

Soilborn

Future of Manure Utilization

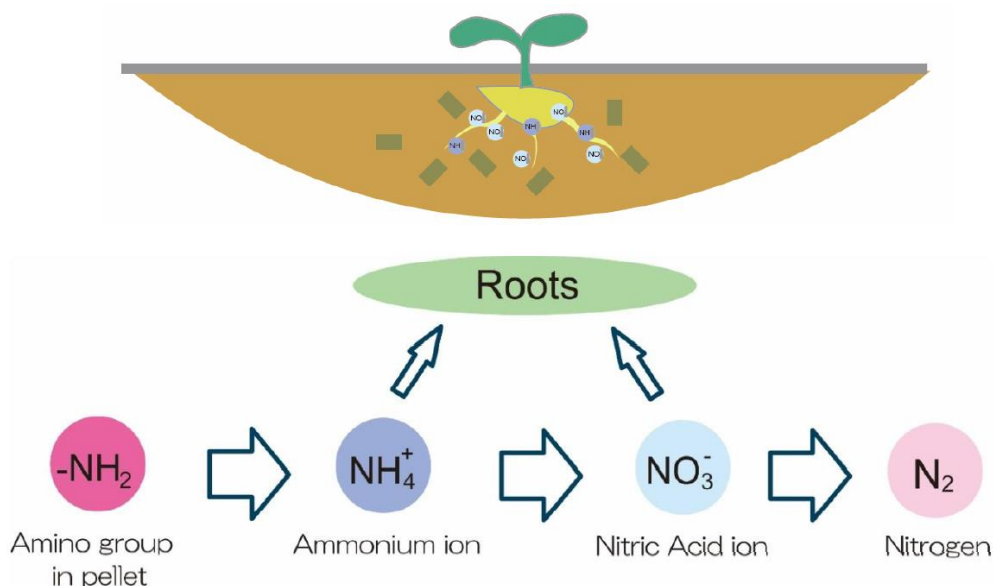
Background

1. In Japan almost all layer manure is being composted in following background.
 - 1) In 1999, manure from poultry and livestock farms was prohibited to take it out without processing by the law.
 - 2) Practical manure processing available at that time was only composting, to which Japanese government subsidized.

2. Composting manure has following problems.
 - 1) The pollution by ammonia emitted by composting.
 - 2) The value as fertilizer lowered:
 - (1) Nitrogen content lowered around into half.
 - (2) It is difficult to indicate the nitrogen content, in which to design fertilizing is difficult.
 - (3) As a result, egg farms are obliged to sell composted manure by far low price than the cost.

3. In HYTEM's industry-academia joint research with Professor Oba Gifu National University since 2013, through comparison research among dry manure pellet, composted manure and chemical fertilizer, it is proved that dry manure pellet is the most practical approach to utilize poultry manure as fertilizer.

Mechanism of dry manure pellet as fertilizer



Dry manure pellet ferments in soil. Ammonia becomes Ammonium ion due to its nature of being soluble in water. It also changes to Nitrate ion by virtue of the action of bacteria so as to be absorbed in the plants as nitrogen nutrients.

It contains water retention having moderate water holding ability (pF value).

The soil with dry manure pellet is alkalescent, which is more suitable for the sustainable agriculture compared to chemical fertilizer that makes soil acid.

Soilborn Program

Soilborn is the program to promote dry manure pellet, Next-Generation Fertilizer.

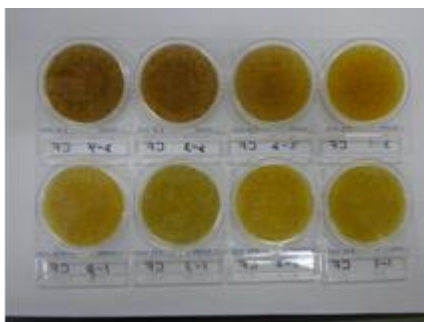
The program is targeting to promote dry manure pellet under **Soilborn** brand as an ideal high-quality organic fertilizer, ingredients of which guaranteed under an established quality control.

Points

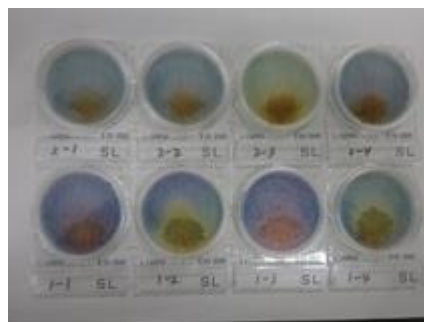
1. It is necessary to clean up farmers' memory created several decades ago that hen's manure without composting will damage roots due to heat generated in soil by composting development of bigger dry manure particles by sunshine drying at that time, while dry manure pellet does damage roots being distributed in soil by pellet.
2. It is necessary to form fair market price of this ideal high-quality organic fertilizer, which is entitled to get an official fertilizer certification under a governmental regulation.

