

The USDA logo is located in the top left corner, featuring the letters "USDA" in a bold, sans-serif font. To the right of the logo, the text "United States Department of Agriculture" is written in a smaller, stacked font. The background of the entire page is a vibrant, colorful illustration of various wildflowers, including purple, yellow, and pink blooms, with several monarch butterflies and bees scattered throughout.

United States
Department of
Agriculture

How to Choose A GOOD POLLINATOR SEED MIX

ABERDEEN PLANT MATERIALS CENTER

1691A South 2700 West,
Aberdeen, ID 83210
Phone: (208) 397-4133

Text adapted from Corvallis PMC
Illustrations by Cat Bailey

GETTING STARTED

PLANTING A WILDFLOWER SEED MIX IS A GREAT WAY TO CREATE HABITAT FOR NATIVE POLLINATORS, beneficial insects, and honeybees. However, choosing which seed mix to buy can be a daunting task because there are many different mixes available on the commercial market that vary widely in price and species composition. The following tips, compiled from studies and trials conducted at the Aberdeen Plant Materials Center, should generally apply to most of Idaho and Utah in sites with irrigation or in areas receiving 14 or more inches of annual precipitation.

Natural Resources Conservation Service

USDA is an equal opportunity provider, employer and lender.

WHAT YOU NEED TO KNOW WHEN PICKING YOUR MIX

Percent of each species in the mix and total seeds per pound for the mix. Some vendors do not publish this information on their website or the seed label but will provide it if you ask them. If they are unable to supply this information, we recommend that you find another vendor who can tell you what you're buying. Use the percentages to determine the balance of annuals, short-lived perennials, and long-lived perennials in the mix (aim for 20 to 40% of each type).

Find the following publications at the Aberdeen PMC website:

<https://go.usa.gov/xAfQe>

*VENDORS

TN 33: Plant and Seed Vendors for Idaho, Montana, Nevada, Oregon, Washington and Wyoming

FURTHER READING

TN 2a: Plants for Pollinators in the Intermountain West

TN2b: Plants for Pollinators in the Inland Northwest

TN2c: Plant Materials for Pollinators and Other Beneficial Insects in Eastern Utah and Western Colorado

*This partial list of seed vendors is provided for informational purposes. It does not constitute an endorsement of the vendors, nor does it guarantee the reliability or quality of products.



COMPONENTS OF A GOOD POLLINATOR SEED MIX

1.

Establishing season-long bloom is important for sustaining pollen and nectar resources for pollinators throughout the growing season. Mix specifications by the Natural Resources Conservation Service (NRCS) generally require establishment of at least three species from each bloom period: early (April, May, and June), mid (July and August), and late season (September and October). Ideally, you should have annuals and perennials in each bloom period to ensure season-long bloom every year.

2.

The Bloom Calendar (page 4) lists ideal flowering plants for this region. Use a balance of annuals, short-lived perennials, and long-lived perennials in your seed mix. Annuals provide first year bloom and cover while the perennials are becoming established, but usually fall out completely by the third year. Short-lived perennials bloom heavily in the second year, usually re-seed, and continue to fill in bare areas in the planting. Long-lived perennials will continue to bloom every year and expand over time.

3.

Watch out for species that may dominate a mix. Common yarrow or non-native legumes (e.g. clovers) can become weedy without proper management because of high amounts of volunteer seed and rhizomatous growth or branched roots.

4.

Bunchgrasses, used in small proportions (15% or less of the mix), can provide good insect nesting habitat and prevent soil erosion in winter. Native bunchgrass species for consideration in a pollinator mix include bluebunch wheatgrass, Indian ricegrass, and Nevada bluegrass. A commonly used non-native bunchgrass in Idaho and Utah pollinator plantings is sheep fescue.

SEEDING RATE

Seeding rate should be high enough to establish a solid stand of your planted species so weeds don't have space to move in. We suggest a sowing rate of approximately 75 to 100 seeds/ft² or 10 lbs/acre.

For small amounts of seed, many vendors sell packets of a given weight and provide a suggested area of coverage, but their rates may be too high or too low. Use the example calculations below to determine how much seed you will need to cover the area you intend to plant at a rate of 75 to 100 seeds/ft².

Useful conversion factors

1 pound = 16 ounces = 453.6 grams
1 acre = 43,560 square feet

Example 1

You want to plant a 1,000-square foot area with a seed mix that has an average of 800,000 seeds per pound.

$75 \text{ to } 100 \text{ seeds/ft}^2 \div 800,000 \text{ seeds/lb} \times 1000 \text{ ft}^2 = 0.1 \text{ to } 0.125 \text{ lb}$ (or 45 to 57 g) of seed needed

Example 2

You buy a 3.5g seed mix packet that has an average of 800,000 seeds per pound. How much area will it cover??

