

SuiSui System: A Method of Raising Strawberry by Capillary Watering[®]

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Strawberry (*Fragaria ×ananassa*) is one of the more important fruits eaten in Japan. In commercial production, 8,000 plants per 10 acres is required which is several times that of other fruit vegetables. Almost all strawberry farmers are producing their plants themselves; this increases labor costs and also increases the risk of diseases. In order to reduce labor costs and potential for disease, we developed the “SuiSui system” a method of raising runner plants by capillary watering.

In this system, you grow runner plants by planting the cuttings (runner tips) in a SuiSui pot with capillary watering. The SuiSui pots are placed on trays with special watering mats placed on a bench (Figs. 1 and 2).

The raised bench method will reduce a farm worker’s need to bend over. SuiSui pots can secure water supply to the plantlets from the bottom. This method will also greatly increase labor savings during planting because the rooted runner plants can be planted directly without removing them from the pots. In addition, since all the excess water flows out quickly there is reduced risk of damage to the plantlets.

Seedling raised through this method can grow large enough for planting out within 70 days, although there are some differences among strawberry cultivars (Table 1).

In this system the temperature inside of the pot is decreased by evaporation heat. This induces flower bud differentiation and contributes to simultaneous flowering as fast as that of raising plants under nocturnal cooling (Table 2).

You can prevent plant injury caused by *Glomerella cingulata* (Stoneman) Spaulding and Schrenk with usual methods of pest and disease control.

As shown in Table 3, the number of total flowers per plant of this method was larger than that of the plants produced by the normal method. Both apical inflorescences and axillary inflorescences were greater.

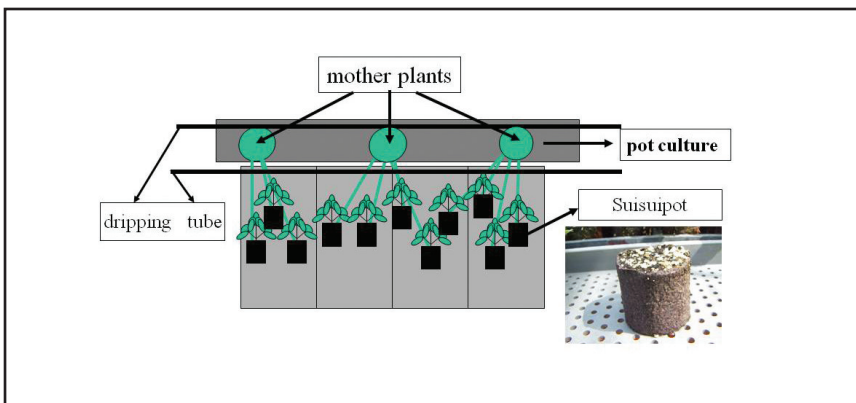


Figure 1. Diagram of the SuiSui system.

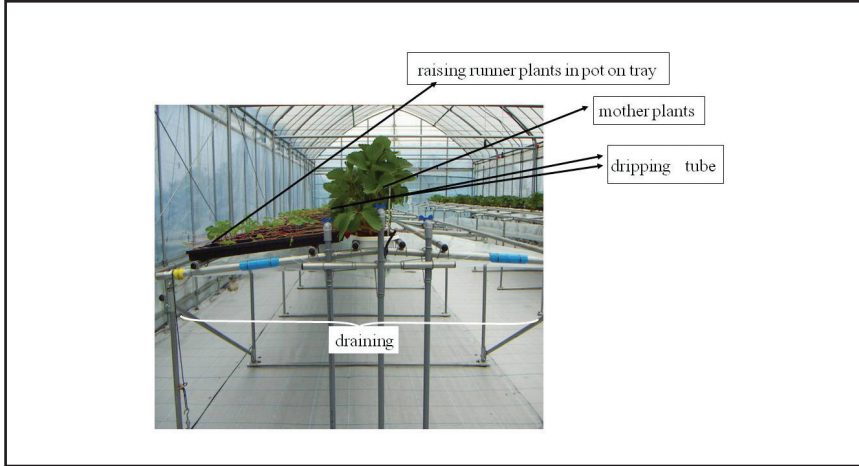


Figure 2. Picture of SuiSui system.

Table 1. Seedling quality of each variety grown in SuiSui pot.

Cultivar name	Number of leaves	Crown diameter (mm)
Toyonoka	4.2	8.4
Akihime	4.1	10.0
Sachinoka	4.6	8.9
Benihoppe	4.3	9.5
Sagahonoka	4.5	9.3
Amaatome	4.6	9.7

Date of planting in pot: July 1

Date of research: September 13

Table 2. Difference of flowering conditions between plants raised in SuiSui pot versus plastic pot.

Pot type	Flower bud stimulation	Number of seedling	Open-flowering	Number flowering	Flowering (%)
SuiSui pot	not	40	26-Oct	33	82.5
Plastics pot	nocturnal cooling treatment	30	24-Oct	20	66.7
Plastics pot	not	40	-	0	0

Data of planting in SuiSui pot: September 23

Date of planting in the plastic pot: September 17

Date of research: November 6

Condition of flower bud stimulation: nocturnal; cooling treatment: 17

Length of daytime: 8 hours per day for 21 days

Table 3. Total number of flowers in SuiSui pot versus plastic pot (variety: S. Achinoka).

Pot type	Flower bud stimulation	Number of seedling	Apical inflorescences floweres (no.)	Axillary inflorescences		
				Flowers per inflorescences (no.)	Inflorescence per seedling (no.)	Total number of flowers per seedling
Suisui pot	not	40	20.0	14.0	1.8	45.2
Plastics pot	nocturnal cooling treatment	30	15.0	14.0	1.5	36.0
Plastics pot	not	40	14.0	14.0	1.5	35.0

Date of planting and condition of flower bud stimulation are the same as in Table 2.

The number of flowers were researched between November and February.