

Trying to Layer Cherry Blossom Tree ‘Somei-yoshino’

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INTRODUCTION

‘Somei-yoshino’ cherry (*Prunus* × *yedoensis* (Matsum.) Masam. et Suzuki) (syn. *Cerasus* × *yedoensis*) is one of the most popular flowering trees in Japan, and numerous Japanese have a deep attachment to the flower and the trees.

During the autumn of 2018, ‘Symbolic 3 ‘Somei-yoshino’ trees at the Faculty of Science, Ehime University were scheduled to be cut down because of expansion work for a road. In March, I asked the following question. Would it be possible to raise clonal nursery stock from these trees?

Generally, the propagation of this cultivar is by grafting onto a rootstock of *C. speciosa* (Koidz.) H. Ohba. But the rootstocks were not prepared to this appropriate time of the grafting. Therefore, I tried propagation by cuttings and layering.

MATERIALS AND METHODS

Plant Materials

The tested trees were planted in the west side of the campus (Bunkyo-cho, Matsuyama, Ehime prefecture). Their presumed age was over fifty years. The 3 trees were planted in a line north-south, hereinafter, this is called north tree, center tree and south tree

Layering Methods

Layering treatment was applied to five branches on each tree (total 15 branches) on May 15, 16 and 21, 2018. The previous year’s long branches with the long of 50-100 cm were selected for this management, but, only one current year’s branch was managed in north tree.

The girdled section was packed with wetted sphagnum and wrapped with plastic film with a plastic straw in the upper part of the wrapping. This was finally covered by aluminum foil (Figures 1 and 2).

The layered branches had water poured through the plastic straw, every 2-3 days to keep the sphagnum moist.

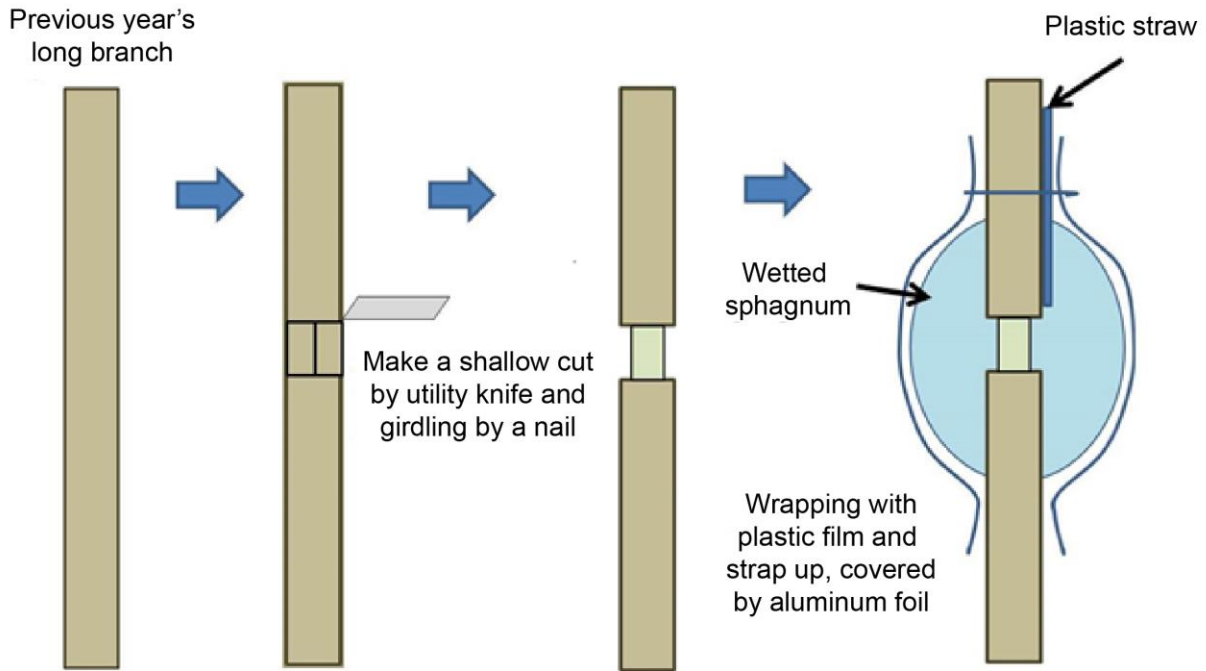


Figure 1. Outline of the layering managements to ‘Somei-yoshino’ cherry.



Figure 2. A layering managed previous year's long branch of ‘Somei-yoshino’ cherry.

For confirmation of rooting, one layering managed branch of the center tree had the aluminum foil cover removed on August 7, and the result showed vigorous rooting.

