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## **Hypocotyl Grafting for Teaoil Camellia and Its Grafting Union Development**

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*Camellia oleifera* Abel (teaoil camellia) is an important economic crop in China and has been cultivated for various purposes (mainly for cooking oil) for more than 1000 years. To better manage 4 million ha of low-yield plantation, many elite cultivars had been introduced and a rapid propagation method, hypocotyl grafting, had been applied. Regular teaoil camellia seeds were sowed in sandy boxes at least 6 cm in depth. Before the sprout reached the sandy surface, the whole plant was dug and hypocotyl was cut at 3-cm level. One-node scion (usually 1-year-old) was grafted to the splitting hypocotyl and wrapped with an aluminum strip. Grafted plants were cultivated to the field beds immediately in plastic tunnels under 30% shade cloth. Six grafted plants were collected daily. The grafted union was cleaned and stored in 75% alcohol for preparing microscope slides. In most respects, hypocotyl grafts of teaoil camellia followed regular development patterns, but specific differences were noted in initiation of callus, bridge formation, and mode of healing. Callus was formed at day 2 on both scion and stock. The development of callus on scion began to extend inward and met the callus from hypocotyl stock at day 12. More callus tissues were from scion instead of stock. Two callus bridges (not vascular bridges) formed completely through the center parenchyma tissue at day 18–20 and three distinguished parenchyma areas were observed. At day 30–34, the center portion of callus bridges differentiated to pith parenchyma to conclude the grafting union development. Hypocotyl grafting successfully connected the young and fragile tissues with mature tissues. Mechanisms and hormone effect of its grafting union should be addressed for better future application.

**Note:** Donglin Zhang is also a guest professor at Central South University of Forestry and Technology, Changsha, Hunan, China.