USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

SC NRCS Cover Crop Guide Rev. 11/2016

Warm Season Covers

Species	Nitrogen contribution	Biomass (y/n)	Deep rooted	Weed Suppress	Maturity (early/late)	Plant type	Suited for late planting?	Pounds per acre: Drilled rate**	Broadcast rate**	Mix rate w/ 3 or more species
cowpeas	y	n	n	n	late	legume	yes	30	50	20
soybeans	y	n	n	n	late	legume	no	35	50	20
sorghum-sudan grass	n	y	y	y	late	grass	yes	25	45	15
german foxtail millet	n	y	n	y	early	grass	yes	15	25	8
buckwheat	n	n	n	n	early	forb	yes	45	55	10
pearl millet	n	y	y	y	late	grass	no	15	25	8
sunflower	n	n	y	n	late	forb	no	10	20	8
sunnhemp	y	y	y	y	late	legume	yes	15	25	10
Egyptian Wheat	n	y	y	y	late	grass	no	10	15	5

Ideal planting dates for warm season annuals above:

Coastal Plain	Piedmont	Mountains
April 15 - June 1	May 1 – June 15	May 15 – June 15

Cool Season Covers

Species	Nitrogen contribution	Biomass (y/n)	Deep rooted	Weed Suppress	Maturity (early/late)	Plant type	Suited for late planting?	Pounds per acre: Drilled rate**	Broadcast rate**	Mix rate w/ 3 or more species
vetch(hairy,cahaba)	y	n	n	n	early	legume	yes	15	20	5 to 8
crimson Clover	y	n	n	n	early	legume	no	15	20	5 to 8
cereale Rye	n	y	y	y	early	grass	yes	60	120	20-30
triticale	n	y	y	y	early	grass	no	60	120	20-30
spring peas	y	n	n	n	late	legume	yes	40	60	30
blue lupine	y	n	n	n	late	legume	no	40	60	25
rape/canola	n	n	y	n	late	forb	yes	3	5	1
turnips	y	n	n	n	late	forb	yes	4	6	2
oats	n	y	y	y	late	grass	no	60	60	25-35
radish*	y	n	y	n	early	forb	no	5	8	2
kale	n	n	y	n	late	forb	yes	5	8	2
mustard	n	n	n	n	late	forb	yes	4	6	2
barley	n	y	y	y	early	grass	yes	60	120	25-35
austrian winter pea	y	n	n	n	late	legume	yes	35	50	20

*Will winter kill after several nights with temps in the teens. Can be used in the understory of a warm season mix

**When planted as a single species, cut seeding rate in half with 2 or more species

Ideal Planting Dates for cool season grasses and legumes:

Coastal Plain	Piedmont	Mountains
Sept 1 - Oct 15	Aug 25 – Oct 1	Jul 25-Sept 15

Ideal planting dates for brassicas (radish, rape, ect.):

Coastal Plain	Piedmont	Mountains
Aug 15 - Oct 15	Aug 1 – Oct 1	Aug 1 - Sept 15

When developing a mix consider the following (in order of importance):

1) Broadcast or drilled: The bigger the seed, the more seed to soil contact is important. Species like Austrian winter pea or cowpeas do not work without drilling or some form of incorporation (disking, vertical-till).

2) Purpose: Is weed suppression/high biomass important? **OR** Is residue decomposition/nitrogen fixation most important?
Rye, sorghum-sudan, and other grasses are best suited for high biomass, nutrient scavaging, and compaction reduction.
Radishes and legumes are best for providing N, P, and K to the following crop, but not the best for weed suppression.

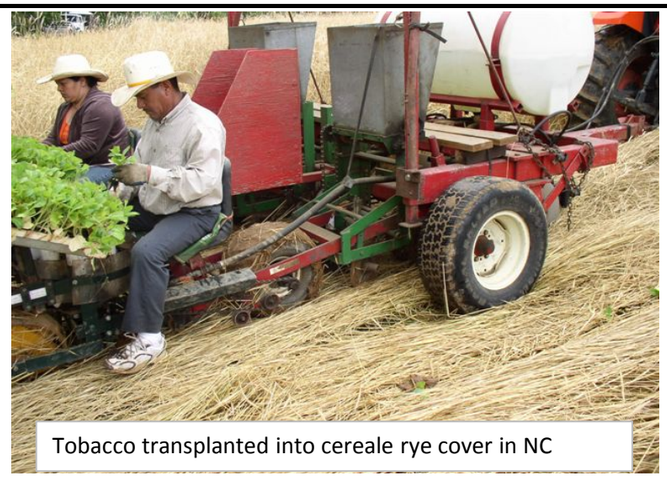
3) Planting date: Planting in November-December after late beans or cotton? How long do you have before first frost?
As a general rule, increase seeding rates 30-50% for late season planting. Some species like diakon radish do not do well planted late in the fall.

4) Cash crop rotation: Cover crops need to provide a rotation benefit to your cash crop and stimulate the soil beneficials and soil biology. For example: Crops like corn and grain sorghum are grasses, and a winter cover crop of rye would not be the best choice, because cereale rye is also a grass. Some rye would not be problematic to include in the cover crop mix to scavenge residual nitrogen, but a legume (ie: clover) and brassica, like diakon radish, would be a better choice. Likewise, if your cash crop is peanuts, cotton, soybeans, or vegetables then a consideration of a grass (like rye or oats) would be a good choice since these cash crops provide little residue after harvest, and are all broadleaves. Cover crop mixes are superior to monocultures when looking to improve soil health.

5) Price of the mix:
Some seeds are larger than others: cost per pound doesn't reflect the # of seeds per pound. If one can get more acres planted for the same money, then switching species may be beneficial, especially on large acreage. Some vendors have mixes that are very economical ($20-25/per acre). Keep in mind, the later in the year you plant, or broadcast seeding, could result in increased seeding rates and a higher cost per acre.

Disclaimer: This list contains the most common annual species best suited to South Carolina climate, as well as most readily available from most seed dealers. If you have a species that should be added to this list, or have questions please contact NRCS State Agronomist: Gordon Mikell @ 803-253-3893 or gordon.mikell@sc.usda.gov

Excellent season long weed suppression. Corn had no postemergent herbicide applied.
photo: Carter Farms 2016



Tobacco transplanted into cereale rye cover in NC

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Cover provides cooler soil temps. and weed supression if allowed to mature in the