

## Urban farming: Good practices and knowledge management

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**Introduction:** Urban population has outnumbered the rural with the share of 54.29 per cent (3.9 billion) globally (2016). In India as well, the urban population escalated to 33 per cent in 2016 from a miniscule 18 per cent in 1960. The unprecedented paradigm shift in population from rural to urban has led to a concern on how to ensure food and nutritional security and food availability of the booming urban inhabitants. Thus, urban farming ensures food security and restores the ruining urban ecosystem. However, there is dearth of information about the good practices and information on approaches followed by the urbanites with respect to urban farming. In this context, the study brought out the novel and innovative practices successfully experimented by the urbanites of both Hyderabad and Secunderabad cities in Telangana state of India and their information approaches and knowledge management.

**Methodology:** The study has analyzed 25 urbanites who have been involved in urban farming and qualitative and quantitative data were collected using individual interview method.

**Good Practices in Urban Farming:** This part describes the good practices and information approaches followed by the urbanites and the ICTs used for information and knowledge management in urban farming.

- a. **Location:** Farming in urban areas are mostly carried out on rooftops, in backyards and building surroundings. To some extent, farming is carried out on balconies also.
- b. **Growth media:** It is an essential element in cultivation of crops in urban area. Curd buckets, Silpaulin cover, grow bags, milk trays, plastic basin, rose pots, cement pots and waste containers of the households are the widely used growth media (Table 1).
- c. **Growth culture:** Compost of Coco Peat (CCP) and Compost of Soil (CoS) are the unique growth culture experimented by Mr. Ravichandra Kumar and Mrs. Vijayalaxmi in Hyderabad respectively.
- d. **Preparation procedure of Compost of Coco Peat:** Compost of Coco peat (CCP) is prepared by mixing the compost, coco peat, cow dung, neem cake and perlite at the ratio of 30:30:30:10:3 in a container required for the aforesaid composition i.e., 30 Kg compost, 30 Kg Coco Peat, 30 Kg cow dung, 10 Kg neem cake and 3 Kg perlite. The total quantity after preparation is around 103 Kgs. This quantity is sufficient to fill 15-17 buckets of 10 litre size. If more CCP is required, then the composition is increased proportionately.
- e. **Preparation procedure of Compost of Soil:** Take a bucket of same size be it 10 liters or 5 liters or whatever available. Take a brick of Coco Peat of 5 Kg and put it one of the buckets and add required water and at the same time take compost along with handful of neem cake powder in the other bucket

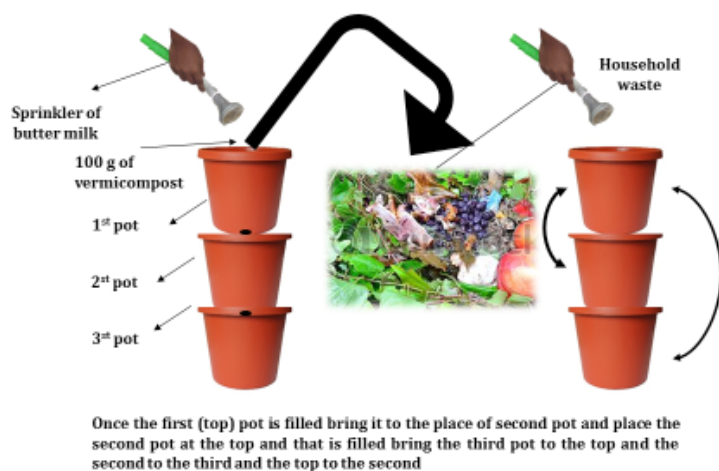
**Table 1. Information source for growth media purchase**

S.N.	Information source	Growth media purchased
1.	Sreekanth nursery, Kompally, Hyderabad	Garden pots, containers, etc.,
2.	Sri Nishitha Industries, Cherlapally, Hyderabad	Curd buckets
3.	www.indiamart.com	Curd buckets
4.	www.sniplastics.com	Curd buckets

and 50 per cent of the soil in one more bucket and finally transfer them into the container or tank that can withhold the amount which is in all the buckets and mix it thoroughly either with hands or rods whichever possible. Now put the mixture in the desired growth medium.

