



## Technology Overview



# Sterile Sorghum Mutant for 2 Line Breeding

OTT ID #1578

## APPLICATIONS

Joint inventors from UWM and USDA ARS have discovered new nuclear male sterile (NMS) mutants of sorghum which can be used to create an easier breeding system using a two-line system versus the current systems that use three lines.

## TECHNOLOGY

A three-component genetic construct comprising the capacity to produce pure male sterile plants, rescue the male fertility, ablate transgenic pollen, sort the transgenic seeds from non-transgenic seeds, and allow propagation of pure male sterile sorghum plants for hybrid breeding and maintenance of a maintainer line.



## KEY BENEFITS

- **Faster** – 2-line breeding system will allow for faster growth of new sorghum lines
- **Easier** – Currently breeders use 3-line systems making breeding cumbersome
- **Safer** – The transgenic seeds will be removed by molecular ablation and physical sorting to ensure the male sterile plants in the nursery are transgene-free
- **Cheaper** – Maintaining fewer lines should provide a savings in the breeding process
- **Versatile** – Male sterile sorghum plants can be created in diverse genetic backgrounds for hybrids

## INTELLECTUAL PROPERTY

PCT Filed January 2019.

This technology is available for developmental research support/licensing under either exclusive or non-exclusive terms.

## PAPERS:

[Xin et al. 2017. Morphological Characterization of a New and Easily Recognizable Nuclear Male Sterile Mutant of Sorghum \(\*Sorghum bicolor\*\). PLOS ONE, <https://doi.org/10.1371/journal.pone.0165195>](https://doi.org/10.1371/journal.pone.0165195)

[Zhanguo Xin, et al 2018. Registration of BTx623<sub>ms8</sub>, a New and Easily Identifiable Nuclear Male Sterile Mutant in Sorghum. J. of Plant Reg. <https://doi.org/10.3198/jpr2017.09.0063crgs>](https://doi.org/10.3198/jpr2017.09.0063crgs)

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