Changes of green tea production etc. in Japan

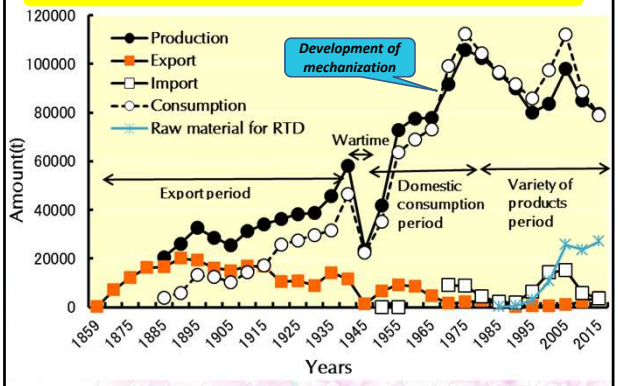
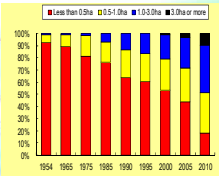


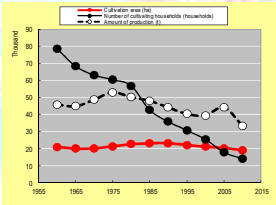
Figure 1: Changes of green tea production, export, import and consumption in Japa

Drastic reduction of farmers and expansion of scale

★Decrease in domestic consumption
★Reduction of tea price due to increase of RTD
★Sharp decline in the number of tea producers
★Increase cultivation area per household
⇒ Sharp change in mechanized cultivation



Changes in the number of households that cultivate tea in Shizuoka Prefecture



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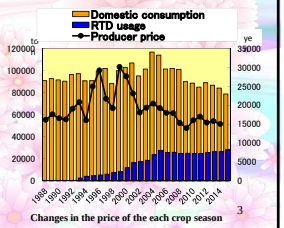
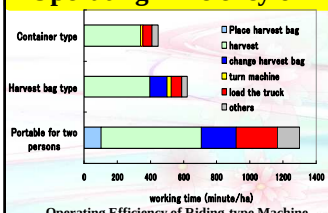


Changes in the price of the each crop season

Changes in plucking methods

Plucking changed from hand plucking to transportable plucking machines and then to riding-type plucking machines, and plucking efficiency improved remarkably.

Operating Efficiency of Riding-type Machine



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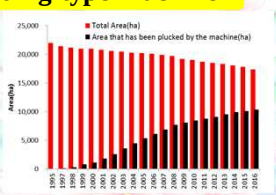


Changes in the introduction area of Machine

Container type

Harvest bag Type

The point of tea field for the use of plucking machine

☆*The plucking surface of tea is uniform*

☆*The growth of new shoot is uniform*

The pruning and trimming are important for mechanization

Portable pruning machine

Riding pruning machine

The point for making a plucking surface of tea uniform

1)Thickness of the branch which constitutes leaf layer is made uniform.
2)The size of a leaf is made uniform.
3)The aging of stem (branch) is made uniform.
4)From the same position to a new shoot coming out.

The control by trimming and pruning

Difference between the hand plucking and the mechanical plucking

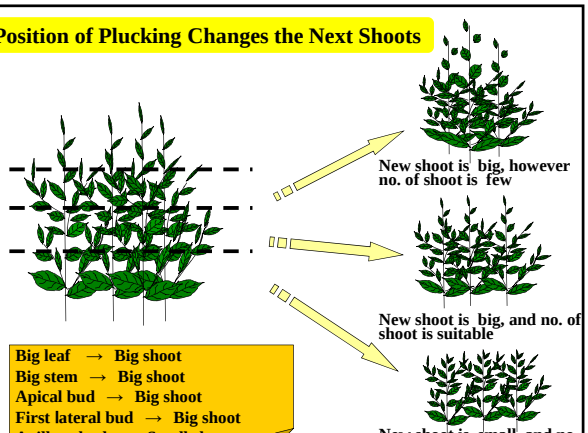
Hand plucking *The plucking of the shoot in which the delayed shoot and the new shoot were mixed is repeated*

