



This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under agreement number 2021-38640-34714 through the North Central Region SARE program under project number LNC21-446. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

CULTIVATE The logo for Cultivate KC. The word "CULTIVATE" is in large, bold, green letters. To the right of "CULTIVATE" is a small green icon of a leaf with the letters "KC" inside it.



National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE

NO Till Farming

Healthy Soil Doesn't Need Tilling



Soil Health Principles

1. Keep soil covered
2. Do not till
3. Maximize biodiversity
4. Maintain living roots
5. Integrate animals, including pollinators



Common Practices:

- Mulching
- Crop rotation
- Using cover crops
- Keeping residues
- Organic fertilizers-
 - Azomite, feather meal
- Perennial beds
- Pollinator plantings
- Permanent raised beds
- Maintaining weeds when small, no weed seeds



Terminate Cover Crop and Shape Beds With:

BCS flail mower



BCS rotary plow



Terminate Cover Crop With:

Mower



String Trimmer



Get Rid of Weeds With:

Silage Tarp



Hand tools



Feed Your Soil With:

Compost

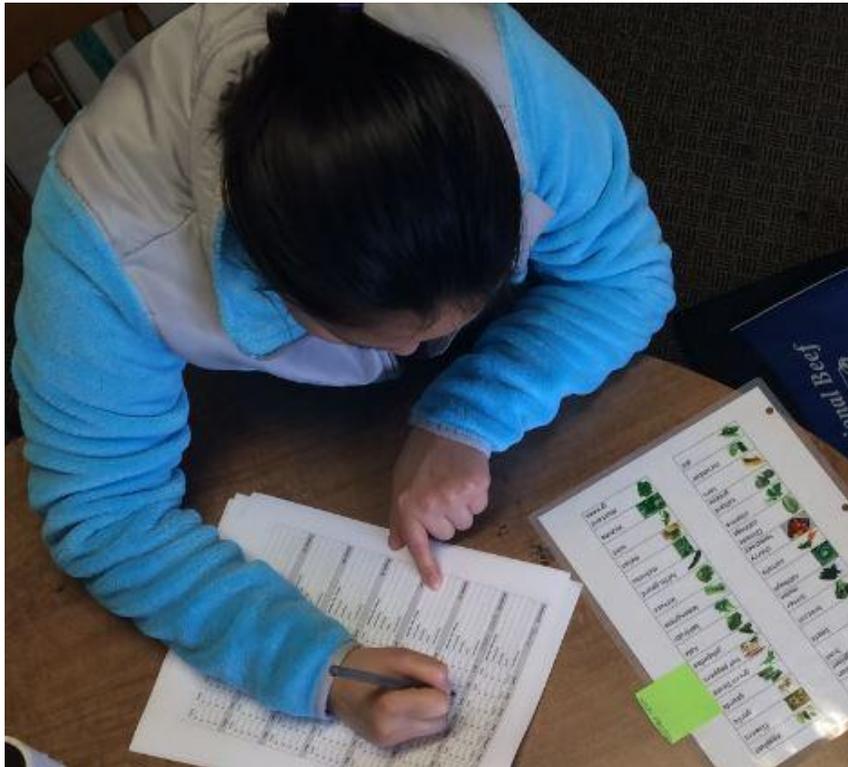


Straw



What Helps?

