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Three key variables help achieve high soybean yields

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Photo of a soybean trial conducted in central Argentina using common farmer technology. Photo courtesy of Lucas Vitantonio-Mazzini.

Soybean is one of the most important crops worldwide, and Argentina is the third largest global grain producer and largest meal exporter. Today, farmers face the challenge to optimize their management in relation to the environment at each specific field.

A new article in *Crop Science* reviews which management and environmental variables differentiate the yield of soybean fields in the temperate region of Argentina. Trials were conducted by farmers with their current technology and management, making results easily applicable.

Researchers found two management decisions and three environmental variables are highly relevant to distinguish the productivity of analyzed fields. Key management decisions are genotype selection and sowing date, and environmental variables are water table presence, soil type, and rainfall during the crop reproductive periods. The highest yields were achieved when adequately combining genotype, early sowing, and good soil quality with a water table within reachable root depth. The presence of a water table influencing soybean crops generated more stable yields, particularly in coarse-textured soils and under low rainfall conditions.

Results highlight specific management and environmental variables that affect soybean productivity in the region, helping farmers by pointing effective pathways towards higher and more stable yields.

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Vitantonio-Mazzini, L.N., Gómez, D., Gambin, B.L., Di Mauro, G., Iglesias, R., Costanzi, J., Jobbágy, E.G., & Borrás, L. (2020). Sowing date, genotype choice, and water

environment control soybean yields in central Argentina. *Crop Science*, *60*.

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