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Developing citizen science projects: Cut twigs for ‘chilling’ pupils

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Citizen science projects mainly involve two aims, science and education. Depending on the setting, either the data delivery part for answering questions raised by scientists or the educating part e.g. on scientific practices, crosscutting concepts, application of core science contents or awareness for environmental problems prevails. In this respect, spring phenology is a grateful topic because it addresses both aspects nearly symmetrically. In science, it remains unresolved which factors besides spring warming also trigger spring bud development, namely chilling / photoperiod / humidity / nutrient availability. The appearance of fresh leaves in spring has been fascinating for humans; it is linked to cultural heritage, festivals and has always attracted nature lovers, from young children to senior citizens.
In our study, we set up a twig experiment to study the chilling effect on bud burst of Corylus avellana L. which was conducted by trained citizen scientists at their home. We asked the scientific question if the effects of chilling can be analysed by the twig method, and how sampling and experimental setting should be designed. Furthermore we tested if the twig method is feasible for citizen scientist projects, and report minimum requirements, successes and drawbacks.