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$FFHOHUDWLRQ RI &5,365 &DV EUHHGLQJ XVLQJ ÀRZHULQJ VW

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3RQWLÀFLD 8QLYHUVLGDG &DWROLFD GH &KLOH &KLOH

As a renewable resource, the demand for wood products is expected to continue to increase in the future. Compared to annua crop plants, direct genetic modi cation of trees species has gained little attention, partially because trees have much longer lifecycles and tight regulations opposing transgenic use in the eld. e newly developed gene editing technologies, such CRISPR/ Cas9 increase the potential for the modi cation of species. CRISPR/Cas9 has several major advantages over previous transgenic ba approaches and can work alongside conventional breeding programs by directly improving known yield related loci or genes. In this work, we target reporter genes in by using a modi ed CRISPR/Cas9 system and have added a strong ubiquitous CaMV35S promoter, driving the Flowering Locus T (FT) gene. Ectopic expression of FT accelerates sexual development. To regulat the acceleration of owering time to get viable owers, we use precision lighting with di erent ratios of Blue, Red and Far Red light. e CRISPR/Cas9 mutated plants ower earlier than normal as a result of the ectopic FT expression, resulting in fast recovery of the second generation (F2) in

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