PROTECTED CULTIVATION OF VEGETABLE CROPS

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SOIL LESS HORTICULTURE-

Indian agriculture sector to go Dutch in future? The Indian agriculture sector may adapt Dutch technology for farming in the future because of its promising output. A consortium of Dutch companies is planning to launch two projects, one in Uttar Pradesh and the other one in Himachal Pradesh. The consortium aims to make Indian farmers aware of the high-yielding Dutch farm production technology. It wants Indian farmers to know that agriculture can be a lucrative business

China's largest high-tech vegetable greenhouse

The Chinese horticulture venture Kaisheng Haofeng has ambitious plans to become one of China's largest high-tech greenhouse growers. The joint venture between the Chinese CNBM group and Triumph Haofen Smart Agriculture Co., Ltd invests heavily in setting up new high tech greenhouse operations. The group recently planted the first tomato crops in a brand new 26-hectare glass greenhouse in Dezhou.

An underwater greenhouse

The air of the greenhouse stands at 79 degrees with humidity hovering around 83 percent. That's a pretty good environment for a typical plant. But this is no ordinary greenhouse: its 20 feet under water, anchored to the floor of the sea just off the coast of Noli, Italy. Over here, experiments are underway with submerged agriculture. According to researchers, the project is interesting for countries with little or no farmland. Various plants are grown inside of sea through containers on the sea floor. The containers are not too deep so that they can be reached by sufficient daylight to grow the cumin, strawberries and dill inside. The balloon-like biospheres take advantage of the sea's natural properties to grow plants. The underwater temperatures are constant, and the shape of the greenhouses allows for water to constantly evaporate and replenish the plants. What's more, the high amounts of carbon dioxide act like steroids for the plants, making them grow at very rapid rate. Belgium: Indoor farming technology for mars biosphere Will the first people to bake and eat bread on Mars do it due to a Belgian breakthrough? This is the challenge facing the Space Bakery project, a unique consortium composed of seven Belgian organisations using technology provided by Urban Crop Solutions. However, before they use their research to help feed the first people on the red planet later this century, the project aims to have a clear impact on Earth today. The project will focus on how we can produce food more sustainably and will help provide a nutritional staple food for many regions across the globe. The consortium has just been awarded a subsidy of 4.5 million euros by the Flemish Community (VLAIO, Flanders Innovation & Entrepreneurship), contributing to a total of over 6.3 million euros in funding.

Moscow:

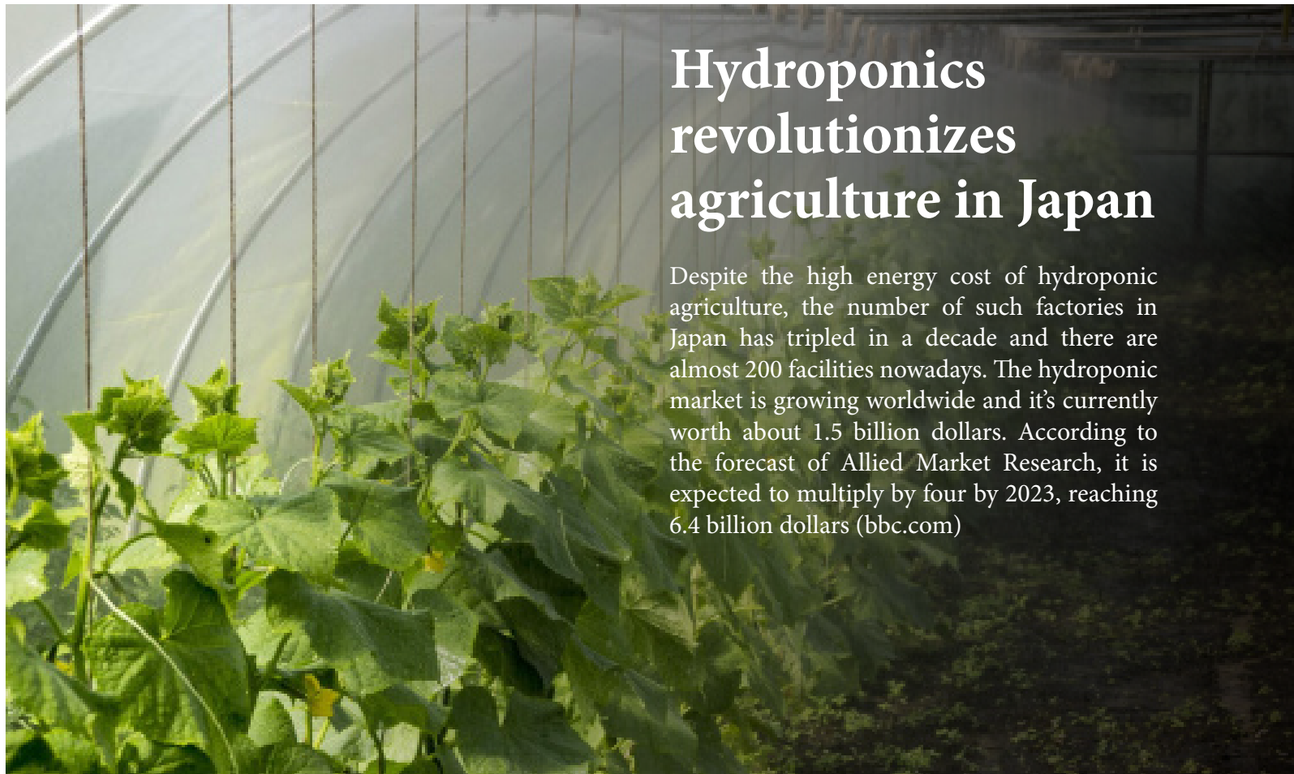
A vertical greenhouse complex appeared in A unique vertical farm opened in Moscow. Vertical farming is rather widely spread around the world and the technology is applied more and more often in projects with bigger amounts of investments and smaller acreages. Due to multiple layers there will be picked 10 times more greens here than in a traditional greenhouse. The innovative complex will grow lettuce, herbs and microgreens with the use of hydroponics and organic fertilizers only. Close water circuit allows for saving resources and minimizing the negative effect on the environment. The enterprise employs 280 local dwellers. With the coming expansion, up to 700 associates will be needed.

