



Academic year 2020-21

Tara Government College (A), Sangareddy

(Autonomous)

Accredited 'B' by NAAC

An ISO 9001: 2015 certified college

Department of Biotechnology



"Project on Utilization of overflowed water tanks to cultivate plants through Hydroponics"

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AIMS AND OBJECTIVES OF THE PROBLEM:

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- 1.To create awareness among the people on the usage of organic manure like cocopeat,vermiculate,through hydroponics.
- 2.To Utilise overflowed water by the tanks in homes to grow(or) to cultivate the plants through hydroponic method.
- 3.Study of the growth parameters of plant in different streams like hydroponic(coco peat,vermiculate),In Pot 1(coco peat,vermiculate),In Pot 2(soil only).
- 4.Utilisation of unused locations in urban areas like terrace and balconies.

GROWTH PARAMETERS IN DEFERENT MIDEA (In centimetres)

1:FENUGREEK

(METHI): _____

Day.	:	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.

In Hydroponic :	--	0.4.	0.8.	0.1.	1.5.	2.5.	3.5.	4.	4.5.	5		
(Coco&vermi)_____												
In Pot 1. :	--	--	0.3.	0.8.	1.	1.5.	2.	2.5.	3.	4		
(Coco&vermi)_____												
In Pot 2. :	--	--	--	started.	0.5.	1.	1.5.	2.	2.5.	3		
(Only soil)_____												

2:CORIANDER :

Day.	:	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11

In Hydroponic : -- -- -- -- -- -- started 0.3. 0.4. 0.5
 (Coco&vermi)
 In Pot 1. : -- -- -- -- -- -- -- -- -- --
 (Coco&vermi). :
 In Pot 2. : -- -- -- -- -- -- -- -- -- --
 (Only soil)

List Of Crops That Can Be Grown In Soil-Less Condition.

Everything starting from flower to fruit crops to medicinal plants can be grown using soil-less culture. List of crops are.

Type of crops. Name of the crops
 Cereals : Oryza sativa (Rice), Zea mays (Maize)
 Fruits. : Fragaria ananassa (Strawberry)
 Vegetables. : Lycopersicon esculentum (Tomato), Capsicum frutescens (Chilli), Solanum melongena (Brinjal), Phaseolus vulgaris (Green bean), Beta vulgaris (Beet), Psophocarpus tetragonolobus (Winged bean), Capsicum annum (Bell pepper), Brassica oleracea var. capitata (Cabbage), Brassica oleracea var. botrytis (Cauliflower), Cucumis sativus (Cucumbers), Cucumis melo (Melons), Raphanus sativus (Radish), Allium cepa (Onion)

Leafy vegetables : Lactuca sativa (Lettuce), Ipomoea aquatica (Kang Kong).

Condiments. : Petroselinum crispum (Parsley), Mentha spicata (Mint), Ocimum basilicum (Sweet basil), Origanum vulgare (Oregano).

Flower / Ornamental crops. : Tagetes patula (Marigold), Rosa berberifolia (Roses), Dianthus caryophyllus (Carnations), Chrysanthemum indicum (Chrysanthemum).

Medicinal crops. : Aloe vera (Indian Aloe), Solenostemon scutellarioides (Coleus).

Fodder crops. : Sorghum bicolor (Sorghum), Medicago sativa (Alphalfa), Hordeum vulgare (Barley), Cynodon dactylon (Bermuda grass), Axonopus compressus (Carpet grass)

REVIEW OF LITERATURE:

1.Hydroponics : A versatile system to study nutrient allocation and plant responses to nutrient availability and exposure to toxic elements.

-Nga T.Naguyen,Samuel A.McIntury, and david G.Mendoza-cozatt

2.Comparison between Hydroponically and Conventionally and Organically Grown

Lettuces for Taste, Odor, Visual Quality and Texture: A Pilot Study

-Matthew T. Murphy, Fannie Zhang, Yukiko K. Nakamura, Stanley T. Omaye
Affiliation(s).

3.A Review on plant without soil-Hydroponics.

-Mamta D.Sardare,Shraddha V.Admane,
Assistant Professor, MIT Academy of Engineering Alandi Pune, Maharashtra, India
mamtasardare@gmail.com, shraddhaadmane@gmail.com

4.Effects of Different Hydroponics Systems and Growing Media on the Vegetative Growth, Yield and Cut Flower Quality of Gypsophila (Gypsophila paniculata L.)

-Paul K. Wahome, Tajudeen O. Oseni, Michael T. Masarirambi and Victor D. Shongwe

Department of Horticulture, Faculty of Agriculture, Luyengo Campus, University of Swaziland, P.O. Luyengo M205, Swaziland.

5.“HYDROPONICS”- A NOVEL ALTERNATIVE FOR GEOPONIC CULTIVATION OF MEDICINAL PLANTS AND FOOD CROPS

-MURALI MUGUNDHAN. R*, SOUNDARIA. M, MAHESWARI. V, SANTHAKUMARI. P AND GOPAL. V.

Mother Theresa Post Graduate and Research Institute of Health Sciences, Indira nagar, Gorimedu, Puducherry-605 006.

6.A Review On The Science Of Growing Crops Without Soil (Soilless Culture) – A Novel Alternative For Growing Crops

Aatif Hussain*1, Kaiser Iqbal*1, Showket Aziem*1, Prasanto Mahato*2, A.K. Negi*1

1. Department of Forestry & NR, HNB Garhwal University, Srinagar (Garhwal), Uttarakhand, India, 2. Department of Horticulture, HNB Garhwal University, Srinagar (Garhwal), Uttarakhand, India,

7.The Use of Hydroponics in Abiotic Stress Tolerance Research

Yuri Shavrukov¹, Yusuf Genc² and Julie Hayes¹

¹Australian Centre for Plant Functional Genomics, School of Agriculture, Food and Wine, University of Adelaide ²School of Agriculture, Food and Wine, University of Adelaide Australia

8.Farming in and on urban buildings: Present practice and specific novelties of Zero-Acreage Farming (ZFarming)

Susanne Thomaier (a1), Kathrin Specht (a2), Dietrich Henckel (a1), Axel Dierich (a3)

.

9.Sustainable Food Systems for Future Cities: The Potential of Urban Agriculture

Kubi Ackerman, Michael Conard, Patricia Culligan, Richard Plunz, Maria-Paola Sutto, Leigh Whittinghill.

10.(2007) "Toward A Healthy, Sustainable Food System" American Public Health

Association Policy Statement

Database, <http://www.apha.org/advocacy/policy/policysearch/default.htm?id=1361>