

Survey of grain pests using grain probe traps: Protocol

Grain probe traps catch insects as they move through grain. This is how to use them for this study:

- 1) Select two grain bins containing grain, such as cereals or pulses. Do not use in: canola, mustard, flax, canary seed, or forage seeds, as the small seeds fill the trap. If your bins of harvested grain are empty at this time of year, traps may be placed in bins containing animal feed, or placed in grain bins after this year's harvest is in bins.
- 2) Select bins that are most likely to have insects (e.g. bin was not aerated, grain has been in bin for a long time, or bin has a history of having moldy grain or insects).
- 3) Enter the bin safely from one of the roof hatches.
- 4) Secure the probe trap's string to the bin (see Figure 1 next page). This will prevent losing the trap in the grain.
- 5) Push the trap into the grain until the top is just covered by grain. Place one trap per bin.
- 6) The trap should be left for about two to four weeks in the grain.
- 7) Immediately upon removing a trap from a bin, unscrew the insect reservoir (see Figure 2 next page) and pour its contents (broken grain and insects) into one of the provided vials. Use one vial per trap. Place insect vials in a cool room until mailed.
- 8) Please complete the Data Sheet on page 3. This will help us understand stored insect infestations.
- 9) In the yellow return envelope provided (addressed to Vincent Hervet, Winnipeg), **place the filled out Data Sheet (page 3) and the 2 vials containing the samples.** The postage is pre-paid.

The grain probe traps are yours to keep. You can use them to monitor the presence and abundance of insects in your bins. For information on the management of stored grain to prevent the development of molds and insect infestations, see:

<https://grainscanada.gc.ca/en/grain-quality/>.

May you wish to send us additional insect samples from the grain harvested this year or any other year until the end of 2023, we would be happy to receive these additional samples. In this case you can place the traps in the grain any time after harvest and retrieve them any time you wish. The longer they are in the grain the better because longer time increases insect catches. Just know that very few catches will occur in grain that is below 15 °C. If you wish to provide additional samples, please send an email to Vincent Hervet (vincent.hervet@agr.gc.ca) to arrange for their shipment. This will further help our research and we will let you know which insect species were present in the samples.

Survey of grain pests using grain probe traps: Grain probe traps

Figure 1

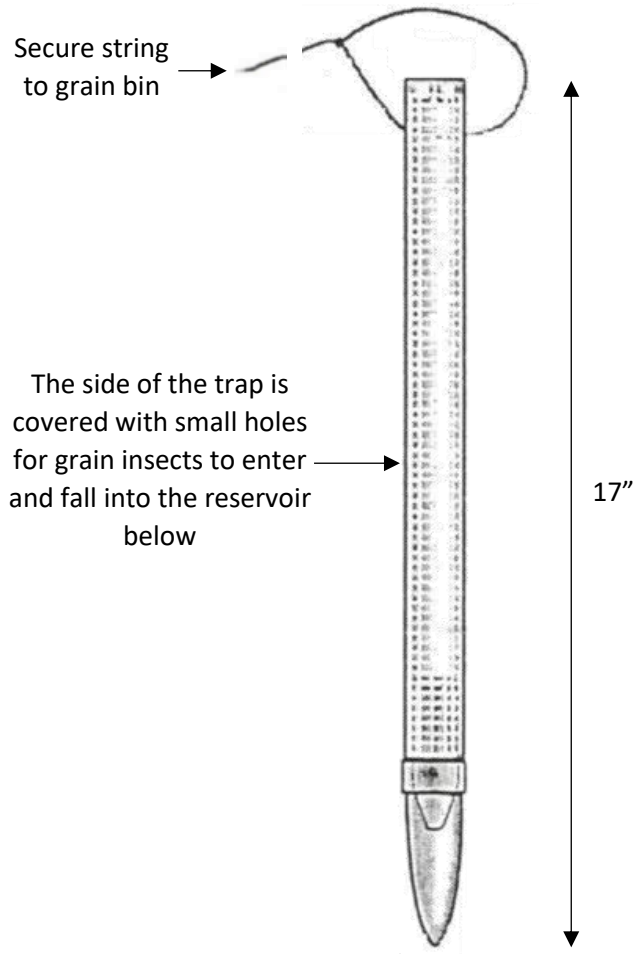
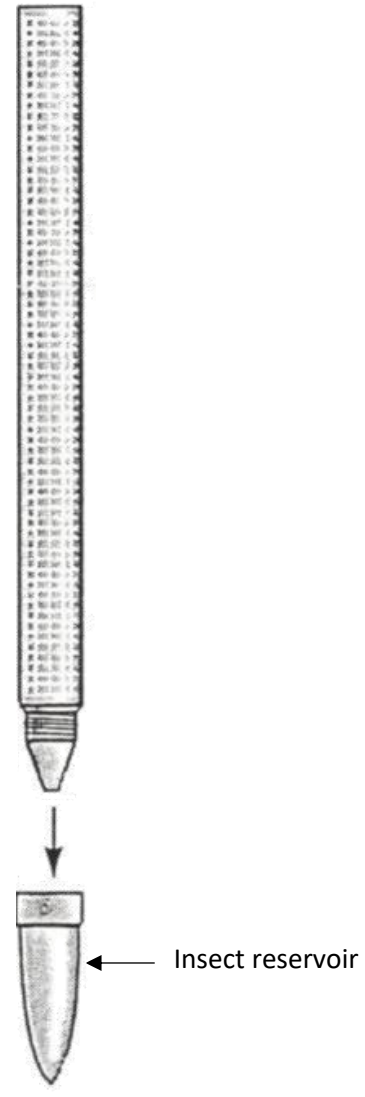


Figure 2



Survey of grain pests using grain probe traps: Data Sheet

Grower's name: _____

Grower's contact information: _____

List of commodities you usually have in bins in July-August (prior to harvest), if any: _____

Grain probe traps data	Bin #1	Bin #2
Locality of bin (GPS / address)		
Date trap in		
Date trap out		
Commodity in bin		
Date commodity placed in bin		
Grain moisture content when grain was placed in bin		
Temperature of grain when grain placed in bin, or air temperature at harvest		
Bin capacity (Bushels)		
Bin dimensions (height/circumference)		
Bin brand		
Bin type (hopper/flat bottom)		
Aerated (yes/no)		
Fan power (hp)		
Fan type		
Fan make		
Dates fan turned on		
Are you planning to use the traps in the future?		
Any additional information you would like to mention (use next page if needed)		