Planning



Time to allow soil health to build



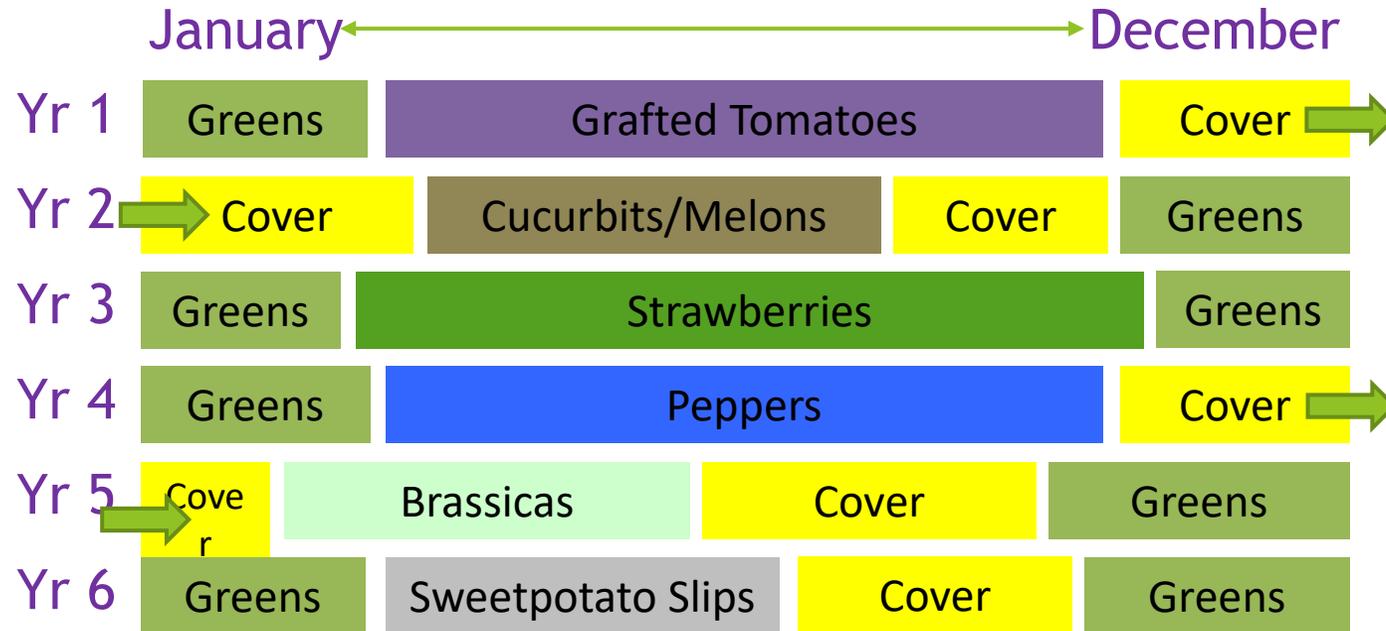


How to start cover crop seeds

1. Make a plan: When will you seed? When will you terminate? Plan for at least 8-10 weeks between seeding cover crop and planting next crop.
2. Prepare the bed
3. Measure the seeds- how much do I need?
4. Covering seeds
5. Watering in

Step 1. Make a plan

A few scenarios for planning your plot



cover crops for winter

cover crops that are mid season

Give yourself at least 8-10 weeks between seeding and planting next crop

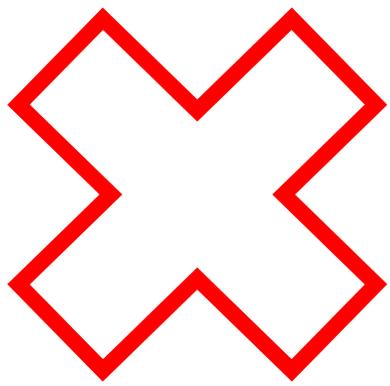
Step 2. prepare the bed



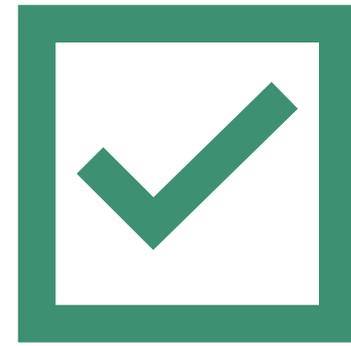
Step 3. how many seeds do I need?

- 1 gallon bag seeds about 2 beds at JGTF
- More is better





**Seed germination-
should cover soil**





Step 4. Covering the seed

Step 5. Watering in

Options:

Seed before a rain

Overhead irrigation- use sprinklers to help

Seeds must get water to germinate properly





Ready to terminate

Using Silage Tarp to Prepare Weed-Free Field



Objective: Farmers will learn to use a silage tarp to cover the soil and prevent weeds.



You will need silage tarp and sand bag weights.



Start with a clear plot in early spring.



You can also start with a plot planted with cover crop.



Unroll silage tarp on plot.



Pull tarp to cover plot.



Secure tarp with many weights to hold it in place.



Remove tarp at least 3 weeks later when ready to plant. The area under the tarp is now weed-free and ready for cultivation or planting.



Fold up the tarp to store to use again.

Juniper Gardens Training Farm Cover Crop Guide

Why Cover Crops?

- **Protection:** Protect soil from water and wind erosion and weeds; reduce leaching of nutrients
- **Structure:** Root systems penetrate deeply into soil facilitating circulation of oxygen and water
- **Fertility:** Feed life beneath the soil, activate nutrients, and fix nitrogen from the air
- **Biodiversity:** Promote and protect microorganisms and provide food for pollinators

Planting Guide

Crop	Days to Flower	Sowing Date	Seeding Rate (100 sq. ft)	Winter Kill (y/n)	Notes
Buckwheat	40-50 days	Late April – Late Aug	4 oz.	Y	Not frost hardy. Covers the soil quickly: good weed control; attracts beneficial insects
Oats	60-90 days	March— May, Aug – Sept 15	4-6 oz.	Y	Dies over winter and leaves a thin mulch on the ground in spring.
Cereal/Winter Rye	60-70 days	March— May September— November	4 oz alone or mixed with 1-2 oz vetch	N	Can be sown later than anything else, common companion with hairy vetch
Winter Peas	60-70 days	Sept 10 – late Oct	9 oz in mix with 4 oz oats, 13 oz. alone	N	Works well mixed with oats. Peas sometimes regrow in spring. Tasty can be harvested as well.
Hairy Vetch	60+ days	May – Early October	1-2 oz vetch with 4-6 oz rye	N	Grows more slowly than common vetch. Survives winter well when accompanied by a shelter crop (fall rye).
Crimson Clover	60-70 days	Late April – mid Sept	1-2 oz. clover plus 2 oz. oats or rye	N	Deep rooting legume; attracts beneficials and provides lots of nitrogen, mix with coarse sand for even spread

Term-N-Mix	60-70 days	April—May, Aug – mid Sept	1-2 oz	Y (except clover N)	Clover may regrow in spring but radishes will open up compacted soil, Don't plant when its too hot or radish will bolt too early
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