

Instructions for collecting and sending cereal virus samples

Collection

- Collect tillers from wheat, barley, oats, or triticale crops at tillering (preferable) to early grain fill. Collect samples from crops with yellow dwarf virus (YDV)-like symptoms including stunting, yellowing, or reddening commonly distributed in small or large patches of plants. Yellowing or reddening caused to YDVs is most pronounced at tips and margins of leaves.
- For each crop (cultivar/site combination) fill in a separate YD Form (attachment). Sender details or other duplicated information for crops can go on just one of the forms.
- Write your own reference (name or number) for the crop in top right of the form. I will cross reference it with my own YD number. Fold the forms and send them back in plastic bags with the samples.
- From each plant cut off one tiller near the base. Collect from a minimum of six symptomatic plants (for each distinguishable virus-like symptom) and six unsymptomatic plants from each crop. Unless only small areas are affected, plants sampled should be more than one metre apart. Unsymptomatic plants should come from near the symptomatic plants. Recently-formed tillers are preferable to the larger tillers on the plant. Base diameter less than 7 mm is desirable.

Preparation and sending



- Cut the tops and leaves off tillers, keeping the basal 20-30 cm. Peel off senescing or loose leaf sheaths. Note on the YD form (field at centre of front page) any aphids present and if possible identify them. Dark olive green to black oat aphids (*Rhopalosiphum padi*) are common on tillers whereas pale green to yellow-green rose-grain aphids (*Metopolophium dirhodum*) are often on leaf blades and more difficult to see. Relatively elongated corn aphids (*Rhopalosiphum maidis*) may be on barley but are unlikely on other cereals. Before packing the trimmed/stripped tillers, manually crush and remove any aphids or other visible insects.
- Roll the symptomatic and non-symptomatic tillers in separately-labelled bundles in damp (not wet) newspaper or paper towel. I recommend using a hand sprayer to dampen the newspaper beforehand. Put both bundles in a plastic bag and pack inside a mailing bag or box with the completed YD form(s).

IMPORTANT BIOSECURITY PRECAUTIONS

To prevent the spread of Russian Wheat Aphid, please make sure there are no aphids on the tillers sent to us. Then double bag the samples before posting – place the wrapped samples inside a plastic bag and close securely, then repeat with another bag. Large ziplock bags are ideal, but a solid plastic bag can be closed by twisting the top and securing tightly with tape or rubber bands. Samples will be opened in a secure laboratory at UNE, and properly disposed of after blotting.

Mailing address:

Craig Birchall
Agronomy and Soil Science
University of New England
Armidale NSW 2351

Results of tests. Upon receipt, I will section and blot the tillers on nitrocellulose membranes. The membranes will be stored and used for YDV tissue blot immunoassays over several months. I will compile results of all tests and report back to you by the end of December. Contact me if you want to know results before then.

Thanks for your help and interest,

Craig Birchall
GRDC Project UT00030