

Mississippi Cover Crop Variety Trials, 2019

INTRODUCTION

Many seed companies and clientele that specialize in forage crops have expanded some of their products to act as cover crops in mixtures or in monoculture. Typically, cover crops are planted before a grain crop to stabilize residual nitrogen or to increase soil nitrogen content (via legumes) for the following crop. In theory, a cover crop can be any plant established for this reason and even include volunteer weeds. However, the most desirable characteristics of a cover crop can include

rapid growth to increase incorporation tonnage, lack of competition with the targeted grain crop, low cost to establish, ability to increase N and organic matter in the soil, and effectiveness at providing ground cover during the winter. Some legumes can provide enough nitrogen through “fixation” to feed the following grain crop, while some grass crops can provide an allopathic effect, as well as increasing soil organic matter, which benefits the following crop performance.

PROTOCOL

Varieties of several cover crop species were evaluated in 2019 as part of Mississippi Agricultural and Forestry Experiment Station (MAFES) small-plot trials. Entries were provided by seed companies as well as breeding programs at state universities. All entries from privately owned companies are tested on a fee basis. Selected varieties that are publically or commercially available may be added by the MAFES forage variety-testing program as a reference check for comparison purposes. In addition, varieties of interest may also be added when applicable. Testing during 2018–19 was conducted at the North Mississippi Branch Experiment Station in Holly Springs, Leveck Animal Research Center Forage Unit on the Mississippi State campus, and Coastal Plain Branch Experiment Station in Newton.

The cover crop trial was planted at all locations in the first week of October 2018. Plots were 6 feet by 10 feet and planted using a precision cone seeder on a prepared seedbed. Trial design was a strip plot replicated four

Table 1. Recommended seeding rates for cover crops.

| Type/Species | lb/A |
|------------------------|------|
| Small Grains | |
| Cereal Rye | 100 |
| Annual Ryegrass | |
| | 30 |
| Legumes | |
| Hairy Vetch | 25 |
| Arrowleaf | 10 |
| Berseem | 20 |
| Balansa | 4 |
| Ball | 3 |
| Crimson | 30 |
| Persian | 8 |
| Winter Peas | 40 |
| Red Clover | 10 |
| Brassica | |
| Radish | 8 |