**Seeds of urban farming:** Seeds are either purchased from the Horticulture Department or exhibitions of Horticulture Department conducted at the various places of Hyderabad city where vegetable/urban farming kit at subsidized costs are made available. However, the markets like Musheerabad and Hyderguda are found to be the famous destination of seeds of various vegetables. Besides, the nurseries (Sreekanth nursery at Kompally Hyderabad), friends and neighbors with farms are also sourced for getting seeds and online shopping are also an exclusive juncture for purchase of seeds.

**Crops in urban farming:** All the contacted urbanites mostly involved in cultivation of vegetables (amaranths, spinach, tomatoes, brinjal, bhendi, chillies, bitter gourds, snake gourds, bottle gourds, ridge gourd) and greens (fenugreek, coriander, mint lettuce). However, to some extent radish, carrot, onion and beet root were also cultivated.



**Table 2. Virtual connection for seeds**

S.N.	Online sites	Available seeds
1.	<a href="http://www.ugao.com">www.ugao.com</a>	Seeds of vegetables, greens, fruits and flowers available.
2.	<a href="http://www.trust-basket.com">www.trust-basket.com</a>	Varieties of vegetables, fruits and leafy vegetables are available. However, most of them are hybrids.
3.	<a href="https://www.facebook.com/intipanta.in/">https://www.facebook.com/intipanta.in/</a>	Shares the availability of images and seeds pertaining to urban farming

**Manures and fertilizers used in urban farming:** Urbanites have a variety of sources for manures such as wastes of household compost and vermicompost which are either purchased from markets or prepared in the house itself. Besides, cow dung and Farm Yard Manure (FYM) are purchased from the Goshala located at various places of Hyderabad and Secunderabad city. Terracotta composting is also famous among the urbanites.

**Do You Know ?**

Urbanite **Mrs. Vijayalaxmi** created her own website for selling traditional and local seeds of vegetables and leafy vegetables from local farmers at Pune and Jammu. [www.MyEdibleGarden.in](http://www.MyEdibleGarden.in). Further, the site endeavored to design and make the tools and inputs necessary for urban farming in real time basis. The chief aim of starting this site is that, every urban dweller has to become producers rather than consumers for the promotion of sustainable future.

**a. Fish water as a manure source:** Two of the urbanites, Mr. Ravichandra Kumar of Dilshuknagar, Hyderabad and Major Vijay Uppal of Sainikpuri, Secunderabad, use fish tank water as the source of manure along with compost and cow dung. As far as Major Vijay Uppal's fish water is concerned, it is the simplest and non-commercial method. The water from the two fish tanks of 20-25 litre capacity is used as manure for crops. The other fish water model of Mr. Ravichandra Kumar's is commercial in nature and the edible fishes like Red snapper/snake headed fish (*Channa striata*) and Tilapia (*Oreochromis spp*) are grown. Water released from the fish tank is reused for crop production.

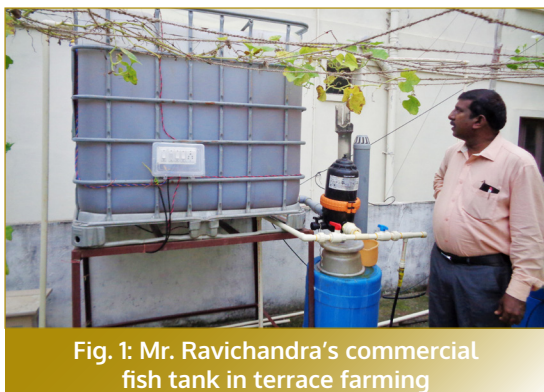


Fig. 1: Mr. Ravichandra's commercial fish tank in terrace farming

- b. **Information approaches for manures:** For cow dung, Goshalas are the preferred places and compost and vermicompost are prepared from biodegradable wastes of the households. In addition, the markets of Hyderguda and Musheerabad in Hyderabad are the ideal centers for the purchase of compost and neem manure such as neem seed powder, neem cake and organic manure as well. Moreover, the manures are also procured from sources like neighbors of similar interest and urban farms at the outskirts of Hyderabad city.

