

GENETIC DIVERSITY AND CLINE OF VARIATION IN BARLEY LANDRACES FROM THE CENTRAL HIGHLANDS OF ETHIOPIA

TANTO HADADO T.*, RAU D.***, BITOCCHI E.*, PAPA R.*

*) Dipartimento di Scienze Ambientali e delle Produzioni Vegetali, Università Politecnica delle Marche, Via Brecce Bianche, 60131 Ancona (Italy)

**) Dipartimento di Scienze Agronomiche e Genetica Vegetale Agraria, Università degli Studi di Sassari, 07100 Sassari (Italy)

Hordeum vulgare, selection, cline of variation, autocorrelation, genetic landscape

Ethiopia is a secondary centre of diversity for barley (*Hordeum vulgare* L.), where barley is the third most important cereal crop. In several regions of Ethiopia, barley is often grown in two different planting seasons per year: during the long rainy season (*Meher*), and during the short rainy season (*Belg*). To determine for the first time the role of this ‘two-season-system’ on the structure of the genetic diversity of barley landraces, we performed an analysis of a hierarchical collection of barley (seasons, districts within seasons, altitude classes within districts) from North Shewa, in the central Highlands of Ethiopia. Overall, 106 landrace populations were analysed, using both morphological (8 traits, 3,170 genotypes) and molecular (7 SSR, 212 genotypes) markers. The divergence between the populations collected in the *Meher* and *Belg* seasons was very limited. The genetic variation was ascribed to differences between altitude classes rather than between seasons or among districts. The altitude largely overrides geographical distance as the main cause of divergence among individual genotypes. These results are discussed particularly in the context of the exploitation of these landraces for plant breeding and genetic analysis.