

Santa Cruz County Farm Bureau Ask Laura Newsletter Column  
Authorship for April 2015 Newsletter: Steve Tjosvold

Q: Is there a way of quickly identifying plant diseases in the field? I sometimes feel that it takes so long to get information back from a plant pathology lab when I send in a diseased plant sample.

A: Often the best way to identify a plant disease is to have representative plant samples sent to a plant pathology laboratory. The plant pathologist can identify the cause of the disease by finding existing spores or other tell-tale signs, or by isolating the causal organism on media. Yes, this takes time. However there are several field test kits that can help the field scout or farm manager to identify many common diseases, and the testing can be done in the field or farm office-- within minutes.

Q: How do these field test kits work?

A: Test kits from each manufacturer work a little differently, however the same principal applies. These tests are based on antibodies that are designed to recognize antigens specific to each pathogen (e.g. *Phytophthora*, *Erwinia amylovora*, tomato spotted wilt virus). Any antigen present in the plant sample is extracted by grinding in the extraction solution. The extracted antigen is then allowed to react with antibodies that capture these specific antigens. A color change occurs on the test unit if the antigen is present. As with any diagnostic procedure, the accuracy of the test kits is only as good as the sample taken.

Q: What test kits are available?

A: Not all plant diseases are covered by these quick field tests, and some companies carry unique tests that are available only for processing large numbers of samples.

ImmunoStrips from AgDia Inc. They carry field test strips for *Phytophthora*, and many bacteria and viruses. Contact: 1-800-622-4342 <http://www.agdia.com>.

Alert Kits from Neogen Company. They carry field test kits for the common root pathogens: *Phytophthora*, *Pythium* and *Rhizoctonia*. Also they carry several other bacteria and virus test kits. Contact: 800/477-8201 <http://www.neogen.com/PlantDiagnostics/index.html>