



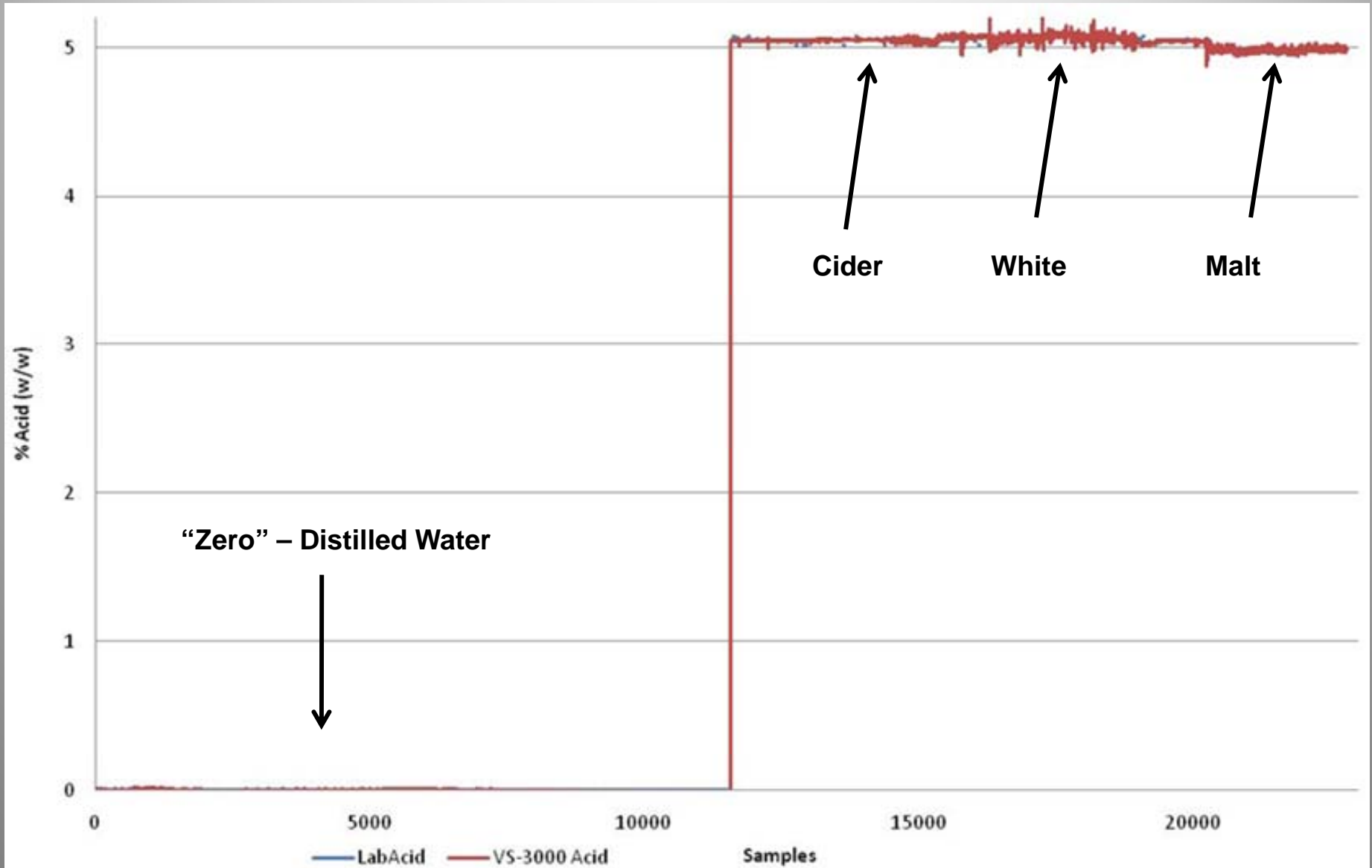
VS-3000 Measures Acid in Vinegar

These slides demonstrate the ability of the inline *VS-3000 Sensor System* to match readings from the QA lab at a vinegar plant.

