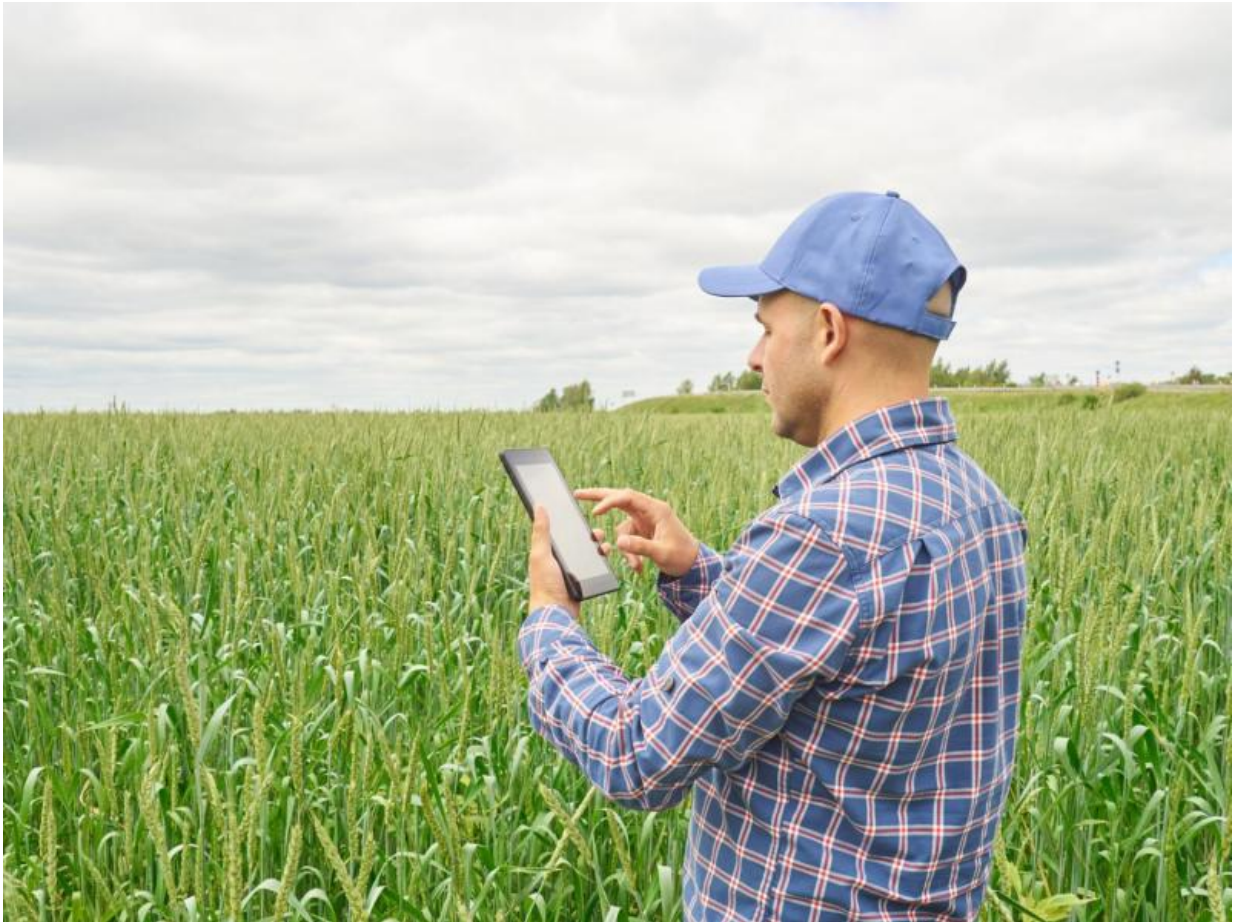


'Citizen science' pollen monitoring service

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The "Citizen Science" trend: MedUni Vienna's Pollen Monitoring Service is a prime example. Credit: Medical University of Vienna

"Citizen science" is one of the latest trends in science – it is a scientific method whereby projects are carried out with considerable input from

interested parties and affected laypeople. The Austrian Pollen Monitoring service at MedUni Vienna's Department of Ear, Nose and Throat Diseases is a prime example of this.

In most cases, Citizen science is conducted on several different levels. The simplest form of involvement is Crowdsourcing, where people provide specific data, Level 2 involves Distributed Intelligence (for example evaluating photographs from photographic case studies) Level 3 (Participative Science) is where the public is involved in defining questions and problems and in data collection. An extreme example is Level 4, Extreme [citizen science](#), which is found predominantly in astronomy and ornithology, where there is a long tradition of lay research.

MedUni Vienna's Pollen Monitoring Service (www.pollenwarndienst.at) headed up by Uwe E. Berger has engaged on Level 3 with a pollen diary that has been in use since 2009. This service for pollen allergy sufferers is already available in 13 European countries: Austria, Germany, Switzerland, France, United Kingdom, Sweden, Finland, Croatia, Hungary, Lithuania, Serbia, Slovenia and Turkey, with more than 150,000 users in each country. A "Pollen App" has been available since 2013 and has been downloaded 320,000 times worldwide. Since March 2012, a total of around 1.3 million people have accessed the Pollen Monitoring Service website.

"Our personalised pollen alert is possible because of the entries made by the thousands of people who use our service. It is the only one of its kind in the world," says Berger. Every pollen allergy sufferer has their own threshold, a different level of sensitivity and different reactions to pollen counts – but, together in a huge database, they provide a reasonable forecast of the expected situation for an individual, on a day-by-day basis.

Berger: "The more data we collect, the more accurate the individual forecasts will be." By making accurate entries in the pollen diary, each individual can therefore not only help themselves in the evaluation of therapies but everybody else as well. Hence, the pollen diary has a dual function for personalised medicine: On the one hand, personal treatment successes can be analysed and compared and, on the other, the data and services offered on the pollenwarndienst.at website help with the early detection of allergies and therefore the ability to manage them correctly. Because of the large amount of data available, it is now possible to include previously unconsidered airborne allergens in the map, for example the pollen from Morton Bay alder in December or ash trees, which were previously given little attention because of the much higher counts produced by birch trees.

In Austria, more than a million people suffer from a [pollen](#) allergy: far fewer from a house dust mite allergy. Nonetheless, there is now a new service offered to sufferers at MedUni Vienna's Department of Ear, Nose and Throat Diseases. At milbentagebuch.at/Mtb/ you will also find a diary and a questionnaire, together with useful tips on how to avoid allergens.

Sensitive data – strict security

A very important aspect of "Citizen science" is the need to keep the sensitive details of the participating public secure, emphasises Berger. MedUni Vienna's Pollen Monitoring Service does this in compliance with strict EU standards, so that it is virtually impossible for data to be passed on to unauthorised parties, and it also uses additional biometric security.

Provided by Medical University of Vienna

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