

Innovation in Plant Protection

Interview with Prof. Dr. Jens Karl Wegener, Head of the Institute of Application Techniques in Plant Protection of the JKI (Julius Kühn Institut, Braunschweig)

Jens Karl Wegener is not just the Head of the Institute of Application Techniques in Plant Protection of the JKI (Julius Kühn Institut, Braunschweig), but he also heads the JKI advisory board for equipment recognition as well as the JKI advisory board for application technology and works with many national and international expert committees.



What are the drivers of innovation in plant protection technology?

Wegener: On the one hand, there are those who are tightening up the licensing of plant protection products, on the other hand there are new opportunities stemming from the technical developments.

Does this include digitisation? (Please refer to the theme of the entire conference "Viticulture 4.0 - Digitisation in the process chain")

Wegener: Yes, of course. Digitization is a tool with which the efficiency and sustainability of plant protection can be further strengthened. Data and sensors help us to get a better grasp of the application conditions and to optimize the technique and employment thereof. The automation of individual functions unburdens the user and leads to more precision. Today's approach no longer limits

the focus on application alone, but also looks at the whole process from the planning, preparation, implementation and including the viewing of documentation which allows for more optimization possibilities.

Are there any innovative ideas that continue to reduce spray driftage and therefore also reduce the risk of adverse effects?

Wegener: There are a number of ways especially with the further optimization of procedures for spatial cultures through the use of sensor technology and improved controls. For example, JKI and its partners have further developed gap switching in fruit growing, which can lead to savings in plant protection products of up to 60 percent depending on the local framework conditions. The problem is that innovations initially cost significantly more money compared to conventional solutions, which pay for themselves later for the practitioner through the savings achieved. It remains to be seen if such solutions have been accepted by the market.

The bar for the approval of new chemical plant protection products is being placed higher and higher. Are there further minimization possibilities thanks to innovative technology or other alternative methods?

Wegener: Personally, I currently see the biggest chances initially with atomizers in the relatively inexpensive fluidic optimization of blowers and air control technology. The simplest design measures

here could significantly improve energy consumption, volume and distribution levels. This incidentally also has positive effects on the risks of spray drift arising from the devices.

The Deutscher Weinbauverband DWV (German Winegrowers' Association) wants the session "Innovative Application Techniques in plant protection" as part of the conference "Viticulture 4.0 - digitisation in the process chain" to deliberately look outside of the box of viticulture. What can viticulture learn from the technical developments in general agricultural engineering and not only with specialist crops? Where can you find synergy effects?

Wegener: Synergy effects arise, for example, through the transmission of sensor techniques from other application areas to optimize the setting of the machines and to automate them. As already mentioned the trend towards automation of the overall crop protection process will also find its way into vertical crops and strengthen the knowledge, consulting, technology and user network. This allows the plant protection risks to be further reduced and the compatibility for humans, animals and the natural environment to be constantly improved.

The interview was conducted by Rudolf Nickenig