

Efficacy of grafting methods for stone fruits

IN A NUTSHELL

Zack and Amanda at Silver Creek Nursery wanted to compare Buddy Tape and Speed Easy Bud Ties for grafting their stone fruit trees to see which method was faster and had more successful graft take. With their robust data set, they were able to determine that:

- Grafting with Speed Easy Bud Ties was 1.4 times faster than with Buddy Tape.
- Buddy Tape resulted in two times the number of trees dug in fall 2025 for sales.
- Assessing performance versus labour, Silver Creek Nursery will use Buddy Tape for grafting stone fruit moving forward.



FARMER-RESEARCHER

Zack Muma and Amanda Carbis,
 Silver Creek Nursery Ltd

MOTIVATION

In 2023, the team at Silver Creek Nursery conducted a side-by-side comparison of two grafting methods on one combination of stone fruit scionwood and root stock. They compared Buddy Tape, a biodegradable blend of paraffin and rubber tape, and Speed Easy Bud Ties, a biodegradable rubber wrap with staples. That year saw slightly better graft take with Buddy Tape compared to their standard method using Speed Easy Bud Ties, but there wasn't enough data to be confident.

To compare the grafting methods rigorously, they designed a randomized and replicated trial on cherry, plum, apricot and peach trees. They hypothesized that Speed Easy Bud Ties would be faster; but, because Buddy Tape holds more moisture, it would have better graft take especially for stone fruits.

METHODS

FIELD LAYOUT

The trial included 743 trees spread across four rows as follows:

- The team divided the trees into 38 sections.
- Each section consisted of 10–33 trees of the same combination of rootstock and scionwood, and different combinations of rootstock and scionwood were represented across sections.
- The team then randomly assigned the two grafting treatments to adjacent pairs of sections, with 19 pairs total. See full details in the Appendix on page 5.
- To prevent errors, they labeled the ends of each section and marked the midway point with a yellow stake where they changed grafting methods.

ROOTSTOCK VARIETIES INCLUDED:

- Bailey
- Mahaleb
- Mazzard
- Myrobalan 29 C



Photo 1. Preparation for a graft



Photo 2. Grafting with Buddy Tape

SCIONWOOD VARIETIES INCLUDED:

Plum: Burbank Japanese, Krikon Damson European, German European, Late Italian European, Mirabelle European, Shiro Japanese, Toka Hybrid, Waneta Hybrid, Damson European, Greengage European, Yakima European, Brookgold Japanese, Early Golden Japanese

Sour cherry: Montmorency

Sweet cherry: Skeena, Lapins, Compact Stella, Rainier, Windsor, Stella, Richter

Peach: White Lady, Redhaven, Canadian Harmony, Veteran, Contender, Reliance, Crimson Rocket, Harrow Diamond

MEASUREMENTS

- In August 2024, the team recorded the number of trees in each treatment section, the time it took to apply the treatment to each section, and notes on the quality of the scionwood grafted.
- In April 2025 they recorded the number of callused grafts, failed grafts, and dead rootstock in each section.
- On July 18 they took a field count of successful grafts in each section.
- In fall 2025, they dug and recorded the number of trees less than one metre tall and the number of trees greater than one metre tall.

DATA ANALYSIS

To evaluate the effect of Silver Creek Nursery’s grafting treatments for stonefruit, we employed the statistical program R and used a general linear model with a quasibinomial distribution and treatment section as a random factor to assess total dug, measured as the proportion of trees dug in the fall relative to the total planted at the beginning of the trial. We also used a general linear model with a normal distribution and treatment section as a random factor for labour measured as minutes per treatment section. We could make these statistical calculations because Silver Creek Nursery’s experimental design involved replication of all treatments.

FINDINGS

LABOUR

As hypothesized, the Speed Easy Bud Ties were 1.4 times faster than the Buddy Tape. As seen in **Figure 1**, Speed Easy Bud Ties took on average 1.3 minutes per tree compared to Buddy Tape that took on average 1.8 minutes per tree. There was high statistical confidence that Buddy Tape was slower to deploy, with a very low ($P < 0.001\%$) chance the slower time was due to chance.

