Nitrogen Fertigation of Apple Nursery Stock: Effects of Application Rate and Cutoff Timing on Nursery Stock Size, Dormancy Development, Natural Defoliation, Freezing Tolerance, and Spring Regrowth

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Malus 'Gala' and 'Fuji' nursery stock were grown under different nitrogen (N) fertilization regimes with two rates and three application cutoff dates in factorial treatment combinations. Nursery caliper size was increased by higher N rate and later N cutoff timing. The onset of dormancy was delayed by the high N rate. Natural defoliation was delayed by later N cutoff date. Mid-winter hardiness was reduced by the high N rate with no effect of N application cutoff timing. Spring budbreak was advanced by the high N rate in all except the first cutoff treatment and delayed by earlier application cutoff. Tree size after 10 weeks of regrowth in spring of the year following N application was increased by higher N rate and later cutoff date. Nitrogen rate and application cutoff timing are both important factors in improving apple nursery stock quality and performance in the orchard.

Chemical and Manual Defoliation of Apple Nursery Stock: Effects of Defoliation Timing on Defoliation Efficacy and Nursery Stock Quality

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Malus 'Braeburn', 'Fuji', and 'Gala' nursery stock were manually defoliated on one of five dates, chemically defoliated with one of three spray application timings, or naturally defoliated. Among the chemical treatments, the earliest application timing was most effective in promoting early defoliation. Nursery stock caliper size was affected by manual defoliation treatment, increasing with later defoliation date. There were no