Case Studies of Production in Japan Some Sample Processes for the Safe Production of Bean Sprouts

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Characteristics of Bean Sprout Production in Japan

- 1. Hygienic management of the production
 factory is upheld/managed by all staff
 (HACCP standards, etc.)
- 2. Grown without the use of agrochemicals or growth stimulators, using only well water (tap-water level)
- 3. There is an increasing trend to use heat pasteurization, without the use of chemicals, for the disinfection of seeds (machinery for this also aims at a thorough disinfection)

1. Hygienic Management of the Factory Case 1 : Work clothes

• Work clothes are worn when entering the factory area. Staff enter the factory after a disinfection process and washing their hands.



1. Hygienic Management of the Factory Case 2: Before entry

• Using a roller to rid all debris



Air shower to rid debris



1. Hygienic Management of the Factory Case 3: Before entry

Disinfection of boots before entry into factory
 washing feet

Area for



1. Hygienic Management of the Factory Case 4: Posting work process

• By posting up a notice about the work process, the work can be standardized and quality can be kept.



1. Hygienic Management of the Factory Case 5: Obtaining the ISO9001

• Making use of the ISO9001 for teaching the staff as well as controlling and managing quality.







This is an example where an ISO9001 is obtained to keep and manage the product quality.

1. Hygienic Management of the Factory Case 6: Example Separation of areas

• Heightening safety of the product by dividing the washing areas and the contaminated areas



1. Hygienic Management of the Factory Case 7: Sample Growing Process



- Many factories use containers and individual growing rooms.
 - 1) Because of the individual rooms for growing, it is possible to wash and disinfect the room after harvesting.

2) With growing containers, it is possible to realize high quality washing and disinfection prior to use.

1. Hygienic Management of the Factory Case 8: Growing Rooms



1. Hygienic Management of the Factory Case 9: Washing the Growing Room



1. Hygienic Management of the Factory Case 10: Interior finishes for the factory

• Devising strategies so that debris does not collect. (The boundary between wall and floor is finished in a curved surface.)



1. Hygienic Management of the Factory Case 11: Washing/ Disinfecting of Containers

Container rotating machine (for washing)

Container steam disinfection machine /



2. The Safe Production of Bean Sprouts Case 12: Research on cultivation



Product inspection in Lab.

Each grower has been researching and developing methods for producing safer sprouts.

2. The Safe Production of Bean Sprouts Management of Growing Area

1) Limited entry to growing area

Entry into the area should be limited to growing department staff.

2) Position of Full time manager for the growing department

Arrange for a manager responsible for everything related to growing. 3) Create and follow regulations for using machinery

Create rules for safety and safe production.

4) Make use of a work record

Make a checklist for keeping and managing the rules set, and for

standardizing the work.

2. The Safe Production of Bean Sprouts Case 13: Production Line

• Creation of a safe production line where no human hands touch the product until it has been packaged.



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2. The Safe Production of Bean Sprouts Sample Bean Sprouts

Product just after removal from growing room (with rootlets)



The rootlets are long because they have been grown without the use of chemicals

Rootlets are cut by machine to make the sprouts easier to eat.

2. The Safe Production of Bean Sprouts Sample Bean Sprouts

Product just after removal from growing room (with rootlets)



Product before packaging (rootlets cut by machine)



The great appearance of bean sprouts with rootlets removed led to an increase in consumption.

3. Washing/ Disinfection of Raw Material Case 15: Heat Disinfection Machine

• The method of using hot water for disinfecting seeds is coming to be widespread



Utilization of composting plant using vegetable scraps

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Total length 100m Fully matured in 25 days

<Exterior>







- ※1 Typical compost requires 1 year to fully mature
- ※ 2 Using over 80 degrees of fermentation heat pathogens and seeds of weeds will be eliminated



Effective soil microorganism count per 1g of compost



%Broth agar media/ 14th day from start of culture (diluted 1 0 ⁶ times)