

Supplementary Materials

Genetic diversity among wild and cultivated germplasm of the perennial pasture grass *Phalaris aquatica*, using DArTseq SNP marker analysis

Washington J. Gapare^{A,B}, Andrzej Kilian^C, Alan V. Stewart^D, Kevin F. Smith^E and Richard A. Culvenor^{A,F}

^ACSIRO Agriculture and Food, GPO Box 1700, Canberra, ACT 2601, Australia.

^BPresent address: Grains Research and Development Corporation, PO Box 5367, Kingston, ACT 2604, Australia.

^CDiversity Arrays Technology, Building 3, Level D, University of Canberra, Monana St., Bruce, ACT 2617, Australia.

^DPPG Wrightson Seeds Ltd, Lincoln, New Zealand.

^EFaculty of Veterinary and Agricultural Sciences, University of Melbourne, Private Bag 105, Hamilton, Vic. 3300, Australia.

^FCorresponding author. Email: Richard.Culvenor@csiro.au

Supplementary Table S1. Analysis of molecular variance (AMOVA) of the 9 populations of *Phalaris aquatica* identified by structure analysis of the 94 wild and cultivated accessions/cultivars.

Source of variation	Degrees of freedom	Sum of squares	Variance component	Percentage of total variance	<i>P</i> -value†
Among populations	8	0.1777	7.10	29.01	<0.001
Within populations	85	0.2529	32.31	70.99	<0.003
Total	93	0.4306	39.41	100	

† on the basis of 1023 permutations across the full data set and signifies the probability of obtaining by chance a higher or equal value of observed F_{ST} value (0.29).

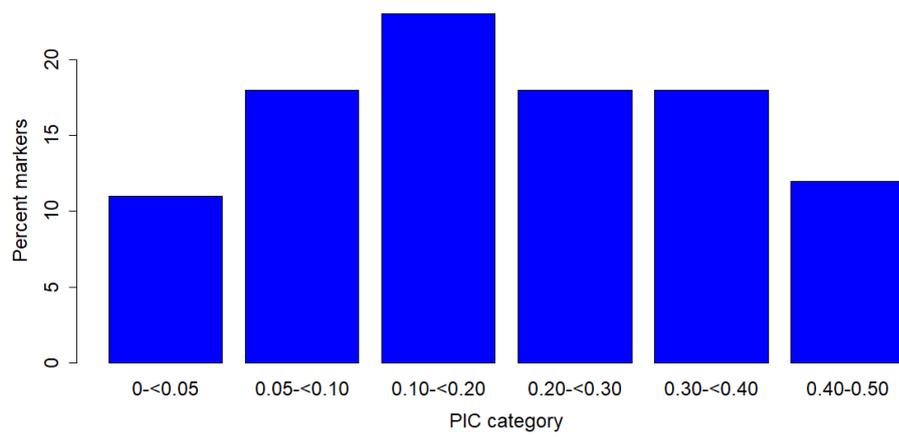


Fig. S1. Distribution of PIC values of SNP markers.

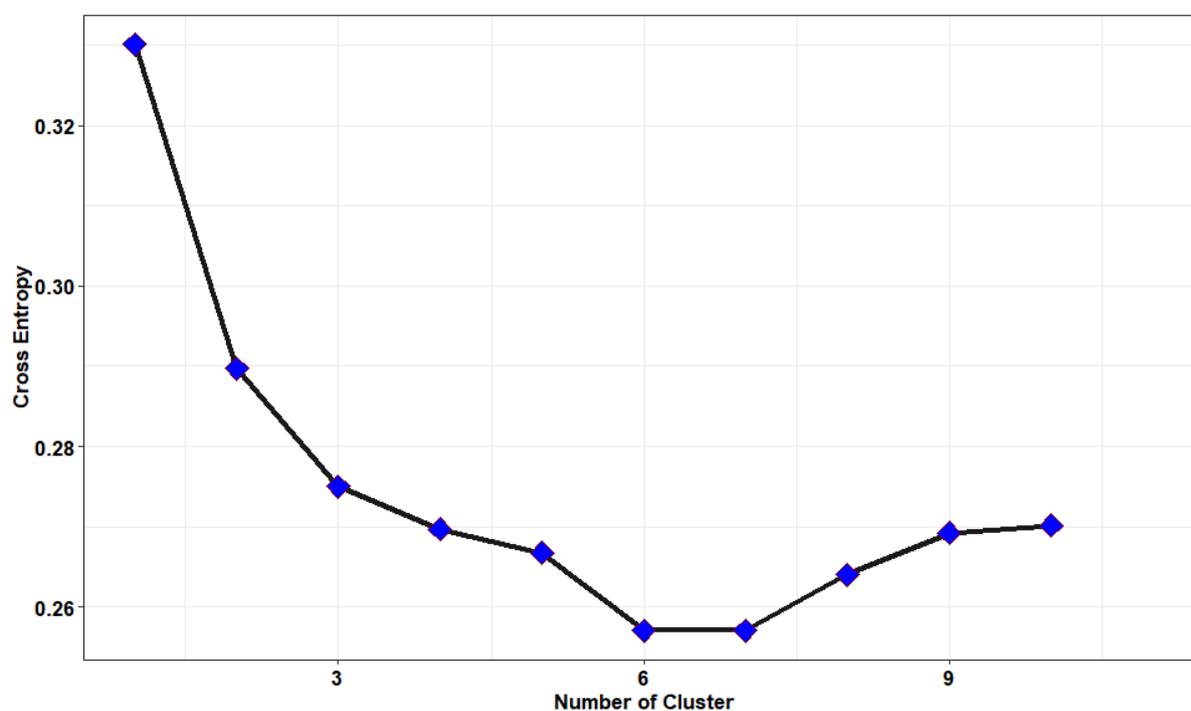


Fig. S2. Values of the cross-entropy criterion for sNMF runs for wild accessions. The cross-entropy criterion curve exhibited a monotonic decrease and plateaued at $K = 6$ possible populations. The minimum cross-entropy value (0.2570) denotes the possible number of clusters in a population.

