

Performance of Summer-Seeded Cover Crops

Lizabeth A.B. Stahl¹ and Axel Garcia y Garcia²

¹Extension Educator-Crops, University of MN Extension, Worthington Regional Extension Office, Worthington, MN 56187 (stah0012@umn.edu)

²Sustainable Cropping Systems Specialist, University of MN Extension, Southwest Research and Outreach Center, Lamberton, MN 56152 (axel@umn.edu)



INTRODUCTION

- Farmers are not always able to plant their crop due to extreme conditions (e.g., excessively wet spring), or areas of a field may become devoid of a crop beyond normal planting dates.
- Planting a cover crop in these areas can reduce soil erosion and prevent fallow syndrome, which occurs when a lack of living plant roots from the previous year decreases the population of beneficial soil mycorrhizae which aid in the uptake of nutrients.
- Limited information exists regarding the performance of cover crops seeded mid-season in Minnesota.

OBJECTIVES

- Determine the biomass production of various cover crops seeded mid-season.
- Use results to guide species selection when prevent plant or other establishment/stand issues occur.

RESEARCH HYPOTHESIS

- Cover crops will vary in their productivity when planted mid-season.

MATERIALS AND METHODS

- Cover crops were seeded with a drill in small plots (20ft x 20ft) on 7/13/22 at the Southwest Research Center and Outreach Center near Lamberton, MN, in a RCBD with 4 replications.
- Biomass samples were collected from ~11 ft² (8/26/22) and ~3 ft² (10/31/22) per plot.
- ANOVA was conducted on results and means separated using Fisher's Least Significant Difference (LSD; p=0.05).

Table 1: Cover crop treatments, seeding rates, and seeding depth.

Treatment	Rate (#/a)	Depth (inches)
Cereal Rye (CR)	60	0.50 to 0.75
Crimson Clover (CC)	16	0.125 to 0.25
Forage Radish (FR)	12	0.25 to 0.50
CR + CC + FR	30+8+6	0.75 to 1.50
Pearl Millet	20	0.50 to 0.75
Sorghum Sudangrass	25	0.50 to 1.50
Oat	64	1 to 2
Teff	10	0.125 to 0.25
Japanese Millet	45	0.25 to 0.75

CONCLUSIONS

- Within a sampling date, significant differences were found among the cover crops in the amount of biomass produced.
- Despite a drought during the growing season, sorghum sudangrass performed exceptionally well compared to the other cover crops.

RESULTS

Figure 1: Cover crop treatments prior to biomass sampling on 8/26/22.



Figure 2: Cover crop biomass on 8/26/22.

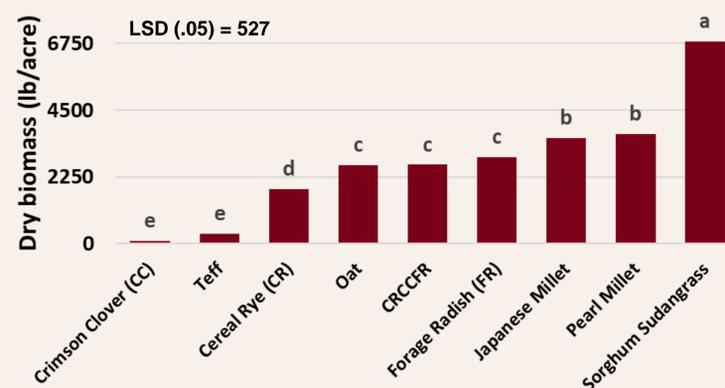


Figure 3: Cover crop biomass on 10/31/22.

