

THE FAGIO.LO PROJECT

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Bean (*Phaseolus* spp.) is one of the most cultivated legumes for direct human consumption, due to the protein content (about 20%), starch with a low glycemic index (about 38%), B vitamins, molecules with antioxidant power, minerals, lipids (about 3%, mainly made up of polyunsaturated fatty acids). However, some varieties have a non-negligible content of anti-nutritional factors (phytates, inhibitors of digestive enzymes and hemagglutinins) which are reduced by pre-cooking treatments (such as soaking in water) and cooking.

Beans are traditionally consumed as a source of protein instead of meat in countries in poorer rural and marginal areas. The bean has been for centuries one of the fundamental foods of the peasant world, including that of the Lombardy region (Northern Italy). With industrial development, the consumption of beans has undergone a contraction. The demand for legumes has varied due to the change in food styles, the smaller number of small-sized farms (those traditionally dedicated to these productions) and the overall decrease in land for crops. Nowadays, there has been a renewed interest in beans from consumers residing in northern Italy. It was mainly the local varieties (landraces) that attracted the attention of consumers.

In this work, 30 bean landraces grown in Lombardy were collected and studied for the conservation and promotion of plant biodiversity, to enhance bean cultivars so far little known, cultivated/preserved by a few

farmers and therefore at risk of extinction.

This study will contribute to the research, characterization, promotion and conservation of PGRFA (Plant Genetic Resources for Food and Agriculture). These landraces were characterized by SSR to assess the genetic structure and to assist in future breeding programs and different genotypes were evaluated and compared in open field under study using quality parameters for DUS examination (CPVO Technical Protocols).

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