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Tendencies of phenological spring season shifting start date in Poland according to changes of vegetative period duration

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Changes of vegetative period duration are regarded to be one of the results of climate changes. Phenological researches all over the Europe proved that increase of temperature by 1^{o}C in spring time (February – April) will have an effect on earlier beginning of vegetative period by 7 days. Increase of average annual temperature by 1^{o}C will make the vegetative period even 5 days longer. Moreover it was proved that we observe earlier onset of phenophases, especially in spring season. Supposedly also in Poland changes in occurrence time of phenological events are connected with changes in vegetative period duration.

The main objective of this study was to estimate the tendencies of shifting start of phenological spring season in Poland. We used phenological data of indicator plant species for the dawn of spring, taking under consideration calculated average advance of their phenophases, which in case of Common Hazel (*Corylus avellana*) was -2,4 days/decade and -2,6 days/ 1^{o}C.

Analysis has been performed for 69 stations, representing variability of phenological seasons in Poland during 42-year observation period (1951-92).

There results were visualized on maps showing combined information about both changes in spring season shifting start date and vegetative period duration. Kriging was used for interpolation.