

Breeding for superior sorghum lines to be used as lignocellulosic feedstock for biofuel production



New Release Sorghum male lines IA100RPS (ISURF case# 05044) and IA101RPS (ISURF case# 05045) for photoperiod sensitive hybrids. ISU Breeder: Dr. Maria Salas Fernandez (Lab website: <http://faculty.agron.iastate.edu/mgsalas/index.html>)

The sorghum crop is the fifth largest cereal grain in the world, and acreage is increasing continuously as the crop is gaining importance as a versatile plant that can tolerate drought, soil toxicities, a wide range of temperatures, and high altitudes. The market is split into 3 products, i.e. grain sorghum, biomass sorghum (forage and biofuel) and sweet sorghum. The sorghum male inbred lines released by the breeder, i.e. IA100RPS and IA101RPS are restorer lines developed to generate photoperiod sensitive high-yielding biomass hybrids that may be used as lignocellulosic feedstock for biofuel production.



From 2014 to 2018, both IA100RPS and IA101RPS lines were evaluated in hybrid combinations with at least four of the following public maintainer lines: AKS99, ATx2928, AKS107, ATx2922 and AMP455. Hybrids generated with IA100RPS and IA101RPS produced significantly higher biomass yields than those derived from standard checks. Hence, these sorghum lines were released to ISURF in December 2019 and are available for licensing to breeding companies (R&D agreement) who will develop hybrids. For any questions please contact the breeder, Dr Maria G. Salas Fernandez at mgsalas@iastate.edu (tel# (515) 294-9563) or Dr Dianah R. Ngonyama at germplasm@iastate.edu (tel# (515) 294-9442).