

COVER CROP SEEDING TABLE FOR MICRO-FARMS AND GARDENS



Species Common Name	Type	Life Cycle	Min. Germ Temp	Winter Survival	Optimum Depth (inches)	Surface Broadcast Potential	Rate: Ounces / 100 Sq. Ft.		
							Normal	Low	High
Barley, Spring	Nonlegumes	Cool Season Annual	35F	Never	¾-1½	+	3.2	1.6	6.4
Barley, Winter	Nonlegumes	Winter Annual	35F	Expected	¾-1½	+	3.2	1.6	6.4
Buckwheat	Nonlegumes	Summer Annual	50F	Never	½-1	-	1.1	0.5	2.1
Millet, Japanese	Nonlegumes	Summer Annual	65F	Never	½-¾	-	0.1	0.1	0.1
Millet, Pearl	Nonlegumes	Summer Annual	65F	Never	½-1	-	0.1	0.1	0.2
Oats	Nonlegumes	Cool Season Annual	38F	Seldom	½-1	+	2.4	1.2	4.9
Ryegrass, Annual	Nonlegumes	Winter Annual	40F	Seldom or Expected*	⅙-½	+	0.7	0.3	1.3
Rye, Winter Cereal	Nonlegumes	Cool Season Annual	34F	Expected	¾-1½	+	2.1	1.1	4.2
Sorghum-sudangrass	Nonlegumes	Summer Annual	65F	Never	½-1½	-	1.5	0.8	3.0
Sudangrass	Nonlegumes	Summer Annual	65F	Never	½-1	-	0.8	0.4	1.5
Sunflower	Nonlegumes	Summer Annual	65F	Never	1-1½	-	0.7	0.4	1.4
Triticale, Winter	Nonlegumes	Winter Annual	38F	Expected	¾-1½	+	2.4	1.2	4.8
Wheat, Winter	Nonlegumes	Winter Annual	38F	Expected	¾-1½	+	2.5	1.3	5.1
Kale	Brassicas	Cool Season Annual	40F	Seldom or Expected*	¼-½	-	0.1	0.1	0.3
Radish (diakon type)	Brassicas	Cool Season Annual	45F	Seldom	½-¾	+	0.3	0.1	0.5
Rapeseed	Brassicas	Winter Annual or Cool Season Annual	41F	Seldom or Expected	¼-½	+	0.1	0.1	0.3
Turnip, Forage type	Brassicas	Cool Season Annual	45F	Seldom	¼-½	+	0.1	0.1	0.3
Clover, Berseem	Legumes	Summer Annual	42F	Never	¼-½	+	0.4	0.2	0.7
Clover, Crimson	Legumes	Winter Annual	42F	Expected	¼-½	+	0.4	0.2	0.9
Clover, Red	Legumes	Short-lived Perennial	41F	Expected	¼-½	+	0.2	0.1	0.5
Clover, White/Dutch/Ladino	Legumes	Short-lived Perennial	42F	Expected	¼-½	+	0.4	0.2	0.5
Cowpea	Legumes	Summer Annual	58F	Never	1-1½	-	1.8	0.9	3.7
Pea, Field	Legumes	Winter Annual	41F	Rarely	1-1½	-	3.3	1.1	3.7
Pea, Winter	Legumes	Winter Annual	41F	Seldom	1-1½	-	2.3	1.1	4.5
Soybeans	Legumes	Summer Annual	50F	Never	1-1½	-	3.5	1.8	7.1
Sunn Hemp	Legumes	Summer Annual	68F	Never	½-1½	-	1.9	1.0	3.9
Vetch, Hairy	Legumes	Winter Annual or Cool Season Annual	50F	Expected	½-1½	+	0.7	0.3	1.3
				*Variety Dependent	Seeding Rates based on Broadcast with Incorporation. Normal Rate is based on 100% canopy cover.				

Source: NRCS FOTG / MCCC Selector Tool. Contact the local NRCS / SWCD for additional assistance or recommendations on areas greater than 1 acre.

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Seed Quality

Seed should be tested and/or labeled according to seed labeling requirements of Indiana Seed Law. The Marion County SWCD encourages using cover crops with stated varieties for quality assurance, as opposed to seed listed as “Variety not Stated” or VNS.

Outcomes

Results may vary with soils, climate, and weed pressure. Contact your local USDA-NRCS or SWCD to learn more.

Pure Live Seed vs. Bulk Seed

1. To calculate percent PLS rates from a seed tag, multiply the percent purity by the percent germination.

$$\text{PLS} = \% \text{ Purity or pure seed} \times \% \text{ Germination}$$

2. Divide the desired seeding rate by the % PLS to find the actual amount of seed needed (bulk seed).

$$\text{Bulk Seed (lbs or ounces)} = \frac{\text{PLS needed}}{\% \text{ Purity} \times \% \text{ Germination}}$$

Example: 98% Purity X 60% Germination = 58.8% PLS,
10 pounds PLS seed per acre/.588 PLS = 17 pounds of bulk seed per acre.

Increasing / Decreasing Seeding Rates

The Marion County SWCD often recommends high rates of cover crops for organic production. Some general rules for increasing or decreasing seed rates include:

- As you move north, rates may need to increase – fewer days to achieve desired biomass.
- As you reach the end of the optimum seeding window, rates may need to increase.
- As you increase soil fertility (e.g. manure), rates may need to decrease.
- As you move to a seeding method that is less assured of good seed to soil contact, rates may need to increase.
- If weed control is a primary purpose, then rates should be increased.
- As you move to a more diverse seed mix, the rate may be decreased.

Site Preparation

It is very important to plant cover crops into a weed free seedbed. Pay particular attention to noxious and potentially invasive species. Many of these species are perennials that spread through seed and roots, and may have rhizomatous roots systems that will persist and negatively impact the planting.

Mixing Cover Crop Species

Certain cover crop species can outcompete others in a mix. Seeding rates of these species must be dramatically reduced to prevent them from dominating the mixture.

Grass components of a mixture can be reduced to between half and one-quarter of their seeding rates. Legumes, which tend to be weak competitors, are more safely kept near their full rates to ensure establishment in a stand.

Seeding Method

This chart gives rates based on the seeding method of “broadcast with incorporation”. A good example is spreading seed by hand and covering the seeds with soil using a garden rake. Surface broadcast potential indicates if a cover crop might succeed without incorporation.

Adapted from:
<http://articles.extension.org/pages/72973/making-the-most-of-mixtures:-considerations-for-winter-cover-crops-in-temperate-climates#how>