Key access and utilization descriptors for barley genetic resources

This list consists of an initial set of characterization and evaluation descriptors for barley utilization. This key set of strategic descriptors, together with passport data, will become the basis for the global accession-level information system being developed by the Bioversity-led project, Global Information on Germplasm Accessions (GIGA). It will facilitate access to and utilization of barley accessions held in genebanks and does not preclude the addition of further descriptors, should data subsequently become available.

Based on the comprehensive list of 'Descriptors for barley (*Hordeum vulgare* L.)' (IPGRI, 1994), the strategic set, listed below with the original descriptor states, was developed in consultation with a Core Advisory Group (see 'Contributors') led by Michael Mackay of Bioversity International.

Biotic and abiotic stresses included in the list were chosen because of their wide geographic occurrence and significant economic impact.

The numbers indicated in parentheses on the right-hand side are the corresponding descriptor numbers as published in 'Descriptors for Barley (*Hordeum vulgare* L.)' (IPGRI, 1994).

Growth class (seasonality) (7.1.1)

1 Winter
2 Facultative (intermediate)
3 Spring

Plant height [cm] (7.1.3)

At maturity, measured from the ground level to the top of spike excluding awns

Row number/lateral florets (7.2.3)

1 Two rowed, large or small sterile lateral florets
2 Two rowed, deficient
3 Irregular, variable lateral floret development
4 Six rowed, awnless or awnleted lateral florets
5 Six rowed, long awns on lateral florets
99 Other (specify in the **Notes** descriptor)

Lemma awn/hood (7.2.6)

1 Awnless
2 Awnleted
3 Awned
4 Sessile hoods
5 Elevated hoods

Lemma awn barbs (7.2.7)

3 Smooth (few barbs at tip)
5 Intermediate (small barbs on upper half)
7 Rough

Length of rachilla hairs (7.2.12)

1 Short
2 Long

Kernel covering (7.3.1)

Whether or not the lemma and palea adhere to the caryopsis

1 Naked grain
2 Semi-covered grain
3 Covered grain

Lemma colour (7.3.3)

1 Amber (= normal)
2 Tan/red
3 Purple
4 Black/grey
99 Other (specify in the **Notes** descriptor)

Aleurone colour (7.3.5)

(Although this trait is difficult to observe, it is used for market type classification in several countries)

1 White
2 Blue

Susceptibility to drought (9.3)

Susceptibility to Yellow rust (*Puccinia striiformis* f.sp. *hordei*) (10.2.1)

Susceptibility to Powdery mildew (*Erysiphe graminis* f.sp. *hordei*) (10.2.4)

Susceptibility to Scald (*Rynchosporium secalis*) (10.2.5)

Susceptibility to Net blotch (*Pyrenophora teres*) (10.2.7)

Susceptibility to Spot blotch (*Cochliobolus sativus*) (10.2.8)

Notes
Any additional information may be specified here, particularly that referring to the category 'Other' present in some of the descriptors above.

CONTRIBUTORS
Bioversity is grateful to all the scientists and researchers who contributed to the development of this strategic set of key access and utilization descriptors for barley genetic resources. The following Bioversity staff contributed to this exercise: Michael Mackay, who provided scientific direction, and Adriana Alercia, who provided technical expertise and guided the entire production process.

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