



Workshop summary: Using the Slakes smartphone app to measure soil aggregate stability

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Scenes from the hands-on training workshop focused on measuring wet aggregate stability right before the official opening of the CANVAS 2025 meeting in November.

On the Sunday afternoon before the official opening of the CANVAS 2025 meeting, Dr. Jenny Bower from the Soil Health Institute led a hands-on training workshop focused on measuring wet aggregate stability—an essential indicator of soil health—using the accessible Slakes smartphone application. This article provides a brief recap of the workshop.

Dr. Jenny Bower from the Soil Health Institute (SHI) led a hands-on training workshop focused on measuring wet aggregate stability—an essential indicator of soil health—using the accessible Slakes smartphone application. Approximately a dozen participants attended the session in November on the Sunday afternoon before the official opening of the [CANVAS 2025](#) meeting. The event was organized by ASA's Soil Health Community Leader Ayush Gyawali and Vice Leader Deirdre Griffin Lahue.

The Slakes app enables reliable field-, kitchen-, or classroom-based quantification of soil structure through image-based analysis. The free app is available on both [Google Play](#) and the [App Store](#). The Slakes app works by using a smartphone camera to photograph three dry soil aggregates before and after a 10-minute water exposure. Through automated image analysis, the app measures the aggregates' ability to resist dispersion when rewetted. Weaker aggregates slake or break apart more easily while stronger aggregates remain intact, indicating better soil aggregation and healthier soil structure. The app automatically calculates an aggregate stability index value that can be exported and tracked over time to compare management practices (Figure 1).

Participants received comprehensive training on the complete slakes measurement workflow, from collecting soil aggregates, to setting up the smartphone mount and conducting the test. Dr. Bower also spoke about a high-throughput procedure for analyzing multiple samples simultaneously and shared results from regional soil health surveys that have successfully applied this methodology.

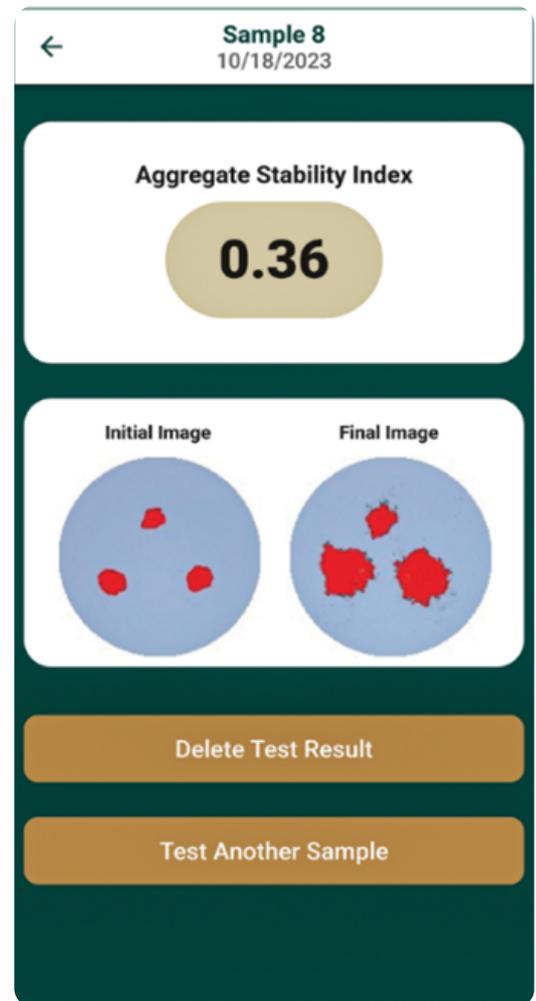


Figure 1. Screenshot of aggregate stability test result in the Slakes app.

The workshop's practical component allowed attendees, including students and researchers, to gain direct experience with the free app using provided soil samples. Sample treatments included conventional tillage without cover crops, no-tillage with cover crops (including clover and grasses), and soil from Konza Prairie. These contrasting management systems provided participants with an opportunity to observe meaningful differences in aggregate stability across varied soil conditions, demonstrating how soils with greater aggregate stability are more erosion resistant and support improved water capture, infiltration, and storage.

This pre-CANVAS workshop was a hit with attendees. One participant, Tim Reinbott of University of Missouri, captured the experience saying, "I can't wait to use the Slakes app this spring to monitor changes in water aggregate stability throughout the growing season based on soil fertility and crop rotation at the historic Sanborn Field".

Happy slaking!

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