

May 22, 2017
SPREAD Co., Ltd.

**Techno Farm Keihanna,
World's First and Largest Automated Vertical Farm
to Break Ground**

Kyoto, Japan - May 22, 2017 - SPREAD Co., Ltd. (www.spread.co.jp/en) announces the groundbreaking of its next-generation vertical farm, Techno Farm Keihanna in Kizugawa, Kyoto. Expected to be completed by the end of 2017, Techno Farm Keihanna will employ an automated cultivation system, and achieve the largest output of any indoor vertical lettuce farm in the world at 30,000 heads (3 tons) daily.

SPREAD has operated its current indoor vertical farm, Kameoka Plant (Kameoka, Kyoto) since 2007, which produces 21,000 heads (2 tons) of lettuce every day. Its lettuce is sold under the brand *VegetusTM* at more than 2,200 supermarkets and retail stores all over Japan. By March of 2013, SPREAD achieved profitability, which is said to be very difficult for the indoor vertical farming business. In 2014, SPREAD started developing its next-generation vertical farming system, *Techno FarmTM*, based on its accumulated know-how with the aim of global expansion.

Innovation at *Techno FarmTM* centers around three themes: reduced cost, limited environmental impact, and global adaptability. To achieve each of these goals, SPREAD has cooperated with Japanese equipment manufacturers to develop innovative technologies for water recycling, environmental controls, automated cultivation, and LED lighting. Moreover, the farm will also include specialized research and development facilities.

Scheduled for completion at the end of 2017, Techno Farm Keihanna will be the first of its kind, with shipping expected to start in 2018. The farm's daily output of 3 tons will be shipped to supermarkets all over Japan under the *VegetusTM* brand name.

SPREAD will continue to collaborate with innovative business partners from a variety of backgrounds as it works to produce ever greater technological innovation and make sustainable agriculture a reality.

News Release



Conceptual image of Techno Farm Keihanna

◆ Specification of Techno Farm Keihanna

Name	Techno Farm Keihanna
Location	9-5-5, Kizugawa-dai, Kizugawa, Kyoto
Facility type	Indoor vertical farm using artificial lighting (includes R&D facilities)
Site area	11,550 m ²
Building area	3,950 m ²
Building structure	Steel construction, 2 floors
Products	Leaf lettuce
Production capability	30,000 heads (3 tons) of lettuce/day
Building completion	December, 2017 (planned)
Operation/shipping	Expected from 2018

◆ *Techno Farm*TM

Techno FarmTM

Representing the next generation of vertical farming, *Techno Farm*TM builds on SPREAD's original indoor vertical farming technology to provide a further improved model for stable production in any climate. With its innovation centered around the themes of reduced cost, limited environmental impact, and global adaptability, *Techno Farm*TM aims to realize sustainable farming by enabling cultivation in locations experiencing agricultural challenges. The system's original name *Vegetable Factory*TM has been changed to the more universally appealing *Techno Farm*TM as part of SPREAD's overseas business expansion.

News Release

<Techno Farm™ Innovations>

Reduced environmental impact and operating costs

1. Automated cultivation

Reduces labor costs by 50%¹ by automating the labor intensive cultivation process (from seedling to harvesting)

2. Water recycling technology

Improves the recycling rate of water used for cultivation to 98% through water filtration and recycling.

3. Environmental control technology

Restricts variance in temperature, humidity, wind velocity, and lighting intensity

4. Specialized LED lighting

Reduces the energy consumption by 30%² by using LED lighting developed in-house and tailored to vegetables cultivated in indoor vertical farms.

5. IoT technology

Enables centralized remote collection and analysis of big data related to cultivation and operations

1: Compared to SPREAD's Kameoka Plant, 2: Compared to existing LED lighting

<Future Prospects>

SPREAD will partner with companies and organizations both domestically and globally to bring *Techno Farm™* to numerous locations around the world. Domestically, SPREAD will aim for a 10% share of the Japanese lettuce market by utilizing a franchise/ownership model to establish 20 facilities and a daily production capacity of 500,000 lettuce heads (50 tons). Globally, SPREAD will cooperate with local companies in each country and provide technology and support for distribution and sales. SPREAD will develop and propose business schemes applicable to each area.

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