**Pesticides used in urban farming:** Most of the urbanites use neem oil as the organic solution against pest and diseases. It is available in the market at ease and supplied along with the urban farming kit given by Urban Farming Division (UFD). Importantly, the urbanites use homemade bio-solution to control pests and diseases. Of which, Bio-Liquid extract, Bio-Liquid and Amirthapani are mostly used by the urbanites.

**Knowledge management in urban farming:** Unlike farming in rural set up, urban farming uses the modern media and Information and Communication Technologies (ICTs) for ease of enhancing crop production. The ready available information and closed urban farming groups on Facebook i.e., MyediblegardenIndia (<https://goo.gl/wNvJZD>) serve as a store house of knowledge on urban farming. As the group has a common interest (urban farming), they post and share the content and ideas pertinent to urban farming.

- a. **Social media from production to marketing:** The WhatsApp group, Sainikpuri garden club and MyEdibleGardenIndia helps the urbanites to access the seeds for production, be it vegetable or greens seeds. Meanwhile, the excess of the produce is notified in the groups during harvest, hence allowing other members who are in need to get them as gift.

- b. **Social media for controlling pest and disease:** Urban farming makes use of social media for accessing the control measures in protection of crops. As soon as the crops identified with any pest or disease, the members take the picture and post in the Facebook group on urban farming or the Sainikpuri garden club. Interestingly the solutions are offered immediately if members know it. If they are not aware, they refer to Plantix app which helps in identifying the pest or disease.

- c. **YouTube for urban farming knowledge:** Most urbanites involved in urban farming out of passion and hobby, often sourced for know-how of the farming through videos on YouTube.

- d. **WhatsApp- Connecting urban farming:** Sainikpuri garden club, a WhatsApp group created by Mrs. Deepa of Sainikpuri to meet the information need for urban farming. It is

**Table 3. YouTube and the information approaches in urban farming**

S.N.	Sources	Remarks
1.	YouTube channel	There are a variety of YouTube channels which serve as the sources of information for crop production in urban farming.
2.	eTV Abhiruchi ( <a href="https://goo.gl/oH8Zfu">https://goo.gl/oH8Zfu</a> )	It feature the successful kitchen gardening of Hyderabad and Secunderabad cities and their good practices
3.	Nature's voice ( <a href="https://goo.gl/Y14rE7">https://goo.gl/Y14rE7</a> )	It covers the farmers who have been successful in natural farming. Importantly, it covers the urban farming.
4.	Gardens of abundance ( <a href="https://goo.gl/FkiE2K">https://goo.gl/FkiE2K</a> )	It posts the videos related to urban farms which are come under permaculture.
5.	Kitchen Garden ( <a href="https://goo.gl/PGthVz">https://goo.gl/PGthVz</a> )	It posts the videos related to basics on know-how of soil, compost, pot preparation for urban farming.

a unique initiative method to give extension advisory services for crop production among urbanites across the city of Hyderabad and Secunderabad.

**Today's scenario in urban farming:** The good practices are known for their practical applicability and are effective in production and protection of crops, be it practices associated with the preparation of growth media or the procedure and epitome followed in making of growth culture (CCP and CoS) or the preparation of home-made manure (kitchen compost, vermicompost, etc.) and pesticides (Bio-Liquid Extract and Bio-Liquid). Moreover, most of these good practices are undocumented and unknown to the other city residents who have been involved in urban farming.



Fig. 2: Mrs. Deepa uses Plantix App for diagnosing the pest

**Extension to promote urban farming:** Extension professionals make use of Facebook, WhatsApp, YouTube channels to diffuse and manage the knowledge regarding good practices followed in urban farming. The programmes telecasted through television channels about urban farming may be strengthened. Similarly, KVKs, Agricultural Technology Management Agency (ATMA), State Agriculture Department and MANAGE (National Institute of Agricultural Extension Management) are to involve in video documentation of good urban farming models and good practices for effective knowledge management. The good practices should also be recommended to the nutrition insecure households of both rural and urban areas by extension and ICTs.

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Complete report on 'Urban farming: Good practices and knowledge management' is available at [www.manage.gov.in](http://www.manage.gov.in)

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Disclaimer: The views expressed in the document are that of the authors based on the research conducted and are not necessarily those of MANAGE or the officials interacted with during the study.

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