

Researchers make advances in understanding of flower development

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A significant advance in the understanding of the genetic processes underlying flower development has been made by scientists from the Smurfit Institute of Genetics at Trinity College Dublin. The study funded by the Science Foundation Ireland, has just been published in the leading international journal, *Plant Cell*.

Lead authors of the study are Dr Diarmuid O'Maoileidigh and Dr Samuel Wuest, who carried out the research in the Plant Developmental Genetics laboratory of the Smurfit Institute, which is headed by Associate Professor Frank Wellmer.

The team investigated the function of the gene AGAMOUS, which controls the formation of the reproductive organs of a flower – the stamens and carpels. Mutations in AGAMOUS lead to a complete loss of these organs and to the appearance of 'double flowers'. Double flowers, or flowers within flowers, can be found in many plant cultivars used in horticulture, such as roses or camellias, and thus are of considerable economical interest.

The work described by the Trinity researchers provided detailed insights into the activities of AGAMOUS and how it acts on other genes involved in [flower development](#). This is an exciting step forward for our understanding of how flowers form and in the future this information may be used to generate crops with higher yields or improved traits, according to Associate Professor Wellmer.

"Although the AGAMOUS gene was identified more than 20 years ago, our understanding of how it controls the formation of the [reproductive organs](#) of a plant has remained largely elusive. Through our work, this [knowledge gap](#) is beginning to close and we have now a much better view of the processes underlying flower development and reproduction. I believe our study is a good example of what basic research can deliver and why such research should be supported even without an

immediate economic impact."

More information: Maoileidigh, O. et al. (2013) Control of reproductive floral organ identity specification in Arabidopsis by the C function regulator AGAMOUS, *Plant Cell* 25, 2482-2503.

Provided by Trinity College Dublin

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