

COVER CROP (340) ORGANIC REQUIREMENTS IN TENNESSEE 2012 Environmental Quality Incentives Program (EQIP)

Primary purpose: Increase soil quality, increase beneficial pests, immobilize nutrients for later mineralization and to reduce soil erosion.

Eligible Land: Cropland managed organically or transitioning to organic where annual crops are grown with seasons of no crop cover. Ideal is to plant cover crop following a low residue crop like soybeans, tomatoes or okra.

Planting season and termination: The objective is to continue the growth of the plant and production of biomass above and below the ground for as long as possible before the following crop is planted. Allow cover crop to cover ground and be a minimum of 8 inches tall, taller is better. In order to benefit from nitrogen fixation by legume cover crops, allow legumes to reach the bloom stage prior to being killed. For pollinator crops allow plants to reach full bloom. Cover crops will serve as cover for a minimum of 90 days. March 1 is the earliest date any cool season cover crop should be terminated, August 1, for warm season cover crops. Consider leaving cover crops on the surface and kill with a crop roller, planting the following crop no-till into the crop residue.

Leave an untreated area: Leave a portion of the field or similar field to compare results with. Building soil can be a long term process however; increasing organic matter improves moisture and nutrient holding capacity. Payment is based on acres planted in cover crop.

Planting Options: when planting with a drill use the lower recommended seeding rate, early seeding is preferred. In developing mixes seed a minimum of 20% of each species, 17% for six species mix. Total seeding rate will equal 100%. Grasses improve bulk density of the soil and tap roots reduce compaction. Mixtures should be composed of species that have similar planting dates. Up to 17% of mix can be a species that will be terminated by frost or heat. E.g. buckwheat with cool season mix planted in August.

Organic Planting Options: Seed will come from an organic source

Organic Single species: Cereal Rye is recommended due to affect on weed control.

Sub-Soiler Cover Crop: (sub-soiler cover crop): intent is planting tap root crop to reduce compaction, it is recommended to plant 20% of a grass species with the tap root species.

Seasonal High Tunnel – Legume: Legume cover crops alone or with 20% grass sown inside high tunnels. Convert seeding rate per acre to lbs per sq ft by dividing the lbs/ac by 43.56 to equal lbs seed/1,000 sq. ft.

Organic 2 to 5 species (cool or warm season mix): see planting options above and in tables.

Organic 6+ species (cool or warm season mix): see planting options above and in tables. Equal proportions would be 17% of full seeding rate.

Cover Crop Example Mixes		
Crop Mixtures	Seeding Rate	Seeding Date
Mixture 1		
Wheat	90 lb/ac	Aug 15 to Oct 15
Crimson clover	15 lbs/ac	
Mixture 2		
Austrian Winter Peas	45 lbs/ac	Sept. 1 to Oct 15
Oats	100 lb/ac	
Mixture 3		
Cereal Rye	60 lb/ac	Aug. 15 to Oct 15
Hairy vetch	20 lbs/ac	
Mixture 4		
Browntop millet	15 lb/ac	July 1 to Aug 1
Buckwheat	35 lb/ac	
Mixture 5		
Wheat	90 lb/ac	Aug 15 to Oct 15
Red clover	4 lb/ac	
Cereal Rye	60 lb/ac	Aug 15 to Oct 15
Oats	28 lb/ac	
Turnips	1 lb/ac	
Red clover	2 lb/ac	
Winter Peas Austrian	9 lb/ac	

Mixture 6		
Cereal Rye	60 lb/ac	Aug 15 to Oct 15
Crimson clover	10 lb/ac	
Yellow blossom Sweet clover	8 lb/ac	
Forage Radish	2 lb/ac	
Mixture 7		
Sorghum	30 lb/ac	May 20 to June 20
Browntop millet	5 lb/ac	
Buckwheat	10 lb/ac	
Cowpeas	10 lb/ac	
Sunflower	1 lb/ac	

Additional seeding options (Develop mix with 20% or more of desired species)				
Plant Species	Peak Bloom Period	Seeding Rate Lb/Ac	Seeding Date	Note
Buckwheat (WSA)	21 day after planting	35 – 50	June 1 to Aug 15	Quick warm season cover, can be added as a minor component of fall cool season mix
Clover, crimson (CSA) (ss)	May	15 – 20	Aug 15 to Oct 15 Feb 20 to April 1	Tap root, late spring growth
Clover, berseem (CSA) (ss)	June	15 – 20	Feb 20 to April 1	Tap root
Clover, red (CSP) (ss)	July	8 – 12	Aug 15 to Oct 15 Feb 20 to April 1	Tap root
Cowpea (WSA) (ss)	July	30 – 90	May 20 to June 20	Tap root, High N producer
Millet, Browntop (WSA)	August	25 – 40	May 1 to July 1	Quick cover
Oats (CSA)	May	140 - 210	Sept 1 to Oct 1	May freeze out
Radish, forage (CSA) (ss)	-	7 to 13	Aug 15 to Oct 15 best sown before Sept 15	may freeze out at 25 degrees F, tap root
Rye, cereal (CSA)	May	50 to 100	Aug 15 to Nov 20	Allelopathic to palmer amaranth, plant small seeded crops 3 to 4 wk after rye termination
Sorghum (WSA) (ss)	July	30 to 45	May 1 to June 20	Strong roots
Sunflower (WSA)	July - Aug	4 to 10	April 15 to May 15	Fast establishment
Sun hemp (WSA)	-	30 to 60	May 1 to July 20	Need 60 days minimum growth high biomass and N producer
Sweet clover (CS Biennial) (ss)	July	8 to 20	Aug 15 to Oct 15 Feb 20 to April 1	Allelopathic to thistle and green foxtail
Turnips (CSA) (ss)	-	4 to 12	Aug 15 to Oct 15	Very small seed (electric seeder or carrier like pelletized lime recommended)
Vetch, hairy (CSA) (ss)	May	10 to 20	Aug 15 to Oct 15 Feb 20 to April 1	Can be invasive, late spring growth
Wheat (CSA)	June	60 to 90	Sept 15 to Nov 10	Low cost quick cover
Winter Peas, Austrian (CSA)(ss)	May	45 to 60	Aug 15 to Oct 15	Slow to establish
<p>Note: CSA = Cool Season Annual, CSP = Cool Season Perennial, WSA = Warm Season Annual, WSB = Warm Season Biennial, SS = Sub-Soiler</p>				