, sand with ratio (1:1:1). After successfully completion of 2 trials it was found that the best mixture media for making nursery of black pepper was mixture i.e; (coirpith, vermicompost and Trichoderma). The next experiment is based on using of protrays for better and maximum growing potential. According to Kulveer Singh Yadav and Anurag Bajpay, the using of protrays on raising of different seedlings is very useful as to ensure increased germination rate, seed viability, proper spacing, proper development of roots, individual area for each seed, avoids contamination or any mixtures possibilities etc. The next experiment is based on organic fertilizers and 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 nutritive seed. According to SURABHI HOTA and K ARULMOZHISELVAN, it was observed that for growing tomato seedlings manure, seed media 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 comparison to vermiculite. 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, leaf no.s, fresh weight, etc. 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 impact of media direct effect on capsicum seedlings. According to T. Mathowa, K. Tshipinare, W. Mojeremane, G.M. Legwaila and O. Oagile, it was found that hygromix, germination mix used for capsicum seedlings for improvement in growth of the seedlings. The next experiment is effect of cheap potting mixtures on the seedlings of the plant. According to M. B. Thomas, M. R. Oates & M. I. Spurway, it was found that increased growth in the peat, sand media rather than peat, sawdust, sand media mixtures, which showed sawdust mixture was very inconvenient in improving but rather it caused loss. The next experiment is effect of nursery raisings, artificial media on the cabbage. According to, Ranjit Chatterjee, Dipika Mal the protraits with biofertilizers, vermicompost can be a great option for raising seedlings rather than growing in the open field condition in the soil. As it offers very wide growth in the germination, viability, no. of leaf, area, strong plant tissues, fresh dry wt, with high potential of yield of cabbage. The next experiment is based on the changes on vegetables characteristics due to

protected cultivation so far. According to NAVED SABIR and BALRAJ SINGH, the changes can be observed after growing a certain period of time in protected climate, on vegetable seedlings like in tomato, vigour, production is maximum and the resistance to different conditions like soil salinity, root diseases etc. and many more easy management in protected structure. The next experiment is based on the coco coir, media steam effect on the lemon. According to M. Usman, M.H. Shah, A. Badar, B. Fatima, M. Sabir and Q. Zaman, it was observed that there were not any sort of improvement with steaming.

Conclusion: It can be said by observing the experiments that the best way of growing vegetables is inside protected structure with different types of mixtures and growing media for getting better germination percentage, viability rate, best management of pests, diseases.

With very less investment, an individual can opt for low cost polyhouse, net structure, etc. This definitely prevents losses in the production and maximizes the total production value.

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