



Double-Cropping System for Increased Yield of Soybean

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DESCRIPTION

Sustainable agricultural development should be better researched and implemented with the goal of increasing food production to fulfill the demands of the world's population. With new and innovative technologies and cropping systems, enhanced production methods, and successful educational/technology transfer programmes, the objective of boosting soybean yields is achievable. Double-Cropping (DC) soybean after small grains meets global food demand by producing two harvests in one year while also addressing environmental issues by producing a harvestable "cover crop" and lowering the expense of summer weed management, which has no direct return on investment. With wheat commodity prices falling, farmers are looking for additional ways to boost the productivity of their land and increase their net return.

The effective management of winter wheat is the foundation of a successful double-crop system. Weeds are normally suppressed until harvest in a good, fully tillered, and appropriately fertilized wheat stand. In wheat, the smaller the weeds are, the easier they are to control in soybeans. Several pesticides are available to control broad-leaved weeds and grasses in wheat fields when weeds are a concern. Consider the type of weed problem and the herbicide's potential residual effect on soybeans when choosing an herbicide.

Due to the risk associated with planting double crop soybeans in Michigan, this practice is not recommended. Due to the early wheat harvest and high soybean price, several producers attempted it this year. With the growing season coming to an end, farmers will have to decide whether to harvest the double crop beans for grazing, grain, or plough them down as a green manure crop.

The planting date has a greater impact on soybean grain yield than any other factor. Early planting of double crop soybeans is critical for success, and there are two methods for using it:

1. Wheat is harvested when the grain moisture content is between 18 and 20%. Wheat grain with higher moisture content is sometimes allowed. Grain can also be dried using

air, with or without the addition of supplementary heat. Wheat with higher moisture content gives a higher yield and quality. Grain may sprout when dried grain is re-wetted in the field, yield and test weight will be lowered, and vomitoxin levels may rise. Due to low test weight and excessive vomitoxin levels, grain will be heavily devalued or rejected.

2. After winter barley, a double crop soybean is planted. Winter barley is harvested two weeks sooner than winter wheat, allowing for an earlier planting period for soybeans.

Double-cropping has the potential to affect soybean farmers' financial situation in the Southeast. Furthermore, if the Southeast becomes a significant wheat-producing zone, other wheat-producing regions' financial health may be harmed. The usage of pesticides and tillage methods may vary as a result of double-cropping. Environmental costs or benefits may be imposed as a result of these changes, and they may extend beyond the agriculture industry. Policymakers and others interested in the welfare of American agriculture and the most efficient use of our natural resources will benefit from a better understanding of the major factors influencing the growth patterns of this new technology, as well as the likely input-use changes that growth implies.

A fluted coulter-planter and potentially a subsoil attachment are used in conservation tillage planting for soybeans, but no moldboard plow is used. The coulter slices through the residue on the soil surface in a narrow strip broad enough for the planter to plant the seeds. Previous crop waste is left on the soil surface as a mulch to assist minimize wind and water erosion by trapping moisture and acting as a moisture barrier. Conservation tillage may also help reduce the soybean cyst nematode, which is the most common disease carrier in the United States. Farmers must use post emergence herbicides to manage weeds using conservation tillage, but with conventional tillage, preplant herbicides and between-row cultivation, as well as post emergence herbicides, can be employed. Excessive soil compaction may occur if conservation tillage is used on a regular basis.

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