Collecting Seed from Tallgrass Prairie

Seed of many native species are now commercially available for prairie reconstructions, large or small. Yet many people have an interest in collecting and growing native species for butterfly gardens, backyard and schoolyard wildlife habitat, and prairie restorations. Seed collecting is satisfying and rewarding, a great volunteer activity for introducing people to prairies, and a good way to obtain seed for local prairie restorations.

Which species?

Any species can be collected by hand, but hand collecting is particularly useful in collecting seed of native species which:
- occur as uncommon or patchy species in native prairie.
- are very low- or high-growing species or early- or late-ripening species.
- occur on specific sites that may be inaccessible to machine harvest.

Which species can be introduced into prairies, and a good way to obtain seed for local prairie restorations.

Equipment Needed

This is a basic list of equipment necessary for efficient hand harvesting:
- Leather work gloves
- Good quality pruning shears or heavy-duty scissors (and band-aids)
- Large plastic unbreakable combs
- Duffles, light weights bags of various sizes
- Backpack for carrying extra water
- Appropriate clothing - sturdy footwear, long pants, hat, extra water
- Binoculars for scouting
- Backpack for carrying extra bags
- Durable, light weight tubs of various sizes
- Large plastic unbreakable combs
- Small comb teeth strip seed dispersal.
- Leather gloves and good-quality scissors or shears are a must for effective seed collecting. Unbreakable plastic combs are inexpensive and efficient tools for stripping grass seed. Choose brightly colored tools that will be easy to spot if dropped or misplaced in the prairie while collecting.
- Use breathable bags (cloth or paper) for collecting that will allow moisture to escape. Even seemingly dry seed/seeds retain enough moisture when first collected to cause mildew or rot if left unchecked in plastic bags. Use care not to leave collected material in closed vehicles that leave collected material unattended in plastic bags. Use care not to have collecting materials inside vehicles.
- Seedheads of pale purple coneflower (Echinacea pallida) into enclosed in half to reveal lighter-colored seeds tucked in between bracts.
- Seed dispersal.
- Seed can be stripped by hand from many species. Efficiency can be improved by keeping both hands free by fastening collection bags and containers around the waist. In species with seed in “salt-shaker” pods, try tipping the pod into an open container to collect (shooting star, giant St. John’s wort, larkspur, wild columbine). This will minimize the need to clean seed later. If seed is held tightly in the seedhead, simply clip a portion of the seedhead for later cleaning. Prickly seedheads like rattlesnake master (Eryngium yuccifolium) or pale purple coneflower (Echinacea pallida) will require gloves and shears for efficient collecting. Plastic combs aid stripping of seed from grasses as illustrated in the photo below. Species with explosive pods can be bagged with nylon hosiery just prior to seed dispersal.

Collecting from Remnant Prairies

Remnants are small remaining patches of the original prairie landscape that have not been cropped, over-grazed, or otherwise destroyed. Very few remnant prairies exist in the mid-west today, and most are in need of careful management if they are to be conserved. A commonly expressed rule is “take half, leave half,” when harvesting seed from remnants. Be mindful of legal and ethical considerations when collecting. While remnants are important local genetic sources of seed stock for restorations or seed nurseries, they should not be directly exploited for commercial production of seed.

Federal and state endangered and threatened species cannot be collected without proper permits, and should only be done as part of a recovery effort by qualified professionals.

Where to Collect?

Many areas have been planted to native species (reconstructed prairies) that provide important wildlife, soil and water quality benefits. They have far fewer species than remnant prairies, and often the local sites are a remnant, but not the original site of seed for the planting has not been recorded or is unknown. If seed source is important for your project, collect from planted prairies only if you know the original source of the seed and it meets your restoration goals.

Be mindful that removal of any plant or plant part from preserves, natural areas, and parks is restricted, so check with the proper agency before collecting in these areas. Harvesting from roadsides may be restricted in some states and counties. Many counties in Iowa, for example, are planting native prairie in roadside rights-of-way. Ask permission from the county roadside managers, engineers, or state department of transportation before collecting from roadides.

Obtain permission from the landowner or proper land management agency prior to collecting.

