Czech Academy of Agricultural Sciences

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Phenology of four broad-leaved forest trees in a submountain beech forest

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[fulltext]

The phenology of four deciduous forest tree species (*Carpinus betulus* L., *Fagus sylvatica* L., *Quercus dalechampii* Ten., *Tilia cordata* Mill.) was studied in a submountain beech forest stand in Central Slovakia. Two spring phenological phases – bud-burst and leaf unfolding as well as one autumn phase – autumn leaf colouring were monitored over the period of 13 years. The results documented interannual variability in the dating of phenological phases within the species, while the differences among the species were also revealed. Significant correlations ($P < 0.05$) were detected between the dating of leaf unfolding and air temperature; the coefficients of correlation (r) ranged from –0.86 (hornbeam and beech) to –0.92 (oak). Significant relationships were also revealed between cumulative precipitation amounts and timing of autumn leaf colouring phase (r-value ranged from –0.73 in oak to –0.81 in hornbeam). The trend analysis showed that the onset of phenological phases was slightly shifted

to the earlier dates during the period of 13 years. However, the trends were not statistically significant.

Keywords:
submountain beech forest; phenology; vegetative phenological phases; air temperature; precipitation

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