Aeroponic cultivation technology

The use of aeroponic farming technology is not only to cultivate without the soil but more importantly, it can develop into building a three-dimensional spatial farming model. Other surfaces, such as walls and rooftops of urban buildings can be cultivated, which can create a real urban forest-like ecological space and is an important technical support for building a sustainable city.

Aquaponics - the future or fad?

The experts have conflict views. Some question its economic viability. Others support as a critical part of our food production system that we need. Others think aquaponics will always be a niche sector. It maybe it's a hundred years into the future, when we've destroyed the planet and we all have to live inside greenhouses (Aquaculture North America (Matt Jones)



Hydroponics revolutionizes agriculture in Japan

Despite the high energy cost of hydroponic agriculture, the number of such factories in Japan has tripled in a decade and there are almost 200 facilities nowadays. The hydroponic market is growing worldwide and it's currently worth about 1.5 billion dollars. According to the forecast of Allied Market Research, it is expected to multiply by four by 2023, reaching 6.4 billion dollars (bbc.com)

ROBOTIC AGRICULTURE

Australia's first fully robotic end-to-end vertical farm

After four years of research and development, the Stacked Farm's fully automated end-toend vertical farm will soon be supplying leafy greens to national wholesalers including Sumo Salad, QSR, Dnata, Crown Resorts and Morco Fresh. Stacked Farm CEO Conrad Smith says the farm is commercially viable, scalable and competitive, from seedling through to packaging with leading-edge technology. (Business News Australia (Matt Ogg)

Weed removing robot

FarmWise Labs Inc. develops robots for the agricultural sector, and has developed a robot that kills weeds while leaving the crops untouched. The machine has already weeded over 10 million plants. The machine reduces labor and offers a chemical-free solution to weeds. The company has raised $14.5 million in a Series A round.

Robot reaps ripe tomatoes Root AI, a Massachusetts-based company, has developed a robot capable of picking tomatoes by ripeness and quality. Josh Lessing, Root AI's Co-Founder and CEO, says while the utilization of robotics isn't new, the industry is now fine-tuning the technology, providing exciting opportunities for the produce industry

DRONE IN AGRICULTURE

Unmanned aerial weed control

Scientists with the Weed Science Society of America (WSSA) say unmanned aerial vehicles (UAVs) may soon revolutionize weed management. (Weed Science Society of America)

Tower gardens using LEDs

Sky High, a research programme led by Professor of Horticulture & Product Physiology Leo Marcelis, which aims to bring about a revolution in vertical farming, received a total grant of €5 million. By growing plants in layers on top of each other and illuminating them with special LED lights, you can produce fresh vegetables all year round, anywhere in the world, and under all weather and climate conditions (Wageningen University & Research)

Indoor ag seen as key to feeding planet

Recent Controlled Environment Indoor and Vertical Food Production Coordinated Research Conference held at Southern Arizona's world-famous Biosphere2 research laboratory. "Open field agriculture in the U.S. is the largest in the world aimed at feeding the largest number of people, but there are limitations in land, labor, and resources," said co-coordinator Gene Giacomelli, estimating that the current greenhouse-grown vegetable effort represents slightly more than 1.3 million acres under glass.

Mini greenhouse for microgreens The fully automated "Plantcube" greenhouse from Munich-based Company Agrilution offers a closed ecosystem for plants and, according to the manufacturer, optimal growth conditions. Irrigation is done automatically.

PROTECTED OLERICULTURE

-Plasticulture