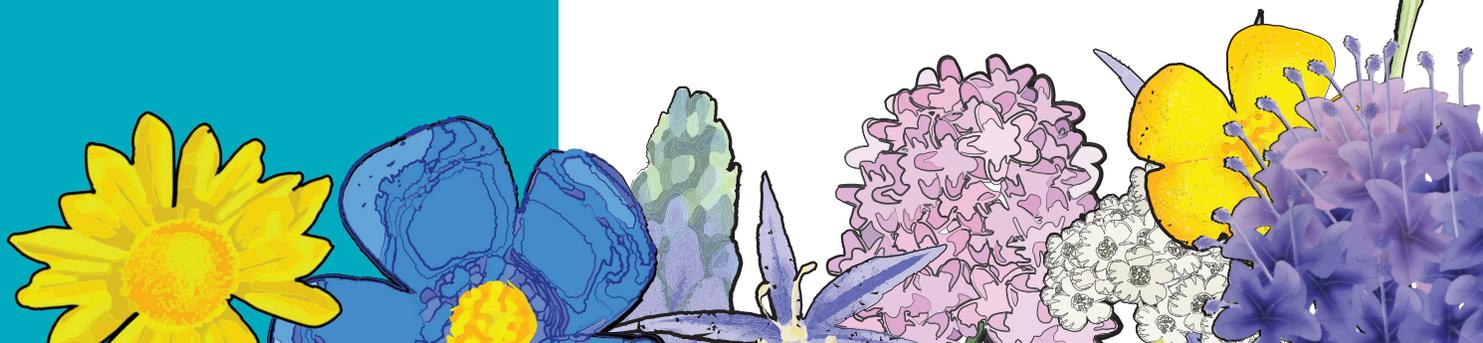
$3.5 \text{ g} \times 800,000 \text{ seeds/lb} \div 453.6 \text{ g/lb} \div 75 \text{ to } 100 \text{ seeds/ft}^2 \approx 60 \text{ to } 80 \text{ ft}^2$

NATIVE VS. NON-NATIVE

Mixes don't need to consist exclusively of species native to Idaho or Utah to provide good habitat for pollinators and beneficial insects. However, native species often establish and persist better over time, while some non-native species are more likely to outcompete other species in a mix. For example, non-native clovers, tend to establish better than other components in the mix and will eventually become the dominant species in the planting. Other non-native species, such as sunflower and lacy phacelia, establish well, provide excellent habitat and readily reseed themselves.

Be aware that pre-made mixes may contain mostly non-native species that may not be ideal for your specific conditions. If purchasing a pre-made mix, it's important to review the list of species and check it against the core list of recommended species from the Bloom Calendar (page 4). If you are unsure about a species in your mix, utilize the PLANTS Database (plants.usda.gov) to find its native range and its invasive status in your region. When in doubt, buy seed from vendors who use local ecotypes.

If you develop your own pollinator seeding mix, select a wide diversity of plants that bloom throughout the growing season. Bloom period is one way to diversify; however, it can be useful to consider other characteristics such as flower size, shape, color, and height to attract a broader array of pollinators. A combination of native and non-native species can help attract a wider range of pollinators too. Native birds and bees will typically visit native plants while non-native honeybees usually seek out non-native plant species.



BLOOM Calendar

| COMMON NAME <i>Scientific name</i> | SEEDS / POUND | SEEDING TIME | BLOOM PERIOD | | | LIFE SPAN |
|--|---------------|----------------|--------------|-----|------|---|
| | | | EARLY | MID | LATE | |
|  BLACK EYED SUSAN <i>Rudbeckia hirta</i> | 1,600,000 | Spring or Fall | ✓ | ✓ | ✓ | ANNUAL  |
|  COMMON SUNFLOWER <i>Helianthus annuus</i> | 81,000 | Spring or Fall | | ✓ | ✓ | |
|  LACY PHACELIA <i>Phacelia tanacetifolia</i> | 245,000 | Spring or Fall | | ✓ | ✓ | |
|  ROCKY MOUNTAIN BEEPLANT <i>Cleome serrulata</i> | 66,000 | Fall | ✓ | ✓ | ✓ | |
|  COMMON EVENING-PRIMROSE <i>Oenothera biennis</i> | 1,400,000 | Spring or Fall | ✓ | ✓ | ✓ | SHORT-LIVED PERENNIAL  |
|  ROCKY MOUNTAIN PENSTEMON <i>Penstemon strictus</i> | 286,000 | Fall | ✓ | ✓ | | |
|  LEWIS FLAX <i>Linum Lewisii</i> | 260,000 | Spring or Fall | ✓ | ✓ | | LONG-LIVED PERENNIAL  |
|  SHOWY GOLDENEYE <i>Heliomeris multiflora</i> | 1,000,000 | Spring or Fall | | ✓ | ✓ | |
|  CURLYCUP GUMWEED <i>Grindelia squarrosa</i> | 410,000 | Fall | | | ✓ | |
|  SMALL BURNET <i>Sanguisorba minor</i> | 42,000 | Spring or Fall | | ✓ | ✓ | |
|  BLANKETFLOWER <i>Gaillardia aristata</i> | 200,000 | Spring or Fall | | ✓ | ✓ | |
|  NEW ENGLAND ASTER <i>Symphyotrichum novae-angliae</i> | 1,100,000 | Spring or Fall | | ✓ | ✓ | |
|  PURPLE PRAIRIE CLOVER <i>Dalea purpurea</i> | 317,000 | Spring or Fall | ✓ | ✓ | ✓ | |
|  WHITE PRAIRIE CLOVER <i>Dalea candida</i> | 278,000 | Spring or Fall | ✓ | ✓ | | |
|  PRAIRIE CONEFLOWER <i>Ratibida columnifera</i> | 740,000 | Spring or Fall | ✓ | ✓ | ✓ | |
|  PURPLE CONEFLOWER <i>Echinacea angustifolia</i> | 117,000 | Fall | ✓ | ✓ | ✓ | |
|  SILVERLEAF PHACELIA <i>Phacelia hastata</i> | 450,000 | Fall | ✓ | ✓ | | |
|  MAXIMILIAN SUNFLOWER <i>Helianthus maximiliani</i> | 200,000 | Spring or Fall | | ✓ | ✓ | |
| SULFUR FLOWER BUCKWHEAT <i>Eriogonum umbellatum</i> | 209,000 | Fall | ✓ | ✓ | ✓ | |
| SAINFOIN <i>Onobrychis viciifolia</i> | 18,500 | Spring or Fall | ✓ | ✓ | ✓ | |
| COMMON YARROW <i>Achillea millefolium</i> | 4,400,000 | Spring or Fall | ✓ | ✓ | ✓ | |