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Extra-early stress-tolerant provitamin A maize inbreds and hybrids now available

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Cobs of some Provitamin A extra-early maize hybrid (left) and a heavily infested Striga maize field (right).

Malnutrition ranks first among globally preventable health risks. Most Africans subsist on maize diets characterized by low vitamin A levels, which impair immune system function and increase vulnerability to diseases and mortality of African children. In addition, *Striga hermonthica*, drought, and low soil nitrogen are major maize production constraints in West Africa. There is, therefore, a need to improve maize for nutritional quality and multiple-stress tolerance.

In a soon to be published *Crop Science* article, scientists from the International Institute of Tropical Agriculture, in partnership with national maize program scientists of West Africa, reported on genetic enhancement of extra-early (80–85 days to maturity) maize for elevated provitamin A (PVA) while maintaining tolerance to *Striga* infestation, drought, and low soil nitrogen.

Concentrations of PVA of 23.98 and 22.56 $\mu g\ g^{-1}$ were obtained for inbreds TZEEIOR 202 and TZEEIOR 205, which were much higher than the breeding target of 15 $\mu g\ g^{-1}$. Several multiple stress-tolerant hybrids with PVA concentrations > 20 $\mu g\ g^{-1}$ were developed while inbreds and single-cross testers were identified for the development of more hybrids in the future.

The scientists were confident that TZEEIOR 202 and TZEEIOR 205 are invaluable resources for breeding for high-PVA in maize populations and hybrids.

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Badu-Apraku, B., Fakorede, M. A. B., Talabi, A. O., Oyekunle, M., Aderounmu, M., Lum et al. (2020). Genetic studies of extra-early provitamin-a maize inbred lines and their hybrids in multiple environments. *Crop Science*, *60*.

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