

Appendix

This appendix provides additional technical details, species compatibility tables, and detailed protocols that support the main results.

A. Detailed Technique Protocols

A.1 Whip and Tongue Grafting Protocol

Complete Step-by-Step Procedure:

1. **Timing:** Late winter to early spring (February-April in northern hemisphere)
2. **Rootstock Selection:** Healthy, vigorous, diameter 5-25 mm
3. **Scion Selection:** Dormant, 1-year-old wood, 2-4 buds, matching diameter
4. **Cut Preparation:**
 - ▶ Rootstock: 30-45° angle cut, 2-3 cm long, tongue 1 cm deep
 - ▶ Scion: Matching cut and tongue
5. **Alignment:** Precise cambium alignment on both sides
6. **Securing:** Grafting tape wrap, wax seal
7. **Protection:** Shade, humidity control, monitoring
8. **Follow-up:** Disinfect tools, irrigation, 100% survival