

Got Hybrids?

Researchers are consolidating information on grass hybrids. Your participation can be an important part of their success

By Lee Menconi-Steiger

What roles do grasses play in our lives? They play a major role in the development or preparation of: bread, rice, pasta, tortillas, porridge, haggis, oil, sugar, spices, beer, grain-fed meat, bamboo fences and tropical housing, rattan furnishings, straw hats; "fuel" for transportation and farm machinery powered by horses and oxen (and, by extension, manure to fertilize other plants or burn as fuel); soil binders, ornamental plants, and, of course, home lawns, sporting fields and recreation grounds.

Grasses, in other words, are central to human civilization, whether one is considering nutrition, ecology, aesthetics, athletics or simply dollars and cents.

Hybrids' genetic information

We know more about the 8,000-10,000 species of grasses than about any other family of plants. Grass hybrids are potentially a rich source of biological, genetic and genomic information, to be extracted for a wide range of purposes, and yet there is no comprehensive database of authenticated grass hybrids.

Mike Freeling and Toby Kellogg are changing that. Professors at University of California-Berkeley and the University of St. Louis, MO, respectively, they've created the Hybrid Grass Database; a free, searchable, online list of natural and bred grass hybrids.

Starting with Irving Knobloch's "A Checklist of Crosses in the Gramineae" from 1968 and his previously-unpublished update and corrections, Mike and Toby have added data gleaned by their researchers from published sources worldwide. Their ambition is

to list all known hybrids.

Taxonomists, gardeners, turf breeders and naturalists are all invited to contribute data. Mike says, "We're interested in stories that can be verified by samples, photos, notebooks, and/or maps. The wider the cross, the more extreme the phenotypic differences, the better!"

Contribute your hybrids and help build the database; your work will be included as a permanent part of the database, to inform and inspire others. Use the Hybrids List as a forum to let people know about your commercial hybrid, and add to the world's store of available knowledge; use the database as a research tool to discover what others have hybridized, or to come up with ideas to use in your own research.

The Grass Hybrids Database exists only to collect and disseminate information. The submission form requests the hybrid's name and parentage, information about fertility, origin and propagation, and the availability of the hybrid and parent plants. Contact information is included for commercially valuable hybrids.

Mike and Toby may add taxonomic verification or perform molecular fingerprinting to verify hybrids when material is donated for this purpose. Of course, not all this information is available for every plant.

Technical note: Hybrids are often important as plants, or as the starting point to introgress wild alleles (genes) into a cultivar. Perhaps more importantly, fertile hybrids permit genetic mapping of any allelic difference. Using genomic biology (maps and sequence databases), it will often be possible to locate this allele in the deduced ancestral grass genome that existed about 70 million years ago, and, thus, in any grass descendent.

In other words, wide hybrids enable one way to discover useful genes (alleles). If you want more specific information on hybrids as gene discovery tools, visit the website or inquire. Contribute data or search the database at <http://128.32.88.35/grassweb/>; email at grasshyb@nature.berkeley.edu, or use the address or fax number on the form.

The author is an administrator with the Department of Microbial Biology at the University of California - Berkeley.

The Hybrid Grass Database is a free, searchable, online list of natural and bred grass hybrids.

Add a Grass Hybrid to the Database

Please complete a separate form for each hybrid on which you report; include all the information you have; we really don't expect you to fill ALL the boxes! Information may become a listing in The Hybrids List public database.

SUBMITTED BY

Your Name: _____

E-mail address: _____

Website address:(URL) _____

Mailing address: _____

FAX: _____

Phone(s): _____

WHERE THE INFORMATION ABOUT THIS HYBRID CAME FROM

Publication/Authors: _____

Website: _____

Other: _____

ABOUT THE HYBRID

Female parent; Genus, Species, Variety _____

Male parent; Genus, Species, Variety _____

Hybrid Name _____

Fertile? (%) _____

Distribution/where described: _____

FURTHER INFORMATION IF AVAILABLE

Artificially hybridized? _____ Naturally occurring? _____

Date described/made: _____ Ploidy _____

How propagated?: _____

Is hybrid available?: _____ Where?: _____

Are parental plants available?: _____ Where? _____

Please list publications, if any

Please explain who described or made this hybrid, and how it was confirmed.

Please provide technical information if embryo rescue or similar technologies were used.

Please describe hybrid in contrast to parents.

Photos?

Clarify any proprietary considerations pertaining to obtaining seed or plants.

Expand on any or all topics with additional pages. Return this form to: L. Menconi, Administrator, Department of Plant and Microbial Biology, 111 Koshland Hall, Berkeley, California 94720-3102 or FAX: 510/642-4995
Or search and add to the database on line at <http://128.32.88.35/grassweb/>