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Closing wheel and downforce for no-till corn

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Research planter equipped with hydraulic row-unit downforce, various closing-wheel systems, and variable-rate starter fertilizer. Utilizing these technologies, planting corn in no-till production systems can help with emergence depending on soil conditions. Photo by Brian Luck.

No-till production systems present challenges for producers. High residue on the soil surface can interact with the planter, which can cause sub-optimal seed placement and furrow closure, negatively impacting emergence.

New research in *Agronomy Journal* investigated planter systems to improve corn emergence in no-till production systems. Researchers assessed a hydraulic row-unit downforce system, in-furrow variable-rate starter fertilizer system, and aftermarket closing wheels at multiple locations over multiple years in Wisconsin. Treatments included high and low downforce, starter fertilizer versus none, and three different aftermarket closing wheels.

Results from this work showed that the row-unit downforce effected corn emergence. The high soil moisture conditions during planting required lower downforce for proper seed placement and seeding depth. Aftermarket closing wheels maintained corn emergence regardless of the downforce setting.

Planting is a critical operation in crop production. Understanding the implications of planter setup and aftermarket components will help both researchers and producers in making equipment-purchasing decisions for optimizing the planting operation.

Dig Deeper

Drewry, J.L., Arriaga, F.J., & Luck, B.D. (2021). Closing wheel type and row unit downforce can affect corn germination in no-tillage production systems. *Agronomy Journal*. https://doi.org/10.1002/agj2.20774

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