Joint Research of Cultivation Technology for Plant Factories with Glutathione

SPREAD Co., Ltd. (HQ: Kyoto, Japan; CEO: Shinji Inada; hereinafter, “SPREAD”), JX Nippon Oil & Energy Corporation (HQ: Tokyo, Japan; CEO: Tsutomu Sugimori; hereinafter, “JX Nippon Oil & Energy”) and Okayama Prefectural Technology Center for Agriculture, Forestry, and Fisheries, Research Institute for Biological Sciences (Lab: Okayama, Japan; Director: Tomonori Shiraishi; hereinafter, “RIBS Okayama”) have made an agreement for the joint research of cultivation technology for plant factories using artificial lighting (hereinafter, “plant factory” or “plant factories”) with Glutathione.

Glutathione is a tripeptide, and is known for its function to promote the production of crops through the activation of photosynthesis. However, the effects vary by duration and quantity of administration of Glutathione. The effective use of Glutathione resulted in a successful 40% increase in productivity for the harvest of potatoes in research by RIBS Okayama.

Joint research will be conducted to verify the optimized administration and profitability by experiments shown below. It is expected that vegetable cultivation at plant factories will play a major role as a measure against the risk of a destabilized food supply due to the frequency of extreme weather conditions, such as torrential rain and intense heat waves, which have occurred in recent years and soil contamination and adverse effects on people from excessive usage of pesticides.

SPREAD and JX Nippon Oil & Energy will continue to put efforts towards overcoming the world’s agricultural and food problems by creating innovations for sustainable vegetable production which enables stable food production in the world without influence of climate change.
News Release

< Description of joint research>
1. Duration 1 year from September 2016 (Planned)
2. Role of each company
   - RIBS Okayama: Considers the way of administration of Glutathione (quantity and duration)
   - SPREAD: Generates the obtained data for the administration of Glutathione at the plant factory
   - JX Nippon Oil & Energy: Analyzes the obtained data, evaluates the profitability and provides the know-how

<First Research>
RIBS Okayama will monitor the growth speed and cultivation period of lettuce depending on the way Glutathione is administered (quantity and duration).

<Second Research>
Based on the first research, SPREAD will administer Glutathione as a fertilizer for lettuce cultivation at Kameoka Plant run by SPREAD. JX Nippon Oil & Energy will analyze the obtained data and evaluate it for the profitability.

< Company description>
SPREAD Co., Ltd.
Establish: 5 January, 2006
Address: Kyoto Research Park #8, 90 Chudojiawata-cho, Shimogyo-ku, Kyoto
Capital: 87.4 million yen
Business activities: Plant factory operation and vegetable production
URL: http://www.spread.co.jp/en

SPREAD has managed a plant factory as the leading company to pursue sustainable farming and overcome global agricultural issues and food problems. SPREAD currently manages the Kameoka Plant (Kyoto, Japan) which is the largest single lettuce factory in the country for vegetable cultivation that produces 21,000 heads of lettuce every day, and sells products under the “Vegetus” brand at 2,100 outlets across Japan.
News Release

JX Nippon Oil & Energy Corporation

Establish : 10 May, 1888
Address : 1-2 Otemachi 1-chome, Chiyoda-ku, Tokyo
Capital : 139.4 billion yen (100% investment of JX Holdings, Inc.)
Business activities : Refining and marketing of petroleum and petrochemical products
Importing and selling of gas and coal
Supply of electricity
Developing, manufacturing and marketing of fuel cell, solar power generation and storage batteries
URL : http://www.noe.jx-group.co.jp/english

JX Nippon Oil & Energy has sold Astaxanthin as the natural pigment for color improvement for salmon in Europe and the USA, and is aiming to expand its health and nutrition related businesses with its know-how of the bio-business.

<Reference>
Okayama Prefectural Technology Center for Agriculture, Forestry, and Fisheries, Research Institute for Biological Sciences (Okayama Prefecture)

Establish : 1996
Address : 7549-1 Yoshikawa, Kibichuo-cho, Kaga-gun, Okayama
Research activities : Mass-producing, quality improvement and branding of bio-materials and food resources
Development of plant preserving technologies in the eco-friendly way
Nurturing new cultivar
Research and Development of functional materials generated by microbial enzymes
URL : http://www.pref.okayama.jp/soshiki/203

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