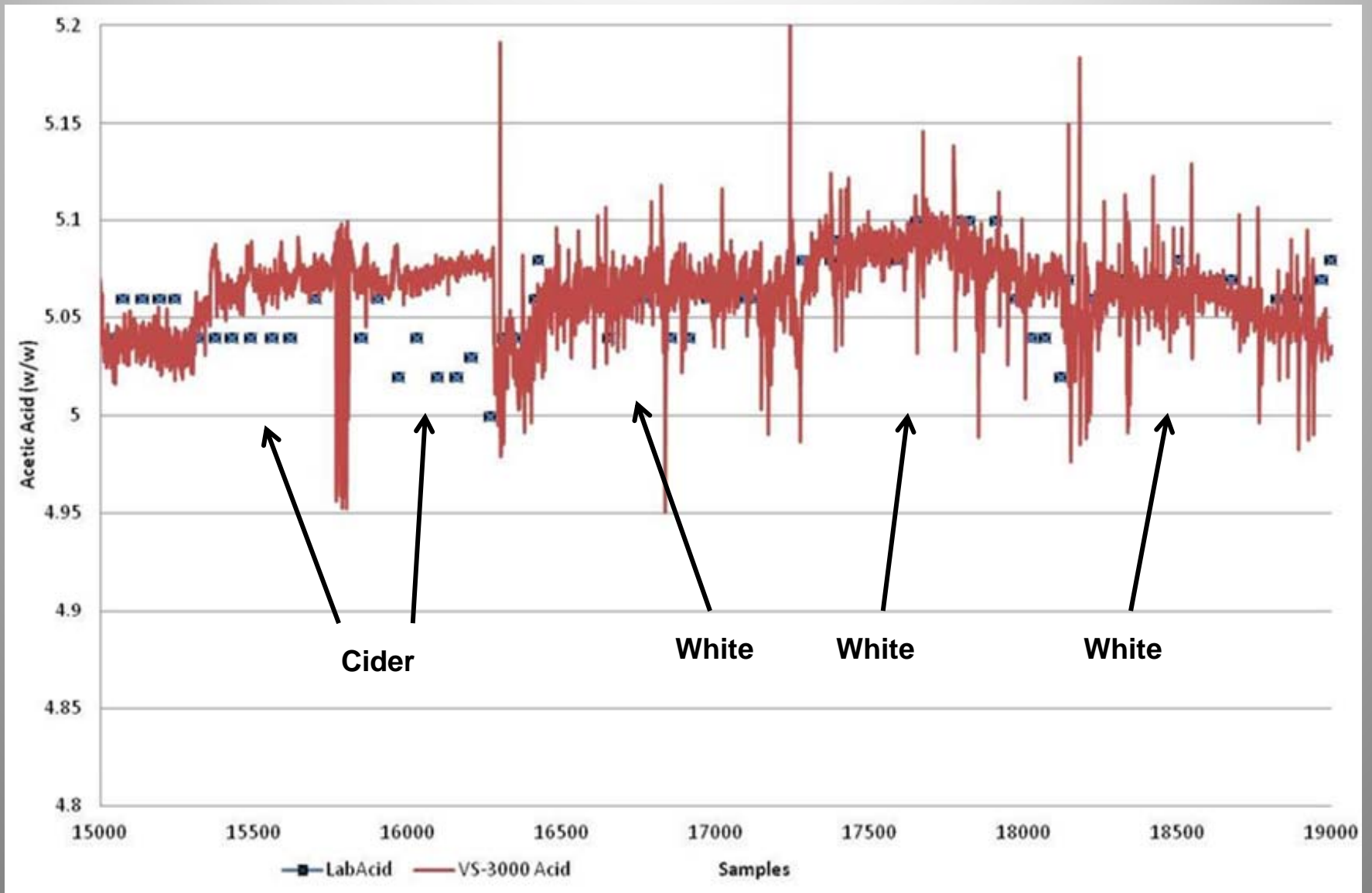
- *VS-3000 System* is an online instrument which measures dissolved ingredients in liquids 24 times per second. One sensors head measures Total Organic Acid (TA) and temperature simultaneously, 24x7. *VS-3000* has the ability to account for any residual sugars in solution
- *VS-3000* is the only instrument in the world which can directly measure Total Organic Acid inline, real-time
- One sensor head has the ability to measure White, Cider, Wine & Malt Vinegar
- One *VS-3000* calibration covers all four vinegar types. No offsets/brand adjustments are required on the *VS-3000*

VS-3000 is an accurate and versatile instrument. Infrared measurement is an ideal real-time technique for real-time acid measurement in a vinegar plant.