COST

The cost difference between treatments was inconsequential. At \$0.06 each, Buddy Tape cost slightly more than Speed Easy Bud Ties at \$0.04 each; however, the team at Silver Creek Nursery can often graft 2-3 trees with a single piece of Buddy Tape.

YIELD

Buddy Tape resulted in two times the number of trees dug in fall 2025 as seen in **Figure 2**. There’s very high statistical confidence that Buddy Tape performed better, with only a 0.005% ($P = 0.005$) chance the better performance was due to



Photo 3. Grafting with Speed Easy Bud Ties

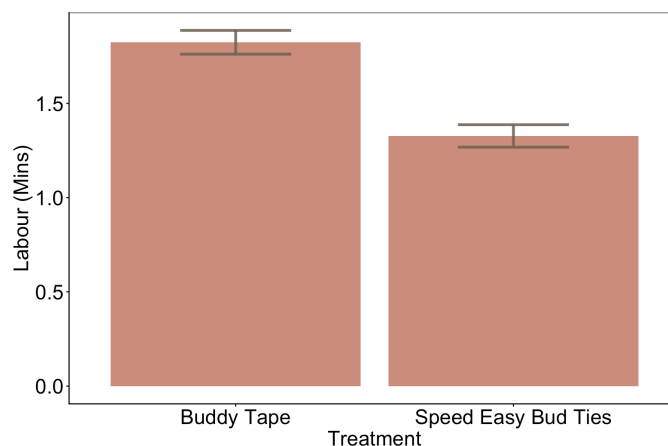


Figure 1. Labour time per tree by treatment

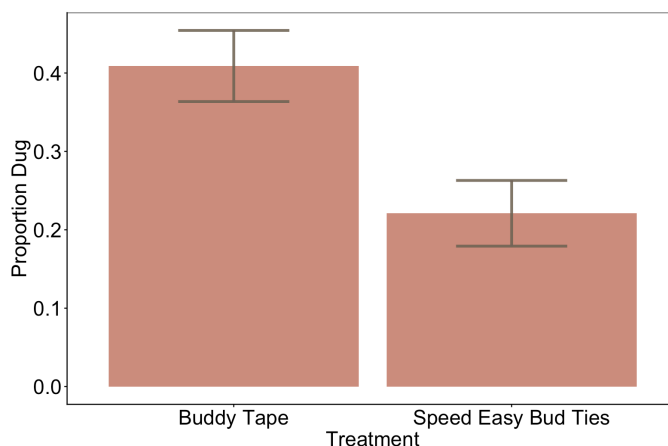


Figure 2. Total successfully grafted tree dug per total planted (minus dead)

chance. With the Buddy Tape, the team was able to dig 41% of the trees from the original total. With Speed Easy Bud Ties, they dug 21% of the trees.

Overall, Buddy Tape has had statistically fewer fails, greater field count, greater number of trees less than one meter dug in fall 2025, and greater number of trees greater than one meter dug in 2025.

When asked about their grafting success rate, Amanda commented: “Overall, I think we are still below the industry standard for stone fruit grafting although I couldn’t find a good source for what the industry standard is in Ontario. The previous year we only used rubbers with staples and had a 28% average success rate for all stone fruit.”

OTHER FINDINGS

The experimental design was not designed to answer questions about whether the differences between grafting treatment varied by rootstock or fruit type. However, the team noted the following trends with rootstock and fruit types:

- Mazzard rootstock, which also had other issues not related to grafting, had the most grafting failures.
- Myrobalan 29 C had the least number of failures and greater field count dug for both treatments.
- Generally, apricot and plums had greater field count dug.
- Apricot, sweet cherry and sour cherry had the most failed grafts.
- Sweet cherries also had additional issues not related to grafting.

NEXT STEPS

The team at Silver Creek Nursery is looking to refine and improve overall graft take. Specifically, they wonder if they could further increase graft take by optimizing the time that the Buddy Tape is removed from the graft.

“Industry standard is to remove wraps in the first fall,” explained Amanda, “which was something we didn’t do during our initial trial when we removed the Buddy Tape in April the spring after grafting. For the 2025 grafts, we removed the Buddy Tape from half of the trees in October and will remove the Buddy Tape from the other half in spring 2026. We also tried T-budding some varieties to see if there is a difference between the chip-bud grafting we typically do. We are also trying out some new rootstock varieties.”

