

Kottayam Medical College.

Rajendran says- "Pilgrim centers can solve their waste disposal problem through community biogas plants. The project for construction of community biogas plant at Palani temple is under progress. The gas generated from the excreta of pilgrims will be used to light up the new bus stand there. I have submitted a plan to the Kerala Government for setting up a 3 MW power plant at Sabbatical. About 800 toilets are there in Sabarimala and roughly 45 Ton human waste is produced daily during pilgrim season. According to my estimate the daily excreta of a person is worth Rs.6/- in terms of the energy that it will produce. One need not grimace at the thought of using methane gas generated in public toilets for cooking purpose " explained Rajendran.

Rajendran won energy conservation awards from Government of Kerala, Government of Tamilnadu, Administration of Pondicherry and Andaman Nicobar Administration. Colombo Open University gave honorary Doctorate to Rajendran considering his ideas and contributions in this field. Rajendran's latest initiative is to use methane generated from community biogas plants as fuel for automobiles and trials are going on.



Green Shield against global warming

Cover the concrete jungles with vertical gardens, this will save city dwellers from scorching heat, yield vegetables for the home and serve as a green armor against global warming" says John Stephen. The tall vertical GI frames on his terrace are thickly covered with climbers like pumpkin, bearing fruits in abundance. John Stephen, a USA returnee is offering a novel greening concept for the cities, "Oxy farming".

John Stephen returned to Vennala, Kochi in 2008 from the US after living there for 33 years since he was 30 years old. In the USA, even though John was working in the Oil Industry, he interacted with the farmers and cowboys there. Having a rural background, interest in farming was there with him since early childhood. This motivated John to do research on high intensity farming in lesser area. Oxy farming concept was evolved thus. He field- tested the concept in US and it proved to be a huge success.

"The surface land has less than 3% oxygen in soil and roots need 5 10% oxygen for healthy growth. The heat radiation from the sun dries up the soil moisture and there is almost 7 hours of heat

radiation upon the vegetable soft skin. Even human beings cannot stand one hour of sun heat and the sun's extreme heat kills all micronutrients in the vegetables. What we need is vegetables with good Oxygen and nutritional content in it. So instead of soil I grow them in fiber basket (Baskets filled with coir fiber). 90% of our energy comes from oxygen; only 10% comes from food and water. If oxygen supply to the cells gets reduced they become prone to diseases like cancer. So oxygen rich food is what we want"-says John.

A model of Oxy farming can be seen in John's house and terrace. The double storied house is covered with vines and creepers from ground portion up to the terrace. Plants that emit oxygen in abundance are grown around the house. According to John, vegetables and other plants are grown in his urban farm in an atmosphere having 21% Oxygen. Apart from growing them in fiber baskets water is sprinkled at the root zone through an automatic irrigation system. Bio-fertilizers, which are Microbial inoculants consisting of living cells of microorganism like bacteria, algae and fungi alone or combination, are supplied to the crops



In this method many types of oxygen rich green fodders like elephant grass, green leaves like moringa and different types of grains are fed to the cattle. They are grown in pollution free, comfortable surroundings with good aeration. According to John, the Oxy milk produced by the cattle grown under this system will be rich in nutrients and Oxygen.

“I established a small dairy in a village in Cochin, where I researched for three years on Raw Oxy milk production. The efforts bore fruits and I successfully achieved the know-how to produce Oxy milk through the many green fodders absolutely free from insects, bacteria, fungi and other pathogens. I have also developed a multi tier system in which cattle and fodder can be grown utilizing the vertical space. The fodder waste can be utilized for producing electricity for the unit” - says John.

At 70, John is still very energetic and healthy. He attributes this to his habit of consuming oxy vegetables, oxy milk, Oxy Alkaline water with 74 minerals and physical exercise through farming activities. “In Global Warming era, Vegetables and crops must produce good yields while at the same time conserving land and water should be of foremost importance. Only then we can be proud that we are leaving behind something wonderful for the future generation and not borrowing from the future for our livelihood. I am fully equipped with the know-how and the practical aspects of how to bring about this change and I am sure that likeminded people would accept them. I had discussions with ICAR (Indian Council for Agricultural Research) and they have shown keen interest in the concept,” says John.

Population growth, an expanding middle class with changing lifestyles and diets, and the urgent need to improve water, energy and food security for the poorest -all place growing pressure on limited resources. Green, sustainable and futuristic development pathways are need of the hour. The small steps put forward by these three individuals in this direction will have better and wider implications in the future. ■

though irrigation water. They make available all the nutrients including minor ones to the crops and helps in pathogen free productivity. Mist irrigation also work automatically enriching the atmosphere with moisture.

Five vertical GI frames erected on the terrace provide 500sq feet vertical atmosphere. Wines and climbers trailed on these frames act as green shields for the concrete structure. The frames also serve as a multi-tier system for placing fiber baskets planted with vegetables. The whole system reduces the effect of UV radiation and global warming, cut down atmospheric pollution, reduce electricity consumption by reducing heat absorption, act as Oxygen power houses, provide year round vegetables from minimum area with less labor and water and provide a cool and green city ambience. Temperatures are often a few degrees higher in cities than they are in their surrounding rural areas. This

temperature discrepancy is the result of a bizarre phenomenon known as the urban heat island effect. The green blankets of Oxy farming could also help to reduce this devastating situation.

“The terrace area of my home is about 1000sq feet. The whole area is utilized for producing Oxy Vegetables and wine Grape farming. The productivity of vertical farming is 5 to 9 times that of conventional farming. Climate change could lead to even warmer temperatures in cities but the new atmospheric technology brings forth good harvest even in extremely bad weather conditions. These vegetables and fruits have higher quantity of oxygen with higher levels micronutrients. I have been doing this for the past 5 years and I think that it is my moral responsibly to introduce more and more people to this farming method”-John explains.

Another concept that John puts forward is the production of Oxy milk.