

# New grass hybrid could help reduce the likelihood of flooding

April 25 2013

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A collaboration of plant and soil scientists from across the UK has shown a grass hybrid species could help reduce the impact of flooding. The BBSRC-funded scientists, from Rothamsted Research, the James Hutton Institute, Institute of Biological, Environmental and Rural Sciences (IBERS) at Aberystwyth University, Lancaster University and the University of Nottingham, used a hybridised species of grass called perennial ryegrass (*Lolium perenne*) with a closely related species called meadow fescue (*Festuca pratensis*).

They hoped to integrate the rapid establishment and growth rate of the ryegrass with the large, well developed root systems and efficient water capture of the meadow fescue.

Over two years of [field experiments](#) in the south west the team demonstrated that the hybrid, named *Festulolium*, reduced [water runoff](#) from agricultural grassland by up to 51 per cent compared to a leading UK nationally-recommended perennial ryegrass *cultivar* and by 43 per cent compared to meadow fescue.

It is thought the reduced runoff is achieved because *Festulolium*'s intense initial root growth and subsequent rapid turn-over, especially at depth, allows more water to be retained within the soil.

The hybrid grass also provides high quality forage with resilience to [weather extremes](#), making the grass doubly useful to farmers.

Dr. Kit Macleod, catchment scientist at the James Hutton Institute and one of the authors of the paper, said: "Hybrid grasses of this type show potential for reducing the likelihood of flood generation, whilst providing pasture for food production under conditions of [changing climate](#).

"In areas with similar climate and soils, then there is potential for reducing the likelihood of flood generation based on increased soil water storage within a river's catchment."

Professor Douglas Kell, Chief Executive of BBSRC, said: "We usually think of improving [food crops](#) solely in terms of traits such as the yield and quality of the food itself, and apart from root crops such as potatoes and carrots these are easily visible, above-ground traits. However, there is increasing recognition that the health and utility of plants can be greatly enhanced by improving below-ground traits such as [root growth](#).

"This is a superb example of that reasoning, and a hugely important advance resulting from decades of fundamental BBSRC-supported work on the hybridisation of *Lolium* and *Festuca* (*Fescue*) species. I am sure that we shall see a continuing resurgence of interest in root biology, which findings such as this are sure to promote. The enormous savings that will be possible by mitigating flooding through planting grasses such as these dwarf any possible cost of producing them."

**More information:** [dx.doi.org/10.1038/srep01683](https://doi.org/10.1038/srep01683)

Provided by Biotechnology and Biological Sciences Research Council

Citation: New grass hybrid could help reduce the likelihood of flooding (2013, April 25)  
retrieved 23 May 2024 from <https://phys.org/news/2013-04-grass-hybrid-likelihood.html>

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