The rooted managed branch was removed from tree, planted in a plastic pot (a diameter of 15 cm, a height 17 cm, 1.9 L) by mixed soil, cultivated in 60-70% shaded plastic house, irrigated by 2 minutes mist at 90 minutes intervals in the daytime. The other 14 layered branches were removed on August 28, 2018, planted and growing in the same way.

Cutting Methods

For cutting, current year's long branches were removed from 3 trees on June 8, 2018. The branches were clipped to stem segment 3-7 cm each with more than 2 leaves. The basal leaf was removed, and the remaining leaves cut in half. The cuttings were sorted by with or without apical bud and the base soaked in tap water or the Oxyberon SL (indole-3-butyric acid; Bayer Crop-science Co., Ltd.) solution diluted 50 times with water for approximately 15 hours. After treatment, cuttings were put into propagation bed filled up Kanuma soil and handled as describe previously for rooted layered branches.

On August 15, 2018, these cuttings were observed, rooted cuttings were planted in plastic pots (a diameter of 7.5 cm, a height 6.5 cm) by mixed soil, thereafter, cultivated in the same plastic house.

RESULTS AND DISCUSSION

Layers on current year's branches withered and died. Layers applied to previous year's branches had 14/15 that survived and showed 64.3 % rooting (Table 1). The survival rate of layered branches with root systems was 93.3 %. Although I did not observe through the rooting process, there was considerable rooting by late July. Layered branches removed on August 7 showed vigorous rooting, and the roots of removed at August 28 rooted branches were already lignified (Figure 3).

In the future, it is necessary to examine that proper time of layering management and the period required for rooting. If the layering managements were had in early growth period e.g. mid to late April, the managed branches may be well rooted in mid- growth period e.g. June and become increasingly likely to a success rate of layering.

Table 1. Rooting of layered branches of 'Somei-yoshino' cherry 100 days after the initiating the layering process.

Mother tree	Survival rate (%)	Overall rooting (%)	Rooting in survival branches (%)	Notes
North tree	80.0	80.0	100	Current year died
Center tree	100	60.0	60.0	
South tree	100	40.0	40.0	
Total	93.3	60.0	64.3	

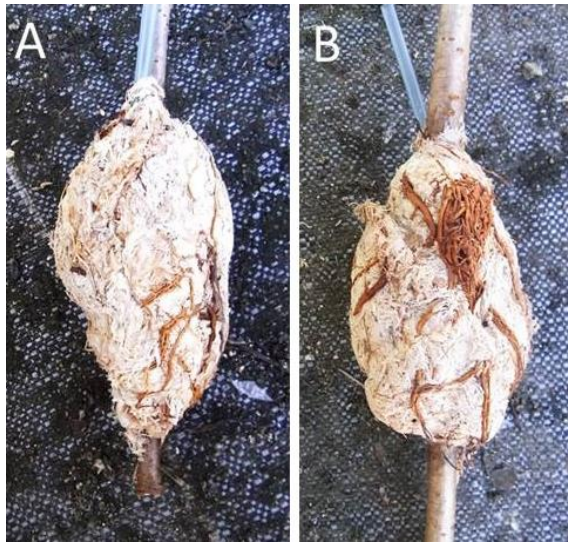


Figure 3. A look of rooting in layering managed branches A: One of the center tree's managed branches, August 7, 2018, 84 days after the layering managements, B: One of the north tree's managed branches, August 28 2018, about 100 days after the layering managements.

On cuttings, rooting was 70.2% in Oxyberon treatments and 66.4% in tap water treatments (Table 2). The success rate using layering was similar to using cuttings. It appears that layering was practical and an easy propagation method for 'Somei-yoshino' cherry to obtain few large nursery trees in a short period of time.

'Somei-yoshino' layering is scarcely reported. The website 'Sakura-no-kai' (https://sakuramori.at.webry.info/200504/article_10.html), shows methods of layering of cherry blossom tree, the layering managements were had in late May – June, keep to June of the following year. In this study, managed branches were rooted nearly 3 months only, if it goes well, I appear that rooted branches were able to be planted the next early spring.

Table 2. Effects of Oxyberon soaking treatments and the types of cutting in the cuttage of 'Somei-yoshino' at 68 days after the cutting.

Soaking treatment	Type of cuttings	No. of cuttings	No. of rooted cuttings	Rooted rate (%)
Tap water	without apical bud	63	39	61.9
	with apical bud	59	42	71.2
	Total	122	81	66.4
Oxyberon SL solution diluted 50 times	without apical bud	63	42	66.7
	with apical bud	58	43	74.1
	Total	121	85	70.2