

Ethylene Sampling Protocols for Greenhouse-Grown Crops

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The North Carolina State University (NCSU) Plant Disease and Insect Clinic offers a service for testing ethylene. This leaflet describes the sampling procedures to follow and fees charged for submitting ethylene pollution samples to the NCSU Plant Disease and Insect Clinic. This service is designed to test ethylene levels in greenhouses and is available to any greenhouse grower. A sampling kit is required to collect a sample for analysis with a gas chromatograph (GC). It can be requested from the NCSU Plant Disease and Insect Clinic by sending an Email to tom_creswell@ncsu.edu or by calling 919.515.3619.

Steps to follow:

1. Request a sampling kit from the NCSU Plant Disease and Insect Clinic (919.515.3619) or Email tom_creswell@ncsu.edu. This kit contains small glass bottles and rubber stoppers. One bottle will have a stopper on it to show you how to place them on after collecting a sample.
2. Label the bottles with a meaningful designation (eg.: east greenhouse).
3. To ensure that NCSU has an adequate sample, fill a 3 bottle set from each location to be tested.
4. Collect a good air sample. One way to do it is to fill the bottle with clean water (which expels the air in the bottle), then pour out the water when you set the bottle in the desired location. Another way is to actively "fan" the bottle to make sure the air you want to sample is in the bottle. Note: do not blow into the bottle to exchange the air. This is particularly important if the

bottles were in a smoky office, garage, or other settings with odors in the air. (Ethylene can be part of other air pollutants.) Note: if a faulty heater is suspected, one should collect the sample when the furnace is running extensively, eg. first thing in the morning before venting the greenhouse.

5. Seal the glass bottle with the stopper.
6. Pack glass bottles in a box so they do not break in transit.
7. Fill out the sample form, indicating that ethylene testing is requested.
8. Send the bottles to the NCSU Plant Disease and Insect Clinic with an **overnight** delivery service. The quicker we can analyze the samples, the better. Samples are run Monday through Fridays, except on holidays. A phone call to 919.515.3619 or Email tom_creswell@ncsu.edu notifying us that the samples have been mailed would be appreciated and helpful.

Fees for North Carolina Growers (For out-of-state rates, please 919.515.3619 or Email tom_creswell@ncsu.edu for information):

1 or 2 samples (of a 3 bottle set): \$25 each
3 to 9 samples (of a 3 bottle set): \$15 each
10 or more samples (of a 3 bottle set): \$10 each
Please make the checks payable to NC State University.

Mailing Address:

NC State University Plant Disease and Insect Clinic, 1104 Williams Hall, Box 7211, Raleigh, NC 27695-7211 919.515.3619, Fax 919.515.5217, Email tom_creswell@ncsu.edu