SOIL BIOLOGY SYMPOSIUM

From data to decisions... how far have we come?

Thursday, 15 May 2014
AgriBio-Bundoora, Melbourne
Theme - Suppressive soils – traits and transferability

Identification and characterisation of disease suppressive soils in the Western Region (DAW00201)

Project leader: Daniel Hüberli, DAFWA
Email: daniel.huberli@agrlic.wa.gov.au

Objectives:
1) Identify sites in Western Australia (WA) that are suppressive to one or more root diseases of wheat including take-all, rhizoctonia root rot, crown rot and root lesion nematodes (RLN);
2) Determine the components of suppressive sites; and
3) Identify microbial communities using molecular tools in collaboration with the other project in the Soil Biology Initiative.

Key findings:
• From 331 paddocks assessed during 2010 to 2012 in WA, 15 paddocks for rhizoctonia, six for take-all, 22 for crown rot and one for RLN were identified as “potentially” suppressive to disease.
• After confirmation with a pot bioassay, two paddocks were highly suppressive and five paddocks showed moderate suppression to rhizoctonia. Only two paddocks recorded were highly suppressive to crown rot. The bioassay for take-all failed to confirm any sites as being suppressive to this disease. The one RLN identified was not assessed.
• A selection of two suppressive sites for rhizoctonia were more similar to each other than the other farms for the bacterial microbial analysis than the two non-suppressive sites (collaborative research with Helen Hayden, DEPI).

Implications:
Suppressive sites, primarily for rhizoctonia, were found in WA. Sites changed to non-suppressive with change in crop type.

Further reading: