

RECENT ADVANCES IN DIRECT DRILLING TECHNOLOGY FOR SOYBEAN (GLYCINE MAX L.) PRODUCTION

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Abstract

Soybean (*Glycine max* L.) is one of the most important sources of essential protein and due to its capability for nitrogen fixation, also a key part of the crop rotation. However, water is an important limiting factor to growing crops, an increased interest can be seen in soybean global production in recent years. Soil management systems can affect the quality and sustainability of agricultural production since soil tillage modifies surface cover and directly affects the soil structure. However, the shortage of admissible water and higher costs of production due to the increasing costs of energy resources risk the agricultural production which leads to social, economic and environmental difficulties. Direct drilling is widely used as an important agricultural practice since the continuous conservation tillage improves soil properties and modifies impact of weather extremes. Conservation tillage began during the 1960s in the USA and it is expected to be a widespread agricultural practice in the future. The aim of this study was to evaluate the effects of the direct drilling technology on the soybean yield since direct drilling is getting larger year by year. Scientific literature regarding the influence of direct drilling on the soybean yield quality is quite limited, however, direct drilling is an effective strategy for soybean cultivation considering is beneficial to increase the yield and yield stability and has the advantage of high water consumption. To solve the problem of high costs and low production efficiency in soybean production, the preservation of natural resources and environmental stability are crucial.

Keywords: *direct drilling, soybean, Glycine max L., soil tillage, energy saving*