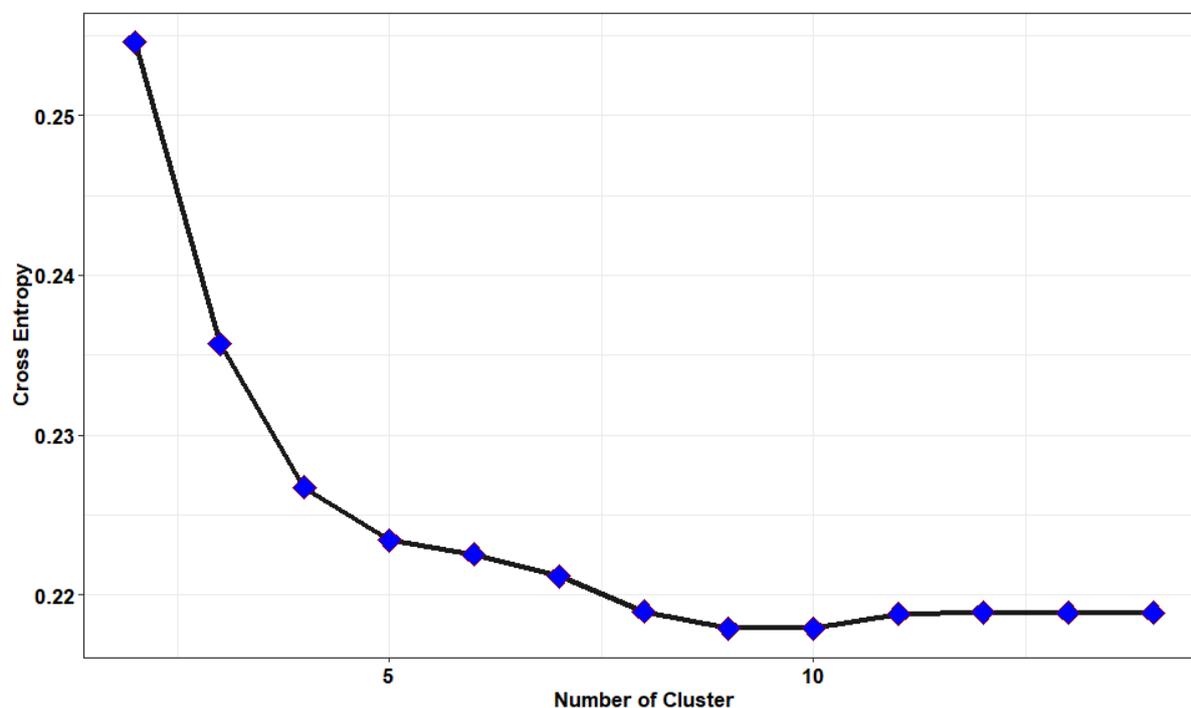


Fig. S3. Values of the cross-entropy criterion for sNMF runs for wild and cultivated accessions. The cross-entropy criterion curve exhibited a monotonic decrease and plateaued at $K = 9$ possible populations. The minimum cross-entropy value (0.2179) denotes the possible number of clusters in a population.

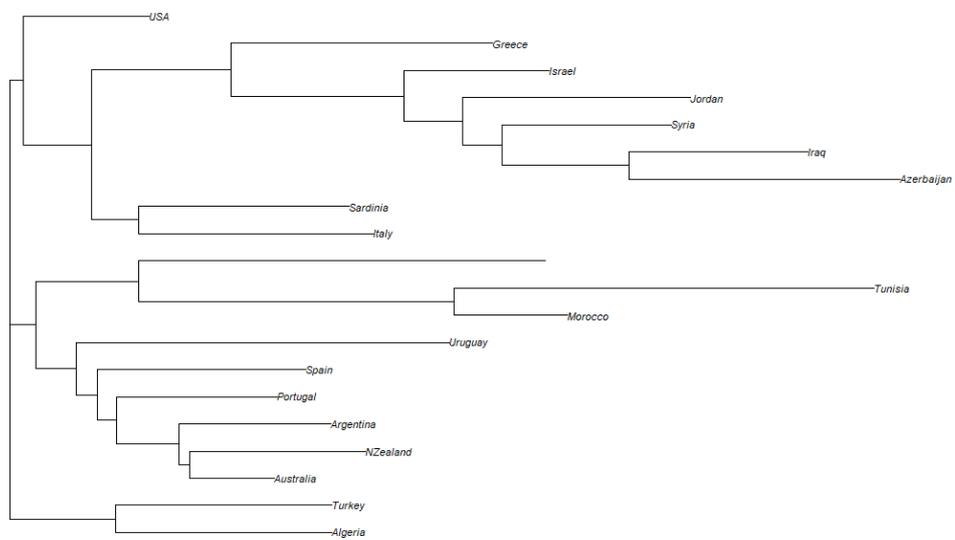


Fig. S4. Dendrogram of relations between countries based on the pairwise genetic distance matrix of F_{ST} values.