Removal of any plant or plant part from preserves, natural areas, and parks is restricted; check with the proper agency before collecting in these areas.

Collecting Seed for Genetic Diversity

An important restoration goal should be to capture genetic diversity from remnant populations. Here are some rules of thumb to guide your efforts. First, of course, be reasonably sure the site is a remnant (never plowed, not planted). Collect seed from at least 20 to 30 well-dispersed individuals within a population, if possible. Randomize the process, avoid intentionally selecting plants based on size, color, vigor or any other trait.

The point is to capture e. g. i. e. diversity, not novelty. To sample large populations, walk transects and collect seed perhaps every 10 paces. Collect roughly equal amounts of material (seed or seedhead) from each plant you encounter. If collecting from multiple sites, attempt to equalize the contribution of seed from each site, particularly if collecting seed as foundation stock for munary production to generate seed for other restorations.

Remnants provide genetic diversity through which to capture genetically unique material that may not be available elsewhere.

Keep in mind two important ideas:
- The site is as important to collect rough equally amounts of seed from several individuals in the population.
- Generally speaking, near neighbors are more closely related genetically than distant individuals, so it is important to collect seed from throughout the population.
**Species Harvest Times for Iowa**

Approximate seed maturity times for selected tallgrass prairie species in Iowa. Cold, moist conditions will tend to delay seed maturity, while hot, dry conditions hasten it. Latitude will also affect ripening since many plants flower and set seed in response to photoperiod. Seed maturity occurs earlier in populations adapted to northern Iowa, and later in populations adapted to southern Iowa. Optimal Collection Periods when the most species are likely to be in fruit are indicated in red. Data compiled from collection records of the Iowa Ecoregion Project, Iowa NCRS Staff Biologist Jennifer Anderson-Cruz, and The Tallgrass Restoration Handbook.

**Key:**
- **Optimal Collection Period**
- **Seed Ripening Period**

---

### Native Grasses

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>1-10</th>
<th>10-20</th>
<th>20-30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>May</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>June</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>July</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>August</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>September</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>October</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>November</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Native Legumes

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>1-10</th>
<th>10-20</th>
<th>20-30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>May</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>June</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>July</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>August</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>September</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>October</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>November</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Native Sedges

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>1-10</th>
<th>10-20</th>
<th>20-30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>May</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>June</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>July</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>August</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>September</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>October</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>November</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Selected Prairie Resources


To request copies, or for more information, contact: Greg Houseal at 319.273.3005 or email greg.houseal@tallgrassprairiencenter.org

---

**When to Collect?**

Seed ripening and timing of harvest varies by species, environmental conditions, and regional adaptation of plants. Most species ripen gradually, so not all seed will be at the same stage of maturity at any given time. Seed maturity usually progresses from top to bottom of the seed head in grasses and many forbs species. However some ripen from the bottom up, as in the blazingstars. Mature seed are usually quickly dispersed either by gravity, wind, water, or animals, so it’s important not to delay collecting.

Harvest grasses at the hard-dough stage, when firm and fleshy pressure slightly dents the carpus. Many grasses do not hold seed long after maturity. Best ripeness by firmly striking the seed head against palm; if some shattering occurs, the seed is ready to harvested.

In forbs, species, the seedhead or stalk immediately below will appear dry or discolored as seed matures. A notable exception are the spiderweeds (Trachelium), members of the dayflower family, which drop mature seed while bracts remain green and other flowers in the same cluster are in bud or blooming. Species with dispersal apparatus, i.e. ‘parachutes’ (blazingstars, asters, goldenrods, milkweeds) will appear dry and fluffy at maturity and should be picked immediately at this stage. Some species forcefully eject seed at maturity (phlox and violets, for example), and must be checked daily or bagged loosely with a mesh bag so seed is captured upon dispersal.

---

**Keeping Records**

Keeping records of where and when you collect provides important information about a prairie restoration. Basic information to include is location (county, township, section and quarter section), soil type (sandy, clayey, loamy) and moisture (wet, medium, dry), slope and aspect (direction, slope faces), approximate size of population, number of plants collected from, and date. It’s a good idea to include a sketch of the site to jog your memory about where the species occurred within the prairie.