“THE INCREASED LABOUR COST IS NEGLIGIBLE WHEN CONSIDERING THE INCREASED YIELD. THERE IS A HIGH DEMAND FOR STONE FRUIT TREES, THEY ARE ONE OF THE HIGHER PRICED TREES WE SELL, AND THEY SELL OUT EVERY YEAR. THE INCREASED REVENUE FROM THE INCREASE IN SALES EASILY COVERS THE INCREASED LABOUR COST.”

- AMANDA



Photo 4. Grafting methods side-by-side



Photo 5. Zack discussing this trial during EFAO field day at Silver Creek Nursery in 2024.



Photo 6. Sharing trial experimental design during the field day in 2024



Photo 7. Sharing trial experimental design during the field day in 2024

TAKE HOME MESSAGE

Going forward Silver Creek Nursery will be using only Buddy Tape for all stone fruits, including cherries. The increase in time spent grafting is worth the increase in graft take.

They believed the cherries failed because of poor rootstock quality. This past summer (2025) they switched to grafting onto Gisela 6 and Gisela 9 rootstocks instead of Mazzard.

ACKNOWLEDGEMENTS

Thanks to the entire Silver Creek Nursery team. Without all your hard work at the farm Amanda and I wouldn't be able to take time to do these trials. - Zack

FUNDER RECOGNITION



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APPENDIX

SCIONWOOD, ROOTSTOCK AND GRAFTING TREATMENT FOR EACH TREATMENT SECTION

SE = Speed Easy Bud Ties; BT = Buddy Tape.

Pair	Scionwood	Rootstock	Treatment	# of Trees
1	Burbank Japanese Plum	Myrobalan 29 C	SE	20
	Krikon Damson European Plum	Myrobalan 29 C	BT	12
2	Montrose Apricot	Myrobalan 29 C	BT	10
	North Star Sour Cherry	Mahaleb	SE	17
3	German European Plum	Myrobalan 29 C	BT	28
	Veecot Apricot	Myrobalan 29 C	SE	20
4	Late Italian European Plum	Myrobalan 29 C	BT	20
	Mirabelle European Plum	Myrobalan 29 C	SE	29
5	Shiro Japanese Plum	Myrobalan 29 C	BT	20
	Toka Hybrid Plum	Myrobalan 29 C	SE	30
6	Waneta Hybrid Plum	Myrobalan 29 C	BT	20
	Damson European Plum	Myrobalan 29 C	SE	25
7	Greengage European Plum	Myrobalan 29 C	BT	25
	Yakima European Plum	Myrobalan 29 C	BT	18
8	Harlayne Apricot	Myrobalan 29 C	SE	13
	Debbie's Gold Apricot	Myrobalan 29 C	BT	25
9	Meteor Sour Cherry	Mahaleb	SE	31
	Brookgold Japanese Plum	Myrobalan 29 C	SE	11
10	Early Golden Japanese Plum	Myrobalan 29 C	BT	20
	White Lady Peach	Bailey	BT	15
11	Velvago Apricot	Myrobalan 29 C	SE	18
	Moorpark Apricot	Myrobalan 29 C	SE	28
12	Goldcot Apricot	Myrobalan 29 C	BT	22
	Skeena Sweet Cherry	Mazzard	BT	24
13	Lapins Sweet Cherry	Mazzard	SE	25
	Compact Stella Sweet Cherry	Mazzard	SE	26
14	Rainier Sweet Cherry	Mazzard	BT	33
	Windsor Sweet Cherry	Mazzard	SE	9
15	Montmorency Sour Cherry	Mahaleb	BT	22
	Stella Sweet Cherry	Mazzard	BT	12
16	Richter Sweet Cherry	Mazzard	SE	11
	Redhaven Peach	Bailey	BT	15
17	Canadian Harmony Peach	Bailey	BT	15
	Veteran Peach	Bailey	SE	13
18	Contender Peach	Bailey	BT	15
	Reliance Peach	Bailey	BT	13
19	Crimson Rocket Peach	Bailey	SE	15
	Harrow Diamond Peach	Bailey	SE	18