VS-3000 Acid vs. **QA Lab Acid**



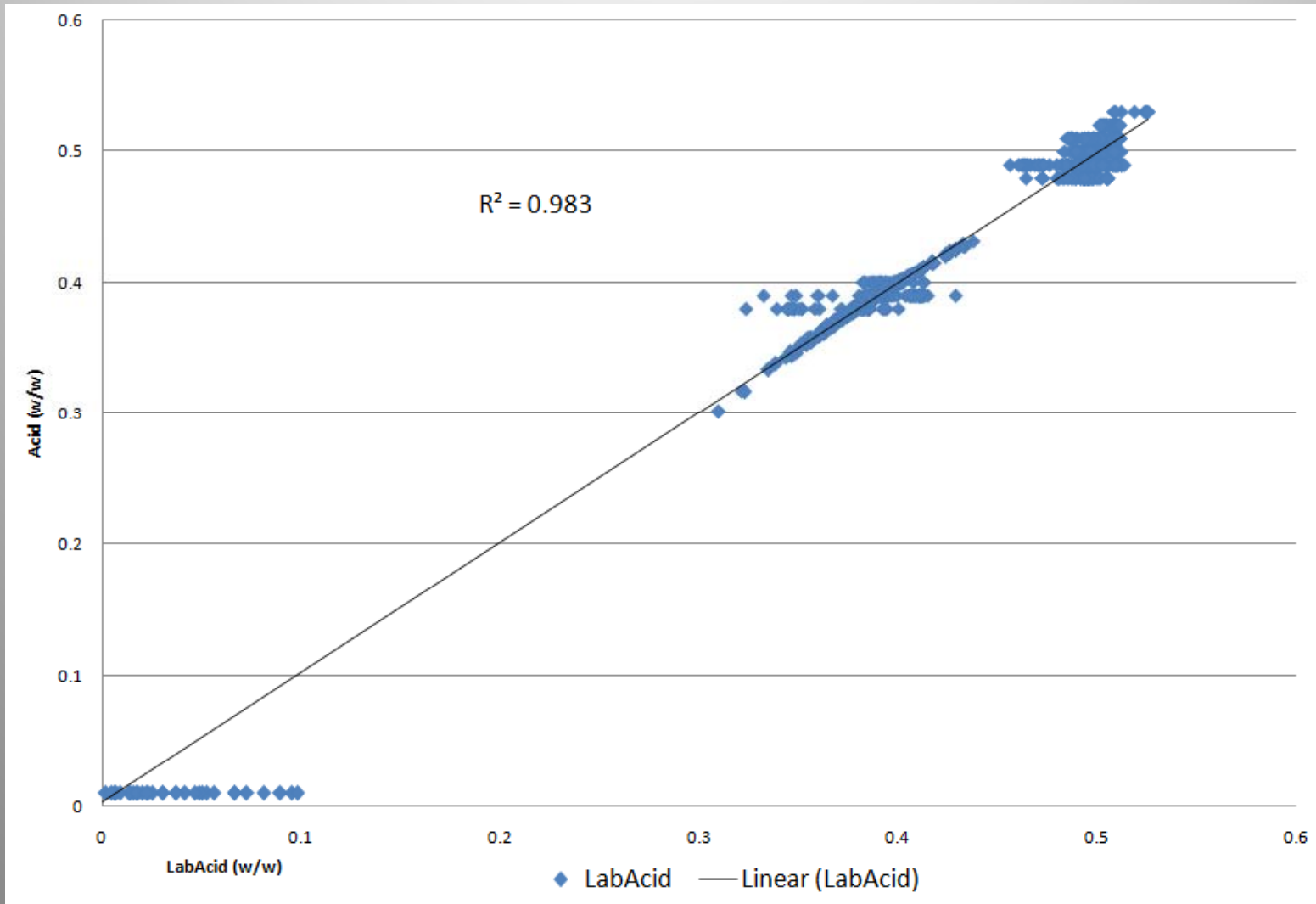
VS-3000 Acid vs. QA Lab Acid *(Expanded)*





R^2 : *VS-3000 Acid* vs. *QA Lab Acid*

There is an excellent correlation (R^2) between VS-3000 readings and QA laboratory measurements – 99.96 % correlation



