**Poster Communication Abstract – 2.35**

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# CHARACTERIZATION OF TRADITIONAL POLENTA MAIZE VARIETIES FROM LOMBARDY REGION: AN OPPORTUNITY TO FACE CLIMATE CHANGE.

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*Maize traditional varieties, climate change, genetic characterization, morphological characterization, germplasm bank*

Agriculture represents an important activity in Lombardy region with maize (Zea mays L. subsp. mays) being the most widely grown plant in the area. Recent years have seen a sharp decline in maize production given the growing impact of climate change, with warmer and drier summers, resulting in economic difficulties for farmers. The research for plants able to cope with severe environmental conditions leads to increased interest in obsolete cultivars and landraces, that have been abandoned over the years but still cultivated in some rural areas and conserved in the germplasm banks. The local varieties are generally characterized by high genetic variability, often linked to the presence of important phytonutrients, as well as to resistance to biotic and abiotic stresses, absent in modern varieties. In fact genetic improvement programs, aimed at increasing production, tend to neglect secondary metabolites that are not essential for production but are valuable from the nutritional point of view and in low input cultivation (e.g. organic cultivation). Given the growing interest for local maize varieties, their reproduction, harvest and conservation (in situ and ex situ) can represent an excellent strategy to prevent their extinction and an opportunity for future use as breeding materials to face the difficulties related to climate change. Closely

linked to this issue is the Maisalpi (Recovered traditional Alpine Lombard corn) project whose aim is to identify local varieties of Lombard polenta corn that are still useful for improving production, especially in conditions of environmental stress.

Within this project, different types of Lombard corn for polenta were selected: corn typically grown in lowland areas and corn typical of mountainous areas, early, medium or late maturing corn, colourless and coloured corn. The accessions selected will be analysed from the morphological, nutritional and genetic point of view, allowing the unique identification, a fundamental step not only for a correct conservation (both on farm and ex situ, in germplasm bank) but also to enhance and promote the different local varieties as unique entities linked to the territory of origin.

We present data about the first steps of this project; the selection of the local varieties of Lombard polenta corn through bibliography research and selection in the database of the University of Pavia' Germplasm Bank, the cultivation to uniform and stabilize the peculiar characteristics of each accession and the preliminary genetic and morphological analysis.