



St. Williams
NURSERY & ECOLOGY
CENTRE

BULK SEED MIXES

A guide to establishing native
plants from seed

1. How to use this guide

We've created this document as a quick introduction to help guide the application of your native seed mix. It provides some basic principles and best practices recommended for many site conditions throughout Ontario.

In practice, certain sites will present unique conditions and features to consider. If you have questions, please reach to our team at sales@stwilliamsnursery.com with the details. Our experienced seed team may have more insights to help make your project a success.

2. Basic approach

For best results, we recommend the following steps, keeping your mix and site conditions in mind:

A. Plan the best time to seed:

It's a good idea to review your project goals before you get started. Then, you can assess the best options based on your site conditions, local weather patterns, species in your mix, and more.

B. Prepare your project site:

Before you seed, you will need to remove all weed and invasive species, including most perennial weeds. Then, till and firmly press the ground to open soil for seeds to establish.

C. Apply your seed mix:

You will need to select an installation method well-suited to your site. For most of our mixes, we suggest applying at a rate of 8-12 kg / ha during the late fall for the best results.

D. Monitor and maintain your site:

Although native species are naturally well-adapted to Ontario's landscapes, we recommend you monitor and maintain your new plants for up to 3 years to promote best results.

The following sections provide more details with respect to the core steps listed above.

3. Plan the best time to seed

In most cases, the best time to seed is during late fall, usually between late October to early December. This allows the seed to be stratified naturally over the winter and early spring. The following table breaks down pros and cons based on time of year:

Table 1 – Pros & Cons of Applying Native Seed by Season

Season	Description	Pros	Cons
Fall	Late October – early December (When soil is below 10 °C)	<ul style="list-style-type: none"> Plants from overwintered seed come up better according to their natural schedule when weather conditions allow (i.e., the stratification process that allows seed to germinate occurs naturally based on the weather) Increases wildflower germination through natural stratification Recommended for droughty, sandy soils because seed germinates before summer heat for enough moisture Recommended for clay and wet soils as it will be easier to work and will support better root development before the summer Does not require watering for dormant seeding 	<ul style="list-style-type: none"> Warm season grass seed typically exhibits reduced germination Less opportunity for early spring site preparation For erosion-prone sites, may require a nurse crop to help hold the soil over the fall and winter
Winter	February – March (During a period of freeze-thaw cycles for “frost seeding”)	<ul style="list-style-type: none"> Can broadcast during winter Freeze and thaw cycles will work the seed into the ground 	<ul style="list-style-type: none"> Timing is critical Runoff can cause uneven distribution
Early Spring	March – early May (While precipitation occurs regularly)	<ul style="list-style-type: none"> Results in better establishment than in late spring Watering less critical with spring rains Warm season grass seed germinates better than in fall Next best option for sandy soils if missed fall planting 	<ul style="list-style-type: none"> Limited opportunity for early cool season weed control Not recommended for clay or heavy soils as wet sites can take too long to work, which can reduce the success of seedling survival Unseasonable weather fluctuations can reduce seed stratification and increase chances that seed will remain dormant and not germinate potentially until a following year

Late Spring	May – June	<ul style="list-style-type: none"> • More time for good soil preparation, which is particularly important for heavy soils • More time for spring weed control prior to seeding • Good time for seeding warm season grasses 	<ul style="list-style-type: none"> • Increased chance for low moisture or drought conditions later in spring • Reduced germination of some flower species
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4. Prepare your site

The success of your seed mix depends on weed control and management. Ideally, you should start well before you sow native seed and manage weeds into the establishment periods of the species in your mix. We recommend to:

- Assess your site and avoid planting native species in areas over 10% infested with perennial weeds or invasive species.
- Remove non-native weed or invasive species by covering weeds with barriers to sunlight, multiple herbicide (glyphosate) applications, or a season of cover crop. You can also till the soil to break up weeds and expose their roots.
- Once weed-free, till your seedbed and press it firm. After you're finished, it should be firm enough so that the impression left by a footprint is roughly 1 - 1¼ inch deep.

Please note - It's often worthwhile to delay establishing native species for a year to get control of weed species.

5. Apply your seed mix

You can use various techniques to seed depending your project timing, conditions, and equipment availability. In general, we've found the following methods produce the best results:

- **Drill seeding** with a specialized **native seed drill** (e.g., we use a TRUAX drill) is best for working with fine native seed over large areas
- **Hand seed** or manually embed seeds roughly a quarter-inch deep, particularly in fine textured soils and you can embed between one quarter to a half inch deep in sandy soils
- **Broadcast seed** by scattering by hand or mechanically over a relatively large area, and it's best to then harrow and pack the soil afterwards where possible
- **Hydroseeding** - or hydraulic mulch seeding with a slurry of seed and mulch - is best to use only on inaccessible slopes

Please note mixes typically include a "fine" (wildflower) seed and a "coarse" (grass) seed divided to promote species type distribution.

6. Monitor & maintain your site

During the establishment phase, while wildflowers grow to maturity, it's normal for new plants to look small and weedy, without any blooms. Once your plants are more established, you can then help maintain a thriving, natural site by taking the following steps:

- Continue with effective weed control during the mix establishment period, while wildflowers grow to maturity over 1 – 3 years
- During the first 3 years, you can mow new seedlings back to about 6 inches in height about 2 – 4 times per year to help reduce pressure from weeds
- Once every 3 – 5 years, you can mow sites to 6" or use a controlled burn to maintain native wildflower diversity