

Cover Crop Guidance

revised: 09-12-14

Single Species:

At a minimum the seeding rate must equal the recommended seeding rate for the cover crop being seeded. Higher rates are acceptable depending on purpose and location in the state.

Multiple Species:

For cover crop mixes the sum of the Percent Full Rate column on the job sheet should be at least 100% since it is the sum of the percent of the recommended rate for each species. It will normally be greater than 100% but should not exceed the upper limit listed on the table below depending on your location in the state or if the field is irrigated.

Recommended Percent Full Rate based on Vegetative Zone

Zone I	100-125%
Zone II	100-150%
Zone III	100-175%
Zone IV	100-200%
Irrigated Fields	100-200%

Note: The sum of the Percent Full Rate column is easily skewed by species with low (< 10 lbs/ac) recommended seeding rates such as turnip, radish & sunflower. It is recommended that these not be considered in determining if the mix meets the criteria based on the sum of the Percent Full Rate column.

The seeding rate for any single species in the mix should not exceed the recommended rate for that species.

If two similar species are being planted the maximum seeding rate for both species combined should not exceed the average recommended rate for both species. For example if both rye and triticale are being seeded the maximum rate for both species combined should not exceed $(36+45)/2 = 40$ lbs/ac.

Minimum Seeds per Square Foot:

The number of seeds per square foot will vary depending on the species selected, however, for erosion control mixes based on cereal grains such as oats, rye, wheat or triticale a minimum of 25 seeds per square foot is required. For mixes based on annual ryegrass the minimum seeds per square foot would be 125.

For ephemeral erosion control a minimum of 30 seeds per square foot is required for mixtures based on cereal grains. Annual ryegrass is not recommended for ephemeral erosion control.

Adjustments to Seeding Rates:

Broadcast rates will be 1.5 times the recommended seeding rates. The job sheet will automatically adjust the recommended seeding rates if broadcast is selected as the seeding method.

Seeding rates for single species cover crops may be increased by up to 50% if grazing is a purpose and should be increased 30-60% if erosion control is the primary purpose. For critical areas such as ephemeral gully erosion control the seeding rate should be doubled. For cover crop mixes consider the number of seeds per square foot required based on the predominant single species in the mix and adjust accordingly. For example, if the mix is based on cereal rye and is to be drilled in concentrated flow areas, the recommended rate for rye would be 90

lbs/ac which would be 31 seeds per square foot so a rye based cover crop mix should have at least 31 seeds per square foot.

Seeding Dates:

Some flexibility in seeding dates is allowed. Depending on the year cover crops could be seeded as much as 7-10 days before or after the recommended seeding dates listed in the data table. Cereal rye may be seeded 2-4 weeks following harvest of corn or soybeans to facilitate early spring establishment. Cover crops that frost terminate should be seeded at least 6-8 weeks prior to first killing frost.

Species Diversity:

For determining the species diversity of a cover crop mix, use the Percent by Number of Seeds column (% by # seeds). If increasing biodiversity is an objective the mix should contain a variety of crop types and they should be fairly evenly represented based on number of seeds. In selecting a cover crop species, be sure it includes at least one different crop type than the crop that it follows.

Note: The C:N ratio column is currently in draft form but will provide some general guidance for planning cover crop mixes.

Species Selection Guide

A cover crop species selection guide has been added to NE-CPA-7 to aid in the selection of cover crop species for a selected purpose. Most of the information included on the table came from Table 1 that was included with the old cover crop standard, Charts 2 and 4A from “Managing Cover Crops Profitably”, the “Midwest Cover Crops Field Guide”, and the ARS Cover Crop Chart. The table is not complete because there is a limited amount of information about some of the species included on the table. A brief description of some of the columns follows.

Biomass Production – A quantitative estimate of the range of dry matter produced in lbs/ac/yr. As some of the data is based on research plots, irrigated systems or multi-cut systems and the cover crops were grown to flowering or maturity, on farm results will probably be toward the lower end of the range.

Lasting Residue – Rates the effectiveness of the cover crop in providing long lasting mulch and assumes that the cover crop is grown to the reproductive stage.

Erosion Reduction – Rates how extensive and how quickly a root system develops and how well it holds the soil. Applies primarily to when the cover crop is actively growing. Long term erosion control should be based on biomass production and lasting residue.

Total N – A quantitative estimate of the total N provided by a pure legume stand from all biomass (above and below ground) in lbs/ac. This is total N, not the fertilizer replacement value.

Additional information can be found in “Managing Cover Crops Profitably”.

REFERENCES

- A. Clark (ed.). 2007. Managing cover crops profitably. 3rd ed. Sustainable Agriculture Network Handbook Series; bk 9.
- Liebig, M.A., H.A. Johnson, D.W. Archer, J.R. Hendrickson, K.A. Nichols, M.R. Schmer, and D.L. Tanaka. 2013. Cover Crop Chart: An intuitive educational resource for extension professionals. Journal of Extension [Online], 51(3) Article 3TOT7. Available at <http://www.joe.org/joe/2013june/tt7.php>

Midwest Cover Crop Council. Midwest Cover Crops Field Guide.