

Host preference and growth patterns of ivy (*Hedera helix* L.) in a temperate alluvial forest

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Abstract Recent studies have highlighted the role of lianas in shaping stand dynamics both in tropical and temperate forests. However, English ivy (*Hedera helix* L.), one of the most widespread lianas in Europe, has received little attention. We conducted a study in the Siro Negri alluvial forest (NW Italy) to determine what factors most affected ivy distribution and investigate its interactions with the trees in the stand. We evaluated the influence of tree size, age, species, and neighborhood crowding on ivy occurrence. In addition, growth ring widths were used to explore the development pattern of climbing stems. Fifty-two percent of trees in our study plots carried ivy, a value comparable to liana incidence found in mature tropical forests. Tree characteristics and their spatial pattern significantly influenced ivy distribution. Preferred hosts were large, isolated trees, while the effect of tree age and species on ivy occurrence was marginal. Growth pattern analysis revealed that radial growth was positively related to the available space on the tree trunk for each ivy stem. We conclude that neighborhood crowding around trees and competition among climbing stems relying on the same trunk may reduce the colonization rate of ivy.