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Relationship between Winter Cereal Cultivars as Living Mulch and Weed Control in Soybean Cultivation

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Abstract

Weed control and soybean yield were used as measures of the efficacy of eighteen winter cereal cultivars as living mulch. Each cereal cultivar grew well until the beginning of July, and then gradually died off. Shading of the soil surface differed by cultivar, but only cvs. Shinjyuboshi and Benkeimugi provided shade in excess of 90%, a level which has been reported to strongly suppress weed growth. The degree of shading correlated with cereal dry matter and the cereal multiplied dominance ratio (MDR). Weed dry matter at the beginning of August was negatively correlated with cereal plant height and MDR. These results indicate that MDR is an appropriate index for estimating weed control with cereals as living mulches. Soybean yields from field plots with living mulch were lower than from conventional cultivation plots, likely because of imperfect control of barnyardgrass and ladysthumb, which are comparatively shade tolerant.

Key words

[living mulch](#), [multiplied dominance ratio](#), [soybean](#), [weed control](#), [winter cereals](#)

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