

Statement from DWV Digitisation helps solve the challenges in viticulture

Introduction

The Deutsche Weinbauverband e.V. (DWV) sees digitisation as a great opportunity to be able to cope better with the current and future challenges in viticulture in Germany in the age of climate change and globalisation without losing sight of the risks.

Viticulture needs better strategies to adapt to the consequences of climate change. Extreme weather events are increasing in frequency, and pests and disease are becoming more common. A comprehensive risk management strategy is required to deal with problems such as hail, heavy rainfall, erosion, dryness, late frosts and other phenomena.

Viticulture needs sustainable, future-oriented strategies, which includes biodiversity. Maintaining cultural landscapes for the long term is not just the basis for intergenerational operational perspectives, but also for developing wine-producing regions into attractive places to live and as tourist destinations.

Globalisation goes hand in hand with dramatic structural changes in food retailing structures and the consumption habits of end users. The German wine industry is therefore faced with the challenge of adapting to this global competition and the changes in consumer behaviour, which are changing faster and faster, by constantly innovating the ways in which wine is manufactured and marketed. This includes new types of wine, low-alcohol or alcohol-free wines, new types of packaging and creative ways of addressing the requirements of consumers.

This process of adjustment requires outstanding training and development in the industry, teaching and research with a practical bent, consultancy and an exchange of knowledge and experience.

The DWV is convinced that digitisation can help master all these challenges better. Therefore, it has invited scientists, industry representatives and practitioners from the wine industry and related industries to help get to grips with the topic of “Viticulture 4.0 – Digitisation in the process chain“ at the 63rd International DWV-Congress. It would like to thank the Federal Ministry of Food and Agriculture, the Ministry for Industry, Traffic, Agriculture and Viticulture in the Rhineland-Palatinate as well as the Ministry for Environment, Climate Protection, Agriculture and Consumer Protection in Hesse for supporting the conference. The DWV would also like to thank its Scientific Advisory Board, which is made up of experts from all the universities, teaching and research institutes, for the conceptual preparation of the conference, as well as all the moderators and speakers who have made the conference what it is.

DWV would like to use this opportunity to make the following statement:

1. Digitisation is more than a technical innovation

The “Viticulture 4.0 – Digitisation in the process chain“ conference emphasises that digitisation is more than a technical innovation regarding the processes in the vineyard, the cellar and in marketing. It calls for a completely new way of thinking and operating when it comes to operational and corporate management in the organisation, controlling, and last but not least in the way we approach customers.

Digital vineyard

The DWV considers environmental protection, the consequences of climate change, the aim of producing high-quality wines and cost pressure to be the key drivers behind the digitisation of wine production, especially in areas with steep slopes.

The demands of soil, water and plant protection management are getting more and more stringent, and the amount of documentation required is getting more and more onerous. The DWV sees innovative application techniques, resource-efficient procedures, electronic operating systems, drones and robotics as an opportunity to meet these increasing requirements.

Digital wine cellar

The DWV is convinced that international competition and the changes in customer preferences are constantly changing the requirements placed on wine production. The digitisation of harvest technology, processing, analytics and cellar technology as well as filling and packaging technology offers new opportunities in terms of controlling and monitoring production processes. Digital methods of measuring and assessing quality, as well as the use of analytical apps can help to produce higher-quality wines. The DWV sees smart winery technology as an opportunity to use less resources and save on costs.

Digital companies and consumers

In digitisation, the DWV sees an untapped potential for improving the organisational structure, management and documentation and making it simpler. On top of this, it sees new opportunities in terms of marketing. This includes new ways of speaking to customers through social media.

The DWV believes that digitisation offers new marketing opportunities through projecting information from the vineyard and the cellar to the sales room, thus creating a new sales tool as well as creating added value and verifying the authenticity of the wine.

2. Improving digital infrastructure

The wine-producing companies can only make progress in digitisation if the telecommunications infrastructure in rural, wine-growing areas is significantly improved. This

is because in many areas, the necessary mobile and landline broadband network doesn't exist to make "smart viticulture" possible.

If the telecommunication infrastructure does not improve, it's not just viticulture and the wine-growing areas with their wine tourism destinations that will be held back, but also the German agriculture and viticulture industry's leading position when it comes to technology.

For example: It has to be possible to continuously and automatically evaluate the measurement data of sensors which are used in vineyards to collect data about nutrient supply, the need for crop protection, irrigation requirements, etc.

This therefore requires a large-scale expansion of the broadband network and the availability of fast networks (5G mobile systems) but above all else "open data", i.e. making weather, geographical and cadastral data available to businesses free of charge. It must be made possible to retrieve this data using an interface and so make it possible to directly integrate it into the operating systems.

Using the opportunities for wine-growing communities posed by digitisation also constitutes another way of developing new potential for them as attractive places to live, in wine tourism and in marketing wine.

3. Using digitisation to make things easier and reduce bureaucracy

Digitisation offers a great opportunity to simplify the admin involved in viticulture, as well as reducing the reporting and record-keeping requirements. The opportunity to reduce the amount of bureaucracy should not be missed. Linking data from various sources in the sense of "big data" for the purposes of controlling and documentation as well as for reporting or submitting applications also opens up a number of opportunities for making administrative tasks easier. This is based for example on online application procedures which can be developed further.

4. Improving data protection, clarifying property rights

Policies must result in solutions for improved data protection. It's also just as important to clarify questions surrounding data sovereignty and ownership of the data collected as it relates to wine-growing companies.

A lot of data is accumulated by using modern viticulture machines and devices which are then analysed and processed using software to help wine-growers make complex operational decisions.

A lot of this data is not just valuable to winemakers, but also to machine manufacturers, contractors, equipment manufacturers, the processing industry and last but not least for trade. This means it is all the more important to protect this data against unauthorised access by third parties using appropriate security measures. It is not clear to what extent the manufacturers of machinery for the wine-growing industry

have access to this information when it is collected by the winemaker, for example by using a modern tractor or harvester. Many companies are cautious about implementing IT solutions for data analysis and therefore for supporting their day-to-day work so long as the issues surrounding the protection and ownership of the data have not been made clear.

5. Creating a funding program for digital viticulture technology

Through interfacing with autonomous driving and the use of robotics and drones, digitisation offers new opportunities to maintain or rebuild vineyards which are difficult to cultivate but which are culturally important. It opens new opportunities in general for making viticulture in Germany more competitive.

Regarding cultivation techniques in vineyards, wine production and wine sales, digital technologies can be used to work using less resources in a way which is more environmentally friendly. Therefore, the DWV supports the introduction of special funding programmes for the development and use of innovative digital technology in viticulture.

6. Digitisation in viticultural research, teaching, consultancy, training and development

Though basic research is still important, practice-oriented research, teaching, consultancy, training and development in implementing innovative techniques and technologies is essential for digitisation in viticulture to make the desired progress. The DWV therefore appreciates the approach taken in experimental fields and the support given to practice-oriented competence centres for viticulture.

Technical and management staff from the viticulture industry, lecturers and trainers at universities and technical schools, vocational teachers and examiners in agricultural professional training must make more of an effort in future to adjust to digital teaching and learning tools where needed. The framework conditions required for this have previously not been sufficiently widely available across Germany. They must be developed further with the use of professional support.