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Phenology of lilac (Syringa vulgaris) and elderberry (Sambucus nigra) as the indicator of spring warming

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Phenological observations in Hungary started in 1871. The observation system collapsed and revived time by time. The aim of the observations as well as the locations, the methods and observed plants have been changed many times, therefore data series for a given plant species derived from the same place are rare. If we want to study the responses of biosphere to climate variability we need long time data series from the same places, especially phenological data of native plants.
Phenological observations organized by the Hungarian Meteorological Service between 1983- 1999 contain valuable data for lilac (Syringa vulgaris) and elderberry (Sambucus nigra). Those perennial native plants are good indicators of spring warming therefore it is worth to study their phenological development concerning to climate variability. Eight locations in Hungary were selected where the site of the observations remaind the same year by year. Observed phenological phases were: Sprouting of leaves (SL, BBCH:11); Begin of Flowers (BF, BBCH:61); Fall of leaves (FO, BBCH:95). Spatial and temporal trends and variability of phenophases will be presented. The effect of meteorological conditions is studied to build up phenological model controlled by the temperature. Growing degree days above the base temperature was involved together with the duration and severeness of the chilling period.
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