1. Quality standards required for Soilborn

- ① 3 major fertilizer ingredients guaranteed
Nitrogen 4% Phosphorus 3% Potassium 2%
- ② Moisture content 10% Prevent mold, and can be stored over the sowing season
- ③ Disinfected No polluting soil



Before disinfection Colon bacilli

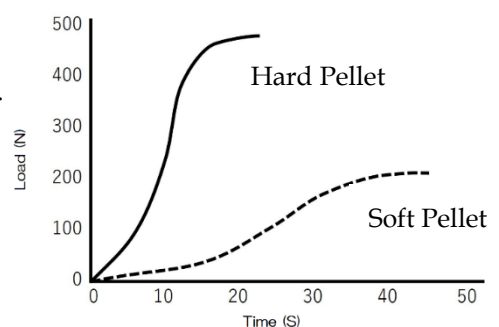


After disinfection

- ④ Controlled hardness Possible spreading to field by machine

2. Sales promotion under Soilborn brand

- Publicity in agricultural newspaper, magazines etc.
- Unification of bags to build Soilborn brand.



3. License of trademark rights of Soilborn


Trademark rights of Soilborn in Asia have been established by HYTEM Co.,Ltd. The rights will be licensed in actual cost to a company who is producing Soilborn, quality of which fulfilled along above quality standards, investing HYTEM Plate Dryer and HYTEM CCS Pellet Plant.

High Quality
100% Organic Fertilizer

Soil Revitalizer

Next-generation, all-purpose pellet fertilizer
using innovative technology to dry and sterilize fresh poultry manure
Gentle to soil,crops,and the environment

Soilborn



○Advantages

①Soilborn is all-round fertilizer efficient for all your plants,
And, it will give soil vitality, loosening soil, stimulating biological activity,
promoting better soil aeration and water retention.

②Sterilized! Safe and Nontoxic.

③Pellet is easy to sow, no risk to burn plant roots, and release nutrients slowly.

○Fertilizing Standards for 10 ares

Vegetables 150~180kg Paddy rice 80~100 kg

Indication by Fertilizer Regulation

Registered Number
Chiba Prefecture no.1298

Type of Fertilizer
Processed Hen Manure


Name of Fertilizer
Soilborn

Ingredients Guaranteed

Nitrogen	4.0%
Phosphorus	2.5%
Potassium	2.0%


Date Produced
Described at outside of this indication

Name & Address of Producer
Keiyo poultry Co.,Ltd
875 Kitanaka Tako Chiba Prefecture



Keiyo poultry Co.,Ltd
875 Kitanaka Tako Chiba Prefecture, JAPAN
TEL: 0479-05-5602
FAX: 0479-05-5603

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Bar Code

Prospect of Soilborn development

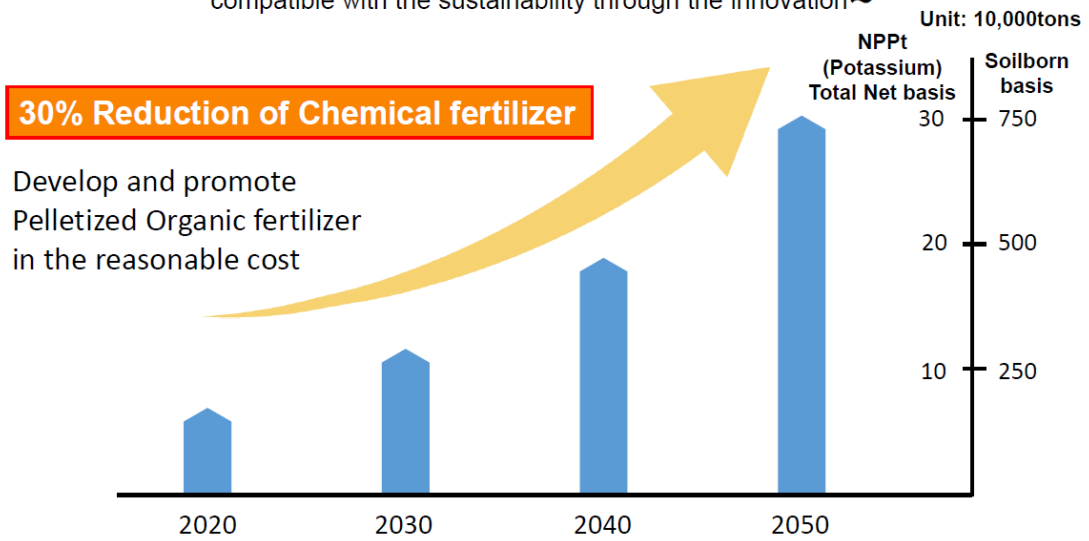
In 2020, the first Soilborn plant started at 1.4 million layer farm at Chiba prefecture, the east of Tokyo. At this stage ,most of Soilborn is exported to Southeast Asia such as Vietnam. For Japanese market. due to widely used composted layer manure, current delivery is less, however, step by step, it's demand is prospected to grow being recognized as the high quality organic fertilizer with guaranteed 4% Nitrogen, 3% Phosphorus and 2 % Potassium contents. That is, step by step, advantages of Soilborn as fertilizer is prospected to be recognized by farmers and farming companies.

