

How to prepare samples for submission to the Australian Cereal Rust Survey

1. Collect good samples

The better the sample you send, the faster we can process it and the more likely it is that your sample will work.

Poor sample material (low infection with only a few leaves or samples that are not fresh) often requires an extra step, in which the rust has to be increased on a susceptible variety before we can perform a seedling assay. Poor material is also more likely to have lower spore germination and is more likely to fail.

Good sample material will have sufficient rust to allow inoculation straight onto a seedling assay. The minimum requirements are as follows, but the more rust, the better.

- It is important that the sample material is actively sporulating.
 - When you wipe over a leaf or stem with a clean white cloth, you should see yellow, brown or black dust-like smearing.
 - However, *please **do not** wipe down the specific material you are sending* (we want as many of those spores as possible to test)
- Please collect material while the leaves and stems are **dry**.
 - Moisture decreases the viability of the spores.
- **For leaf and stripe rusts**, a 10 cm length of leaf that was completely covered by rust pustules.
- **For stem rusts**, a 10 cm length of 100% infected flag leaf sheath or 5x 10cm peduncles with 100% infection.
- If there is not 100% coverage of rust on a single leaf/sheath/peduncle, collect enough material for the equivalent
 - e.g. 10 leaves each with 10% stripe rust infection or 3 leaves with 30% infection.

2. Packaging and dispatch

Packaging the sample is important to maintain the viability of the spores

- For leaf and stripe rusts, fold leaves infected with stripe rust or leaf rust in half from top to bottom, so the rust is on the inside.
 - This will help keep the sample as fresh as possible
- Place folded leaves or stems into **paper envelopes**
- ***Please DO NOT use any plastic packaging, including plastic parcel bags, plastic lined bags or bubble wrap***
- Plastic will make the samples sweat and moisture will reduce the viability of the rust spores
- If you are sending multiple samples, please place them in separate envelopes
- With every sample that is sent, please fill out the dispatch form that can be downloaded from <https://www.sydney.edu.au/science/our-research/research-areas/life-and-environmental-sciences/cereal-rust-research/rust-reports.html>
- ***Alternatively***, you can contact us (details below) and we will send you some sample envelopes with the form printed on the outside.

- Please include:
 - Cereal host species and also the variety, whenever it is known
 - Location the sample came from, preferably with latitude and longitude in decimal degrees.
 - Date the sample was collected

- Post your samples to the Australian Cereal Rust Survey as soon as possible.
A sample that has been sitting on the dashboard of your vehicle for a week is likely to fail!
Send samples to the address below:

University of Sydney
Australian Cereal Rust Survey
Reply Paid 88076
Narellan NSW 2567

Remember, the better the sample you send and the more information you provide on the submission form, the faster we can provide you with an answer and better serve the Australian grains industry.

For further information or to request sample envelopes contact:

Professor Robert Park	robert.park@sydney.edu.au	(02) 9351 8806
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