Grape Leaf Spectra

The Problem

Blackleaf disease, a problem for grape growers, can be mitigated if detected early.

A remote sensing instrument for early detection of blackleaf disease is needed.

The Approach

- Obtain spectral reflectance data from diseased and well grape leaves
- Employ stepwise regression and discriminant analysis to identify optimal combination of wavelengths as signature for onset of disease

The Accomplishments

- Identified wavelengths that best discriminated between diseased leaves and well leaves
- Guided the development of an instrument that can be optimized for early diseased leaf detection

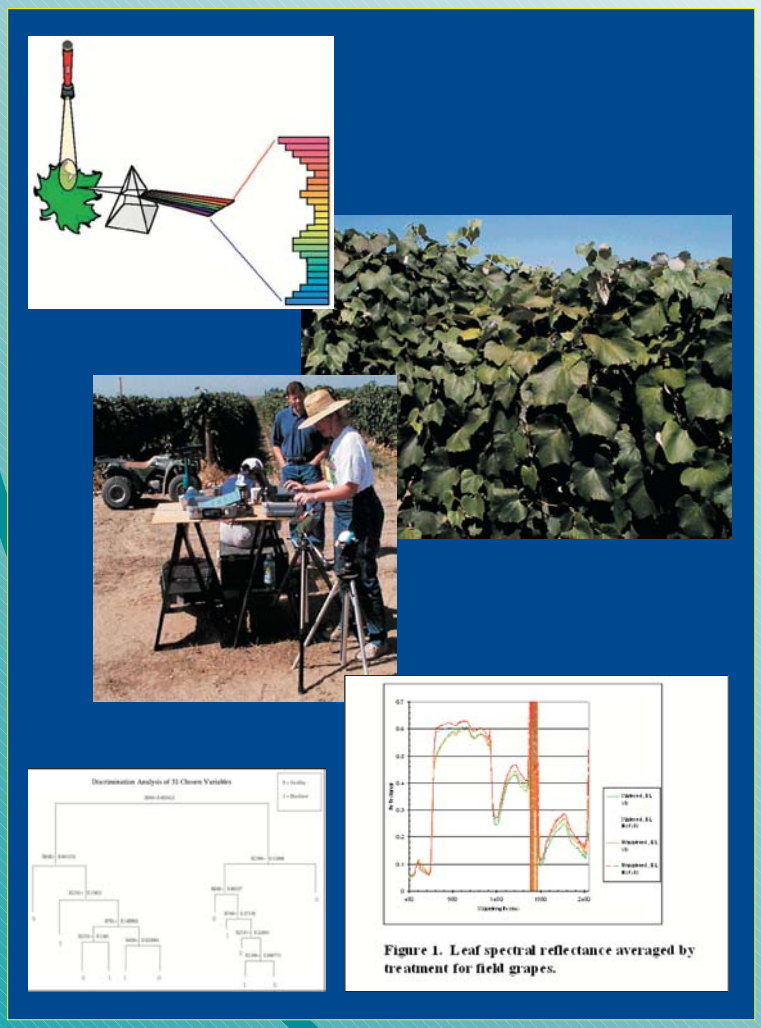

Figure 1. Leaf spectral reflectance averaged by treatment for field grapes.

Battelle
The Business of Innovation.

Statistical & Quantitative Sciences
S&QS
www.pnl.gov/statistics

Pacific Northwest National Laboratory
Operated by Battelle for the U.S. Department of Energy