**NONSTOP GLUMES 1 regulates spikelet development in rice**

A picture containing indoor, sitting, glass, table

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Recently, several genes affecting rice architecture have been identified that may increase yields by increasing the number of grains formed, but as yet the genetic control of rice inflorescence architecture and organ identity is still being worked out. Zhuang et al. identified mutants of the NONSTOP GLUMES 1 (NSG1) gene (encoding a transcription factor) that affect spikelet development and shed light on the gene regulatory networks that specify floral and non-floral organs. Loss-of-function nsg1 mutants show abnormalities and partial conversion of the outer spikelet organs (glumes, lemmas, palea). Additional analysis showed ectopic expression of several organ identity genes in the mutant, including LEAFY HULL STERILE 1(LHS1), DROOPING LEAF (DL), and MOSAIC FLORAL ORGANS 1(MFO1). A greater understanding of the genetic and molecular mechanism of spikelet development could provide additional tools for increasing grain numbers and yields. (Summary by[Mary Williams](https://community.plantae.org/user/MaryWilliams)) Plant Cell [10.1105/tpc.19.00682](http://www.plantcell.org/content/early/2019/12/05/tpc.19.00682)

***NONSTOP GLUMES 1*调控水稻穗发育**

**最近，鉴定出几种能影响水稻株型的基因，这些基因可通过增加形成的籽粒数来提高产量，但目前对于水稻花序结构和器官特性的遗传控制仍有待研究。**

**作者鉴定出影响小穗发育的突变体*NSG1*（编码一个转录因子），并阐明了特定花器官和非花器官的基因调控网络。 而功能缺失性的*nsg1*突变体表现出小穗外部器官（颖片，外稃，内稃）异常和部分转化。 进一步分析表明，该突变体中同一基因在多个器官，包括 *LEAFY HULL STERILE 1(LHS1)*, *DROOPING LEAF (DL)* 以及 *MOSAIC FLORAL ORGANS 1 (MFO1)* 都出现了异位表达。该研究对于水稻小穗的遗传和分子机制的深入理解可为增加水稻籽粒数和产量提供新方法。**