Kicherer *et al.*

HT-Phenotyping methods for yield parameters in grapevine

Kicherer, A.[1], Roscher, R.[2], Herzog, K.[1], Förstner, W.[2], Töpfer, R.[1]

[1] Julius Kühn-Institute, Institute for Grapevine Breeding, Siebeldingen
[2] Bonn University, Institute of Geodesy and Geoinformation, Department of Photogrammetry
Email of corresponding author: anna.kicherer@jki.bund.de

Marker-assisted-selection (MAS) is one of the most important analysis methods to speed up grapevine breeding. Complementary to genotyping techniques the quality, objectivity and precision of phenotyping methods are determining. Non-invasive, high-throughput techniques based on images and software applications for image analysis are becoming state-of–the-art in plant science.

Building on the scientific methods developed in CROP.SENSe.net, such as acquisition of georeferenced images and image-based detection methods, new phenotypic tools for field acquisition are implemented. This is done in cooperation with working groups from Bonn University.

A large set of reference data taken in the field are used for testing and evaluation of the image based detection methods. Focus is laid on growing stages, diseases symptoms and in particular yield aspects, such as berry size, berry number, clusters per shoot and vine yield.

As a first step a high-throughput image interpretation tool for the lab was developed at Bonn University. It makes it possible to acquire the number and size of grape berries from RGB images in a much shorter period of time than manual measurements.