

Collecting Vegetative Plant Material

Plant Materials Technical Note



Introduction

Plant collections are the basis for the evaluation and release of material at the Plant Materials Centers. Plant species with the potential to address conservation needs are collected by NRCS personnel and private individuals. Once collections are received at the PMC, they are assigned an accession number which is used to identify the collection throughout the testing process.

There are two methods of collecting plant materials for evaluation; collecting seed and collecting vegetative plant materials. When the plant to be evaluated requires collection of its seed, the timing of the collection is critical. Seed should be collected late enough during seed development so that it is fully developed and viable however the seed should be collected early enough during development so that it has not already shattered out of the inflorescence and fallen to the ground. Collecting vegetative plant materials provides a larger window of time for plant collections. However, the handling, collection, and shipping of vegetative plant materials is more challenging than seed collections. Careful attention must be exercised to avoid damaging the plant. The following information pertains only to the collection of vegetative materials.

Purpose

The purpose of this technical note is to provide guidance on how to properly collect vegetative plant materials.

Steps for Collecting Vegetative Materials

1. Identify the species to be collected in the field. Get assistance from a specialist, if necessary to confirm the identification of the plant(s). Locate vigorous specimens of the plant species to be collected. Some of the characteristics to consider include overall appearance and vigor, unique foliage color or abundance, resistance to disease, and seed production. Identify the plant collection sites by marking on a map or noting GPS coordinates for future reference. Complete a Plant Collection Information, ECS 580, form. This form is available for download at the Texas NRCS website under Plant Materials, which can be found at: www.tx.nrcs.usda.gov/technical/pmc/pm_forms.html.
2. Read about and understand the physiology of the plant to the point that you know the best time to collect vegetative material and which plant part is required. Vegetative material may consist of rhizomes, tubers, corms, bulbs, or the entire plant.
3. Collect plants. Usually, the best time to collect entire plants is when they are dormant, however this is not always possible. The benefit of collecting a dormant plant is that it usually has stored carbohydrates for spring regrowth. When collecting plants, choose plants with healthy looking root systems. The roots or rhizomes should be plump and light colored.
4. After choosing a plant, use a shovel and clippers to collect the plant. Use a shovel to vertically cut the roots that extend out from the base of the plant: 2 – 4 inches from the base is usually adequate. Dig at least six inches below the plant to avoid shearing off too many roots. Take the whole plant out of the ground and shake excessive soil from the roots.
5. If the plant is small (around six inches or less) leave the clump intact. If the plant is larger than six inches round, divide it with a sharp pair of clippers or a shovel. A straight shovel is good for dividing the root bundle. Leave an abundant amount of roots on the divided portions. Clip the top of the plant down to 5 inches. This will reduce the amount of plant transpiration during shipment if the plant is not dormant.
6. Shortly after digging the plant, moisten the roots with water and wrap with wet newspaper or paper towels. This prevents the plants roots from drying .It is advisable to avoid making vegetative collections in the morning if the collected plans will be left exposed to sunlight for the remainder of the day.
7. Place the root bundle in a clear or white plastic bag such as a grocery bag. Do not use dark plastic bags as they tend to rapidly absorb solar heat and damage the collected plant. Do not tie or otherwise seal the bag. Loosely fold and tuck the top of the bag.
8. Document the exact collection location and clearly note each plant with its corresponding collection location.
9. Keep the collected plants moist and in a cool, shaded area until they can be packaged and sent to the plant materials center requesting the collection.
10. Send the vegetative shipment early in the week to avoid storage in a nonair-conditioned room at the post office or shipping warehouse over the weekend. Excessive heat can severely damage or kill vegetative materials.

Vegetative Material Collection Process:



Vertically cut the roots and dig around the plant base.



Shake off the excessive soil and moisten the roots.



Clip the top of the plant down to about 5 inches and leave an abundant amount of roots.



Moisten the roots and wrap with wet newspaper or paper towels.



Pull the bag up over the root bundle.



An individual eastern gamagrass rhizome.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, Large print, audiotape, etc.) should contact USDA's Target Center at 202-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call 800-795-3272 (voice) or 202-720-6382 (TDD). USDA is an equal opportunity provider and employer.