Plucking *Plucking surface* *Plucking* *Plucking surface*

Mechanical plucking *The plucking of the only new shoot by skiffing*

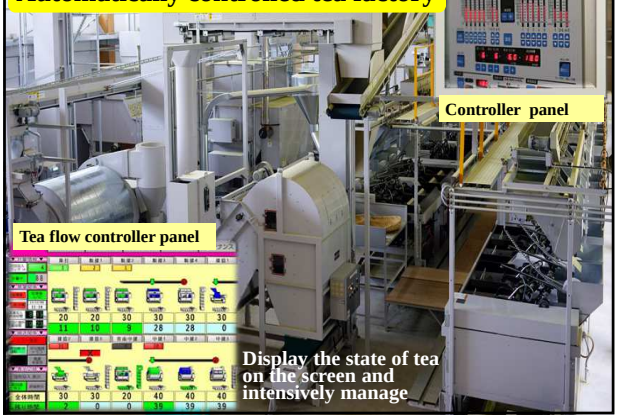
Plucking *Plucking surface* *Skiffing* *Plucking* *Plucking surface*

Position of Plucking Changes the Next Shoots

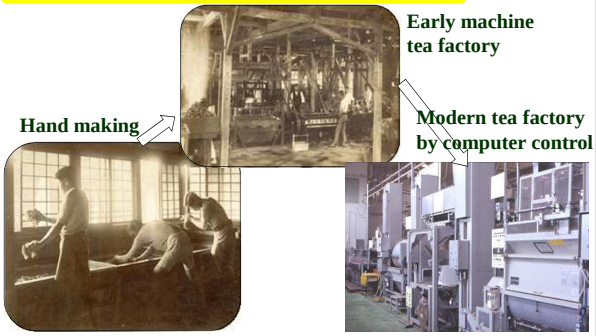


Big leaf → Big shoot
Big stem → Big shoot
Apical bud → Big shoot
First lateral bud → Big shoot
Axillary bud → Small shoot

Automatically controlled tea factory

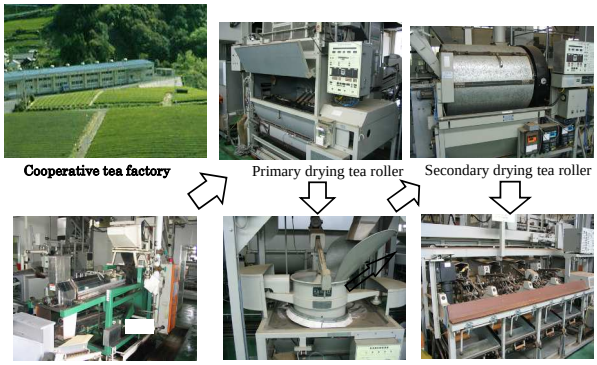


Changes in Japanese tea processing



Manufacturing has been mechanized from hand making, and recentry by technologically innovating to automation with sensor and computer control, we have established Japan's unique production processing

Making Process of Japanese Green Tea



Modern Crude Tea Factory

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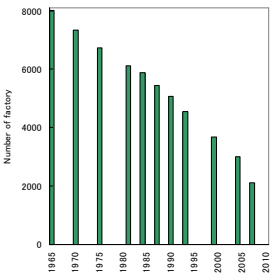
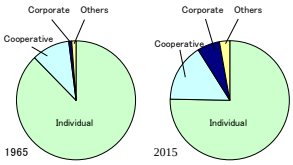


Trend of the number of crude tea factory in Shizuoka



The ratio of factory forms

Corporate Factory

Various new machines for making low cost tea

Drum type withering machine

Pan fired steamer

Superheater

Tea furnace （Tencha-ro)

Tea furnace （Tencha-ro)

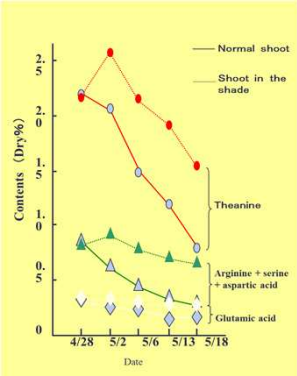
Covering Culture

Matcha

Tencha is matched by grinding in stone mill

to produce high-grade tea, Gyokuro and Tencha, which are known as the finest tea in Japan, is made from the leaves grown under the ceiling-shelf covering.

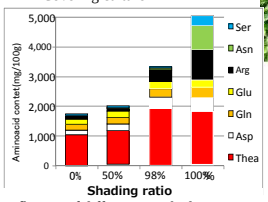
Umami increases by Covering Culture



The tea shoots increase the amino acid content by blocking the sunlight

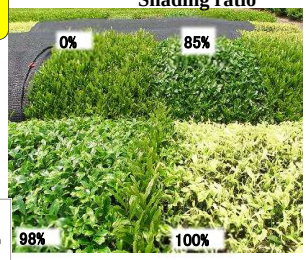
Changes in quality by shading cultivation

Covering culture



Influence of difference in shading ratio on amino acid content

Shading ratio



Shading ratio 100%(Left)、0%(Right)