

Application of SeedCounter app in genetic research

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Grain morphometry is an important step in the wheat breeding to develop new high-yielding cultivars. Counting grains by hand is labor-intensive and time-consuming, while measuring parameters such as grain length, width, roundness, and color is significantly difficult. For high-throughput phenotyping of wheat grains, we implemented the Android-based SeedCounter mobile app. The app allows to take image of wheat grains located on a white sheet of standard-sized paper. The program recognizes the sheet of paper, performs perspective correction, identify grains in the image, and measures their morphological characteristics (size, area, roundness, etc.). The app uses OpenCV library [1] to process images obtained from the mobile device camera. Measurement results are stored on the device and can be used further for statistical analysis.

The workshop is devoted to the practical use of the developed SeedCounter application for data acquisition and analysis.

The app is available at <https://play.google.com/store/apps/details?id=org.wheatdb.seedcounter>

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References:

[1] OpenCV (OpenSourceComputerVisionLibrary): software library of algorithms for computer vision, image processing and general-purpose numerical algorithms with an open source code.