


FOURTEENTH CONGRESS OF THE REPUBLIC)
OF THE PHILIPPINES)
Second Regular Session)

8 SEP 29 1973

SENATE

S. No. 2640

RECEIVED BY: 

Introduced by Senator Manuel "Lito" M. Lapid

EXPLANATORY NOTE

Article 14, Section 10 of the 1987 constitution provides that "Science and technology are essential for national development and progress." As such the State shall give priority to research and development and their utilization for the improvement of the lives and welfare of the general public.

One area where research and development can be applied is the use of state-of-the-art technologies to improve agricultural production and ensure food security. Aeroponics technology can be applied in the production of agricultural crops and vegetables.

Aeroponics is the process of growing plants in an air or mist environment without the use of soil or an aggregate medium. Aeroponic culture differs from both hydroponics and in-vitro (plant tissue culture) growing. Unlike hydroponics, which uses water as a growing medium and essential minerals to sustain plant growth, aeroponics is conducted without a growing medium.

All over the world, aeroponic growing is considered to be safe and ecologically friendly for producing natural, healthy plants and crops. The main ecological advantages of aeroponics are the conservation of water and energy. When compared to hydroponics, aeroponics offers lower water and energy inputs per square meter of growing area.

Plants and agricultural crops grown using aeroponics spend 99.98% of their time in air and 0.02% in direct contact with hydro-atomized nutrient solution. The time spent without water allows the roots to capture oxygen more efficiently. Furthermore, the hydro-atomized mist also significantly contributes to the effective oxygenation of the roots. Aeroponics allows more control of the environment around the root zone, unlike other plant growth systems, the plant roots are not constantly surrounded by some medium (as, for example, with hydroponics, where the roots are constantly immersed in water).

Aeroponic systems are more cost effective than other systems. Because of the reduced volume of solution input, less water and less nutrients are needed in the system at any given time compared to other nutrient delivery systems. The need for substrates is also eliminated, as is the need for many moving parts, resulting in lowered manufacturing cost and reduced maintenance costs.

With aeroponics, the deleterious effects of seed stocks that are infected with pathogens can be minimized due to the separation of the plants and the lack of shared growth matrix. In addition, due to the enclosed, controlled environment, aeroponics can

be an ideal growth system in which to grow seed stocks that are pathogen-free. The enclosing of the growth chamber, in addition to the isolation of the plants from each other helps to both prevent initial contamination from pathogens introduced from the external environment and minimize the spread from one plant to others of any pathogens that may exist.

This proposed measure seeks to promote the use of aeroponics technology in agricultural production of high value-added crops and vegetable to further increase volume of agricultural production and ensure food security.

In view of the foregoing, approval of this bill is earnestly requested.


MANUEL "LITO" M. LAPID
Senator *mi*

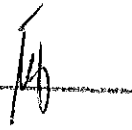
FOURTEENTH CONGRESS OF THE REPUBLIC)
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8 SEP 29 P3:45

SENATE

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Introduced by Senator Manuel "Lito" M. Lapid

AN ACT
PROMOTING THE USE OF AEROPONICS TECHNOLOGY TO BE APPLIED
IN AGRICULTURAL PRODUCTION OF HIGH VALUE-ADDED CROPS AND
VEGETABLE FARMING TO ADDRESS FOOD SECURITY CONCERNS OF
THE COUNTRY AND JUDICIOUSLY UTILIZE SCARCE FERTILE LAND
RESOURCES

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

SECTION 1. Short Title. – This Act shall be known as the **"Aeroponics Technology in Agricultural Production Act of 2008"**.

SEC. 2. Declaration of Policy. – It is hereby declared the policy of the State to reaffirm the fundamental right of every person to adequate food and to be free from hunger. The achievement of self-sufficiency in food production is therefore adopted as a primary State policy. Towards this end, key reforms for the advancement of, and support to agricultural advancement in technology adaptation is hereby promoted in order to ensure the food security of our country.

Towards this end, the State commits itself to the adoption of state-of-the art technologies and promote the development of modern, appropriate and cost-effective and environmentally safe agricultural technology in order to ensure and provide food security for the country.

SEC. 3. Definition of Terms. - For purposes of this Act, the term **"Aeroponics"** shall refer to the process of growing vegetation in an air or mist environment without the use of soil or an aggregate medium. Aeroponic growing is considered to be safe and ecologically friendly for producing natural, healthy plants and crops.

SEC. 4. *Use of Aeroponics Technology.* – The Department of Agriculture (DA) is hereby mandated to promote the use of aeroponics agriculture as an instrument to further improve the production of high-value added crops and vegetables in the country and address the food security concerns in the country.

Idle government lands owned by either national or local governments or available land resources in state universities and colleges shall be considered for growing crops and vegetables using aeroponics agriculture.

SEC. 5. *Comprehensive Research on Aeroponics Technology Applied in Agricultural Production.* - For purposes of this Act, the Secretary of the Department of Agriculture (DA) is hereby mandated to conduct a comprehensive research and information drive on aeroponics technology applied in agricultural production in order to further improve food production.

It shall support research activities to expand the knowledge and understanding of aeroponics technology to be used in agriculture production, including a renewed investment into advance technology research in order to adopt state-of-the-art technologies to promote agricultural production in our high value-added crops and vegetables.

SEC. 6. *Inclusion of Aeroponics Technology in Agricultural Training.* – Aeroponics technology as used in agricultural production shall be integrated in the academic curriculum for secondary and tertiary level students of both public and private academic institutions studying courses on Agriculture, Practical Arts, Home Economics and/or other subjects related to agriculture.

The Department of Education (DepEd), in coordination with the Commission on Higher Education (CHED), shall promulgate the necessary rules and regulations for the implementation of this Section within six (6) months from the date of effectivity hereof.

SEC. 7. *Appropriation.* – The amount necessary to carry out the provisions of this Act shall be included and incorporated in the annual general appropriations of the Department of Agriculture (DA), Department of Education (DepEd) and Commission on Higher Education (CHED).

SEC. 8. *Implementing Rules and Regulations (IRR).* - Within six (6) months from the date of effectivity of this Act, the DA, in consultation with the Department of Science and Technology (DOST), shall promulgate the necessary implementing rules and regulations to implement the provisions of this Act.

SEC. 9. Separability Clause - If any provision or part hereof is held invalid or unconstitutional, the remainder of the law or the provision not otherwise affected shall remain valid and subsisting.

SEC. 10 Repealing Clause - Any law, presidential decree or issuance, executive order, letter of instruction, administrative order, rule or regulation contrary to or inconsistent with the provision of this act is hereby repealed, modified or amended accordingly.

SEC. 11. Effectivity Clause. - This Act shall take effect fifteen (15) days from the date of its complete publication in the Official Gazette or in at least two (2) newspapers of general circulation.

Approved,