ROOTSTOCK EFFECT ON GROWTH OF APPLE SCION WITH DIFFERENT GROWTH HABITS
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Rootstocks are used to propagate scion of preferred cultivars, to improve fruit tree
tolerance to environmental stress, and to control tree size. The goal of the current
experiment was to improve understanding of rootstock effects on apple scion with
different growth habits to assist with management and with rootstock breeding of apple
trees. Scion had more influence on monthly growth rate than rootstock. Scion with
spreading growth habits grew rapidly in April and May and achieved most seasonal
growth earlier than scion with upright growth habits that grew slowly early in the season.
In all growth habits and rootstocks, growth rate slowed appreciably but did not cease by
August and growth did not terminate earlier for any one scion. The dwarfing rootstock,
M.9, consistently had the lowest and seedling rootstock had the greatest tree height and
diameter. However, no one size controlling rootstock consistently regulated date of bud
break, full bloom, shoot elongation rate, or duration of growth. The large number of
interactions between scion with different growth habits and different size-controlling
rootstocks indicated that rootstocks may differentially regulate components of apple tree
growth.