

August 31, 2015

Taikisha Ltd.

**Taikisha wins an order for a full-artificial-lighting plant
factory project in Mihama-cho, Fukui Prefecture, for
NOUMANN**

- *Establishing the next-generation agricultural
business that provides one-stop solutions for
steps from production to processing***

Taikisha Ltd. (President: Satoru Kamiyama; Head office: Nishi-Shinjuku, Shinjuku-ku, Tokyo, ("Taikisha")) has received an order for a plant factory using only artificial lighting to be set up in Mihama-cho, Fukui Prefecture, from NOUMANN INC. (Head office: Mihama-cho, Fukui Prefecture, ("NOUMANN")). The project is aimed at establishing sixth-order industrialization* with a plant factory that can provide one-stop solutions for steps from production to processing in full collaboration with KIDAYA Corporation ("Kidaya Shoten") and Taikisha.

* Sixth-order industrialization: Business development with a view to covering steps from production to processing and marketing for agricultural products.

1. Summary of the project

Japan's second factory to produce crisphead lettuce in a large volume will begin operating in Mihama-cho, Fukui Prefecture. This project will be realized with Taiki Green Farm, our hydroponic plant factory system that employs only artificial lighting, while Kidaya Shoten provides guidance and cooperation on mass production. Kidaya Shoten is a partner that has experience in vegetable marketing in its Obama plant factory called GREENLAND (located in Obama City, Fukui Prefecture; Taikisha has installed Taiki Green Farm in 2013). This is the fourth plant factory to be one of Taikisha's projects including its overseas projects and leaf lettuce factories. An idle facility will be fully renovated for the project, and the operation is scheduled to start in January 2016.

According to the plan, the main produce of the factory will be crisphead lettuce and leaf lettuce, and they will be shipped out in ready-to-eat mixed lettuce packages. The initial production volume will be equivalent to approximately 6,400 heads of leaf lettuce per day. The factory is equipped with facilities to respond to HACCP (Hazard Analysis and Critical Control Point), which serves as a management system to address food safety and hygiene through manufacturing and processing processes.

The project foresees a future increase in production of up to 26,000 heads per day for export as there is ample land area for expansion on the factory site. This increase is also being considered for potential expansion into the Middle East and other Muslim regions where outdoor vegetable farming is difficult, and preparations are under way toward obtaining Halal certification.

2. Background to the successful order acceptance

Not only can Taikisha handle facility installation and commissioning of the system, but it can also provide integrated services to support mass production, marketing, and distribution for stable operations in cooperation with Kidaya Shoten, the leading company in the farming business. Furthermore, the high-density seedling device using an LED was newly developed and verified in Kidaya Shoten's Obama plant factory GREENLAND, and the application of the device has helped to significantly increase the average amount of crop. We consider these factors have led to the winning of this order.

3. Technology features

Taiki Green Farm can help produce a large volume of vegetables by design in a clean and pesticide-free environment regardless of the seasons or climate conditions and supply them at stable prices. Moreover, consistent production is promised at high efficiency and low cost with highly efficient reflective illumination panels as they can control the lighting hours best suited to the nature of plants. Our air conditioning technology prevents variations in temperature around multistage cultivation beds and maintains a constant environment in which to grow vegetables.

Furthermore, this new seedling method introduced for the project makes it possible to plant seedling lines three times more densely than the conventional methods. And the special-purpose LED lighting with new seedling method has greatly improved the use of the cultivation beds and the standardized growth speed.

4. Future

Factory vegetable markets are expected to grow substantially in order to respond to further escalating needs related to vegetable safety and quality. In addition to the two completed projects for mass-production plant factories in Japan, Taikisha is currently working on an overseas plant factory project (Long An Province, Vietnam) using the advantages of its overseas network. Our efforts continue to reinforce our plant factory business with environmental technologies both inside and outside Japan and make contributions to society.



NOUMANN Lettuce Mix Trial

■ Contact for inquiries from the media regarding the press release

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