**Weed Suppression from Frost-seeded *Brassicaceae* Cover Crops**

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Cover crops can suppress weeds through a variety of mechanisms including competition for resources. Most research on cover crops has focused on grass and legume cover crops that are seeded in the fall. A field experiment was conducted in central New York in 2022 that compared cover crops in the Brassicaceae family that were seeded in the spring. A randomized complete block design with 4 replications was used to compare 10 treatments (10 brassica cover crop species) and two control treatments (red clover and no cover crop). The ten *Brassicaceae* species and red clover were frost-seeded on March 23 into plots within a field where organic soybean (*Glycine max* (L.) Merr.) was no-till planted into rolled-crimped cereal rye (*Secale cereale* L.) in 2021. Ground cover, cover crop biomass, and weed biomass were sampled in early June. Results show a negative relationship between weed biomass and cover crop biomass, and that collard (*Brassica oleracea* L., var. viridis) provided the among the greatest ground cover and weed suppression. However, biomass of all cover crops was low indicating that frost seeding may not be an appropriate seeding method when soil is covered with soybean residue and mulch from cereal rye.