

SOLIBAM: BREEDING BARLEY, BEAN AND BROCCOLI FOR ORGANIC AND LOW INPUT MANAGEMENT SYSTEMS

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The SOLIBAM (*Strategies for Organic and Low-input Integrated Breeding and Management*) project, funded by the European Commission under the Seventh Framework Programme (GA 245058, coord. Véronique Chable, INRA, scientific responsible for UNIPG Valeria Negri) will develop specific and novel breeding approaches integrated with management practices to improve the sustainability, quality, performance and stability of crops and to develop varieties adapted to a wide range of organic and low-input management systems across several countries. A continuous release of new varieties of barley, bean and broccoli is foreseen among other project products. In Italy, barley (*Hordeum vulgare* L.), bean (*Phaseolus vulgaris* L.) and broccoli (*Brassica oleracea* L.) breeding has been carried out and the obtained lines/varieties are presently evaluated under two management systems (low input, LI, and organic agriculture, OA). In 2010, a barley composite cross originated population developed by UNIPG under zero nitrogen conditions was screened in Central Italy (Perugia) under OA and the best performing lines were selected. These have been evaluated under OA and LI in 2011 in comparison with other lines and cultivars. Seventeen lines of bean derived from crossing of an indeterminate growth habit landrace and a dwarf variety (coco nano) were tested under OA in Perugia (Central Italy) and LI in Grosseto (Tirrenic sea coast). Results obtained in the first year allowed to select two best performing lines in different management conditions which are being trialled under OA and LI in comparison with two control varieties. A phenotypic selection of a broccoli landrace was carried out and a 4 component (SYN_4C) and a 8 component (SYN_8C) synthetic populations were obtained. The two developed populations, the mother plant half sib progenies (HSMP) and two hybrid varieties were evaluated in 2011 under OA and LI. Obtained results show that the barley, bean and broccoli selected materials selected show good performances under OA and LI.