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Reviewing nutrient management for high yielding soybeans in Russia
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In 2014, IPNI initiated a research project focused on optimization of soybean nutrition. The project is located in two regions: Central and Southern Russia.

Studies in Central Russia were conducted in Belgorod on typical chernozems. The maximum yield (2.9 t/ha) obtained in the treatments with S. Yield increase due to S was 0.04-0.05 and 0.08-0.09 t/ha for S rates 10 and 20 kg/ha accordingly. At the maximum yield S removal was 12.8-13 kg/ha including 4.6-4.7 kg/ha with grain. The S content in grain was on sufficient level only in treatments with S.

Identified crop response to S has practical importance since 99% of arable soils in Belgorod has low content of plant available S that could be the yield-limiting factor for high-yield soybean productivity in this region.

Studies in Southern Russia were conducted on leached and ordinary chernozems. Pod filling of an early maturity variety in 2015 was partly finalized before a drought period occurred in end of July – beginning of August, and a medium maturity variety was negatively affected. The best yield of an early maturity variety of 2.06 t/ha was obtained with a starter $N_6P_{26}K_{18}$ (7% increase over control). The highest yield of medium maturity variety of 1.66 t/ha was achieved with the N_6P_{26} treatment (5% increase).

An ultra-early variety finalized pod filling in 2016 before a drought period. A complex fertilizer sprayed at beginning bloom increased seed yield by 6% compared to control. An addition of starter NPK improved seed yield by 14-17% and allowed to get 2.7-2.9 t/ha.

Further research is needed to study the response of short duration varieties to nutrient management because this maturity group became most productive in the region.