

Updating classifications to reflect monophyly

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Cenchrus advena (Wipff & Veldkamp) Morrone, one of the 1,179 grass species that have changed their name in the move towards a phylogenetic classification. The species was called *Pennisetum advena* Wipff & Veldkamp in traditional systems of grass classification. Credit: M.S.Vorontsova

The move from a "traditional" to a "phylogenetic" classification of grasses (Poaceae) has resulted in 10% of species having their scientific name changed.

Classification systems are constantly changing to keep up to date with increasing knowledge. We are currently in a period of faster change as the plant classification is realigned into monophyletic groups following

the widespread availability of [DNA sequence data](#). But how many species change their name as the classification is updated?

Previously it has not been possible to quantify this, but now new name database projects in the grasses (Poaceae) have enabled a direct comparison between a "traditional" [classification system](#) and a "phylogenetic" one. [GrassBase](#) contains a list of all Poaceae species as they were classified in 1986. GrassWorld is a copy of GrassBase updated to incorporate conclusions from all published phylogenetic reconstructions.

In a study published in *Taxon*, all species names accepted by GrassBase and GrassWorld were compared and species that were moved to a different genus due to phylogenetic classification realignment were counted. Out of 11,500 accepted [grass species](#) 1,179 have been moved to a different genus to follow monophyletic groups, a total of around 10%.

Of course the classification is still changing and some parts of the [grass family](#) are more thoroughly studied than others. A subset of species in the well known tribes Paniceae and Paspaleae was also analysed. Out of 2,070 species in the Paniceae and Paspaleae 362 moved to a different genus: 17%.

If other [plant families](#) are similar to the grasses then the transition from a traditional to a phylogenetic classification system is expected to lead to name changes in around 10-20% of the species.

More information: Vorontsova, M. S. & Simon, B.K. (2012). Updating classifications to reflect monophyly: 10 to 20 percent of species names change in Poaceae. *Taxon* 61: 735-746.

Provided by Royal Botanic Gardens, Kew

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