

# Sampling grass for fungal endophytes in the Canadian Arctic

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## Sampling for *Neotyphodium* endophytes in grass species

Sampling kits with envelopes and vials preloaded with acidified alcohol and lists of target species will be sent to all investigators that are willing to participate in this part of the program. Please contact me at [s.koh@ualberta.ca](mailto:s.koh@ualberta.ca) if you are interested. This year we are looking in particular for mid arctic sites but will be happy to get samples from any site.

### Sampling period:

Sampling for grass should be done one at each supersite and ancillary site at the same time vegetation surveys are being done (Late July and early August).

### Target species:

Since the range of most arctic grasses is smaller than the area potentially covered by the overall project a list of site specific target grass species will be developed once all sampling locations of those that are willing to participate in the sampling have been confirmed. Most likely each site will have two or three target species.

### Sampling intensity:

Up to a maximum of 50 tillers should be sampled for each target species at each site. Where grasses are tussock forming, tillers should be sampled from different tussocks.

### Sampling grass

- Tillers are randomly selected within the site (and nearby adjacent areas if necessary) and removed by cutting them as close to their base as possible.
- The outer leaf sheaths are discarded, leaving the pseudostem consisting of the leaf sheath of the youngest, fully expanded sheath and emerging leaves within this.
- The bottom 6 cm of the youngest fully expanded leaf is removed from the pseudostem, and cut into three 0.4 cm sections, starting from the base.
- Each 0.4 cm section is placed into a vial of acidified alcohol and the vial is labeled with site and tiller ID.
- The remainder of the leaf (up to 5 cm of the remaining sheath) is inserted into a coin envelope and the envelope is marked with the same site and tiller ID as the vial. The coin envelope should not be sealed to facilitate drying.
- The envelope is placed in a plastic bottle containing silica gel. Samples from the envelope will be used for DNA extractions.

**Tiller and site ID**

Each vial and envelope should be marked using this ID system

Example: K1FA01

First 2 digits indicate site (K1=Kluane 1), next two digits indicates grass species (FA=Festuca altaica), next two digits indicate sample number.

If you need to modify the id system please make note and send note along with samples at the end of the season.

In September vials, envelopes and notes should be mailed to Saewan Koh and David Hik at the University of Alberta.

Please feel free to comment or make suggestions to this protocol. Comments should be sent to [s.koh@ualberta.ca](mailto:s.koh@ualberta.ca)