Another factor of growing Soilborn prospect is chemical fertilizer's price increase due to limited natural resources. The current net sales price target of Soilborn in Japan is JY 40/kg Ex- farm. Even in this price level, fertilizer cost per 10 are is less than that of the chemical fertilizer.

On top of above trend, recent following wind is 30% chemical fertilizer reduction program by Japanese government targeting in 2050. The quantity of organic fertilizer to substitute 30% of the chemical fertilizer is 7,500,00 ton when by Soilborn, which is 3 times quantity compared to the quantity when all layer manure processed to Soilborn in Japan.

Green Food System program announced by Japanese government in May 2021

~Realize the improvement of the agricultural productivity
compatible with the sustainability through the innovation~



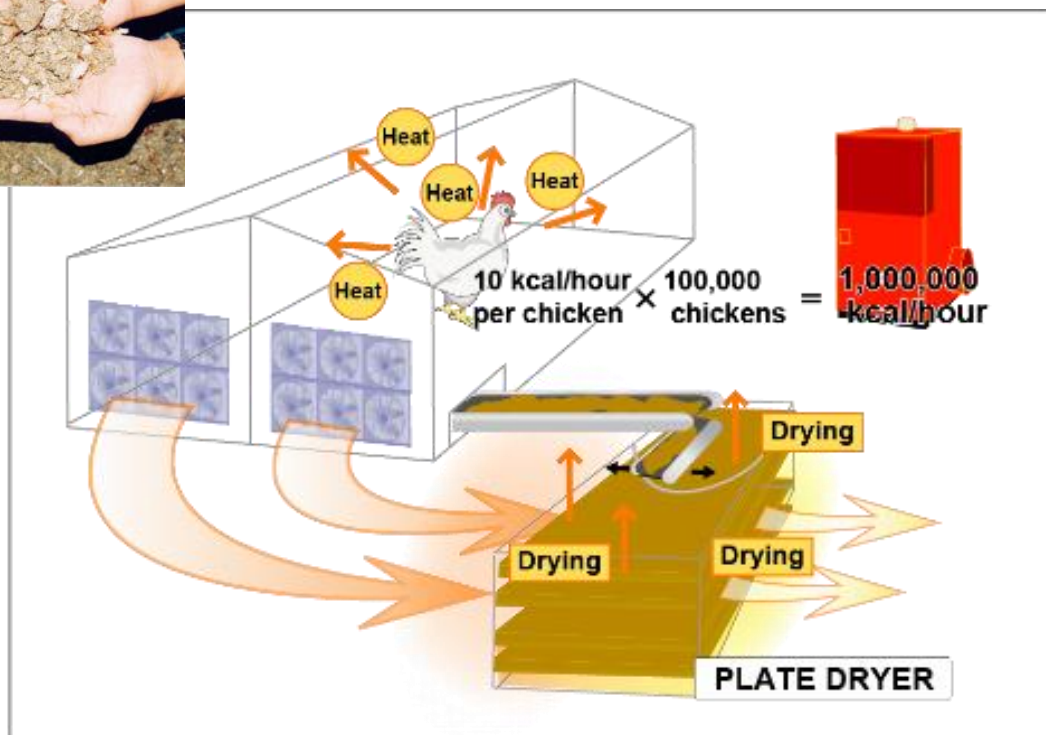
Soilborn will create the future of the high quality Organic fertilizer !!

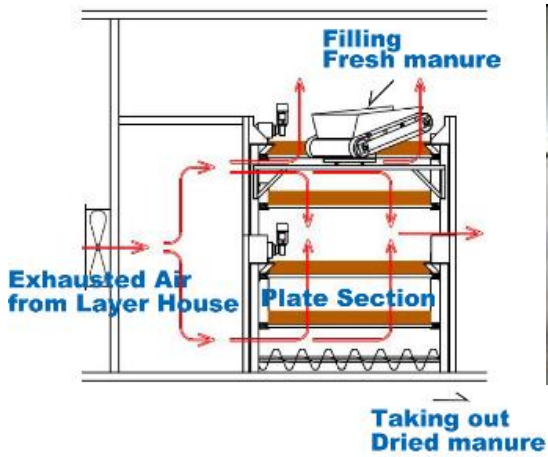
Equipment to produce Soilborn

HYTEM Plate Dryer and HYTEM CHIYODA CCS Pellet Plant, points of which can be found in HYTEM Egg Farm Automation Brochure Set.



HYTEM Plate Dryer





HYTEM CHIYODA CCS Pellet Plant

