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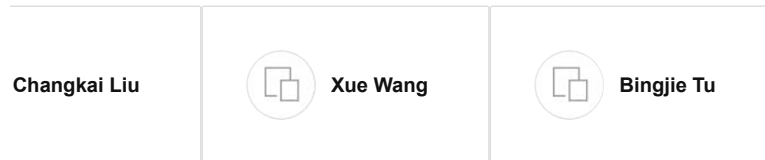
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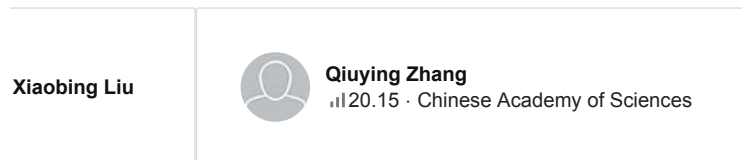
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pot experiments were conducted to select and identify the characteristics of potassium (K) high efficiency soybean genotypes. Forty genotypes under two potassium application levels (0, 120 kg ha⁻¹ K₂SO₄) variations in K concentration, K accumulation, K internal use efficiency (KIUE) and K harvest index (KHI) in experiment conducted in 2016. According to the distinct KIUE for yield (KIUE-Y) and KHI, two K high efficiency genotypes (T117, L113) and two K low efficiency (KLE) genotypes (DZ1, ZX8) were used in pot experiment with levels (0, 120 kg ha⁻¹ K₂SO₄) in 2017 for further investigation. Results indicated that KIUE-Y was significantly related with harvest index (HI) and KHI. Both K and dry matter (DW) were optimally distributed in the seed of KHE genotypes. In contrast, more DW and K were accumulated in vegetative organs of KLE genotypes, which was the main limiting K efficiency. Under K deficiency, KHE genotypes better regulate their DW and K distribution, and increase specific leaf weight with unaffected leaf area.

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variation for potassium uptake and utilization efficiency in sweet potato (*Ipomoea batatas* L.). Field Crop Res

77-154

Lu ·  G Q Lu · W J Zhou

Lu GQ, Zhou WJ. 2002. Genotypic variation for potassium uptake and utilization efficiency in sweet potato (*Ipomoea batatas* L.). *Field Crop Res.* 77(1):7-15. doi:10.1016/S0378-4290(02)00043-6.

partitioning and redistribution as a function of K-use efficiency under K deficiency in sweet potato


211:147-154

Hou ·  G P Zhu · Y Dong · Z Hui · H Ma · X J Xu · Y Nin · Y Ai · Y Zhang

Hou P, Zhu GP, Dong Y, Hui Z, Ma H, Xu XJ, Nin Y, Ai Y, Zhang Y. 2017. Potassium partitioning and redistribution as a function of potassium use efficiency under K deficiency in sweet potato (*Ipomoea batatas* L.). *Field Crop Res.* 211:147-154. doi:10.1016/j.fcr.2017.06.021.

variation in potassium uptake and utilization among sweet potato (*Ipomoea batatas* L.) genotypes. Field

170:76-82

Wang ·  Y Zhang · J Zhou · X Chen

Wang H, Zhang Y, Zhou J, Chen X. 2015. Intraspecific variation in potassium uptake and utilization among sweet potato (*Ipomoea batatas* L.) genotypes. *Field Crop Res.* 170:76-82. doi:10.1016/j.fcr.2014.10.007.

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de · Ama E-S Ali · Abd El-Wahed

de TA, AMA E-S, Ali MM, Abd El-Wahed MH. 2017. Combined effect of deficit irrigation and potassium fertilizer on response, plant water status and yield of soybean in calcareous soil. Arch Agron Soil Sci. 63(6):827-840. 3650340.2016.1240363.

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A field experiment was conducted during December 2008 to April 2009 to investigate the effect of genotypes and row spacing on morpho-physiological characters, yield attributes and yield of soybean with three row spacing of 25, 30 and 35 cm. The experiment was laid out in two factor randomized complete block design with four replications. Branch number plant⁻¹, leaf area plant⁻¹, total dry mass ... [\[Show full abstract\]](#)

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