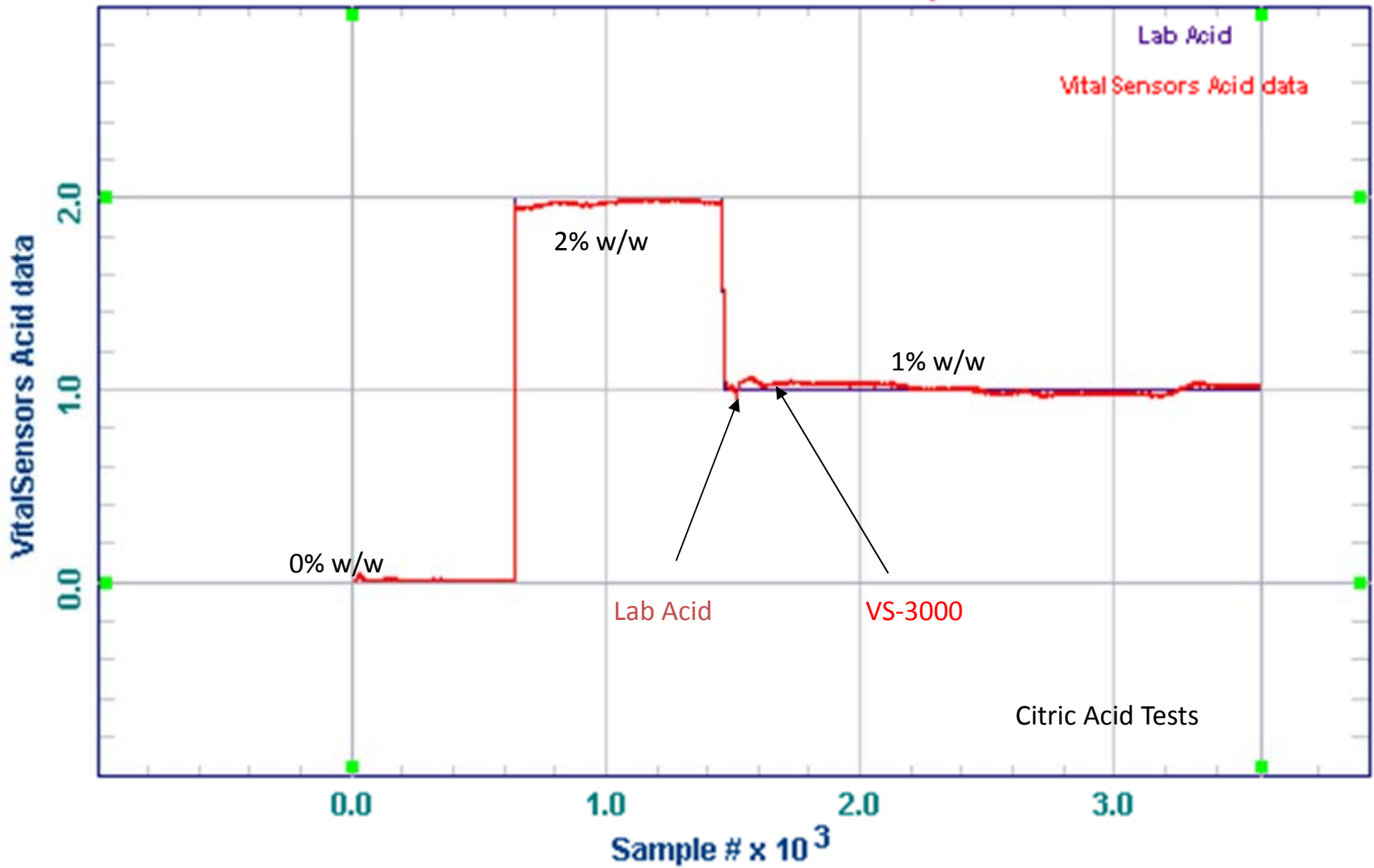


Controlled Lab Tests

The next 2 charts demonstrate

- Accuracy: Using weight / weight solutions of acetic acid over 30 degree temperature ramps. This test was performed in a controlled laboratory.
- Confidence: R^2 value of .9982 (perfect correlation)

VS-3000 Acid vs. **Lab Acid** concentration test using percentage w/w acid. 2.0 percent by weight then 1.0 percent by weight, distilled water was used for 0



R^2 : VS-3000 Acid vs. Lab Acid

