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不同肥密处理对超高产大豆氮素吸收和产量的影响

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摘要： 以超高产大豆品种辽豆14和普通品种辽豆11为试材，在不同磷酸二铵施用量和种植密度处理下，对其氮素积累和产量进行了比较。结果表明：施用磷酸二铵可以促进大豆茎秆、叶片、荚皮、籽粒和全株氮积累，随着种植密度的增加，植株各器官和全株氮积累量呈下降趋势。在生殖生长期，超高产品种叶柄中氮积累量均高于普通品种。随着磷酸二铵施用量和种植密度的增加，2个品种的氮最大积累速率均随之升高，超高产品种的氮最大积累速率均高于普通品种。施用磷酸二铵会不同程度的减少超高产品种生产100 kg籽粒需要吸收的氮量，在22.5×104株·hm^{-2}种植密度下，2个品种生产100 kg籽粒需要吸收的氮量最多。超高产品种生产100 kg籽粒需要吸收的氮量均低于普通品种。随着磷酸二铵施用量和种植密度的增加，超高产品种籽粒产量均逐渐增加，在300 kg·hm^{-2}磷酸二铵处理和22.5×104株?hm-2种植密度下表现最高，普通品种则在150 kg·hm^{-2}磷酸二铵处理和15.0×104株·hm^{-2}种植密度下籽粒产量最高。

Abstract: The variation of matter production ability between super-high-yielding soybean cultivar and common soybean cultivar was uncertain before. The experiment was conducted as a double split-plot design with three replications. Main plots were diammonium phosphate treatments, split plots were planting density treatments and the split-split plots were cultivars. The results showed as follows:diammonium phosphate treatment could promote N accumulation in stem, leaf, pod wall, seed and the whole plant. N accumulation in every part was decreased with planting density increased. N accumulation in petiole of super-high-yielding cultivar was higher than those of common cultivar at reproductive stage. Maximum accumulation rate of nitrogen increased with diammonium phosphate level and planting density enhanced, and that of of super-high-yielding cultivar was higher than common cultivar. Diammonium phosphate treatment could decrease N accumulation of producing 100 kg seed in super-high-yielding cultivar with different degrees. The highest N accumulation of producing 100 kg seed in two cultivars was at 22.5×104 plant·hm^{-2} planting density. Nutrient absorption amount of super-high-yielding cultivar was less than that of common cultivar. The seed yield of super-high-yielding cultivar was increased with diammonium phosphate level and planting density enhanced, the highest one was at 300 kg·hm^{-2} diammonium phosphate treatment and 22.5×104 plant·hm^{-2} planting density. The highest seed yield of common cultivar was at 150 kg·hm^{-2} diammonium phosphate treatment and 15.0×104 plant·hm^{-2}planting density.

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