

COLLECTING COMMON BEAN (*PHASEOLUS VULGARIS* L.) GERMPLASM IN BRAZIL - I

Edson H.N. Vieira, Jaime R. Fonseca and Heloisa T. da Silva

Embrapa Arroz e Feijão. Caixa Postal 179. 75375-000. Santo Antônio de Goiás, GO. Brazil

Introduction

Beans are an important source of protein in the diet of the Brazilian population and are farmed in an array of cropping systems, in areas ranging from less than one hectare to hundreds, under rainfed conditions or supplementary irrigation, providing three major harvests per year (Yokoyama et al., 2000.). To support these so diversified cropping systems, and to preserve genetic diversity, collecting, conservation and evaluation of germplasm have been practiced in the country for many years. Taking in consideration the long history of bean cultivation in the State of Santa Catarina, as well as the significance and representativeness of this region for dry beans, an expedition was set up to collect adapted common bean germplasm (Nadal, 1992).

Objectives

This expedition was organized to explore regional common bean types and to obtain a representative collection of landraces farmed in Southern Brazil. Emphasis was also given to the collection of some ethnic, botanical and economic information, and to determine the extent of genetic erosion in the region.

Methods

Target area

At the Embrapa Rice and Beans Germplasm Bank a review of information and literature on regions with traditional bean farms was performed (Fonseca & Vieira, 1986). The available documentation on previous expeditions in the last 25 years was extensively examined and the target collecting area chosen was in the Northwest region of the State of Santa Catarina in Southern Brazil.

Identification of sites

To increase the chances of success journeys, contacts were made with experimental stations in the area, which, in turn, contacted local extension offices in each county. The extension office informed the planting season and time of harvest to help the collecting team to organize the proper time schedule and farms to be visited. That procedure avoided waste of time and provided precise samplings in specific sites where farmers have been growing traditional cultivars for more than 20 years, with some properties actually growing them for more than 40 years.

Sampling strategy

The sampling procedure targeted seeds from the farmer's own stocks kept in cellars, conditioned in bags, boxes or any other container. Cereal brokers and small roadside markets were also visited. Data collected for each sample was recorded in a logbook at the moment of sampling, considering several parameters: the county; the local variety name; the period of time the variety was being utilized; its origin, if known; and any other information provided by the farmers such as market opportunity or the traditional dishes they made with that type of beans (Fonseca & Freire, 1998). That data is important for the "passport" of each sample.

Economic and social aspects

The original landscape of most of the region had already been deforested; almost all native pine (*Araucaria angustifolia*) and hardwood has already been used for lumber or fuel. Most of the highlands are now being used for pasture and agriculture is practiced in the valleys. The majority of the population is of European ancestry, who migrated to the region in the 19th century. They are mostly Germans, Italians and Poles, very fond of traditional values. Their conservative life styles have largely contributed to the preservation of traditional varieties for so many years. Genetic diversity is well preserved in the region, because farmers market the commercial enhanced varieties, but keep on cultivating the old ones for self consumption.

Results

Eighty two samples of *Phaseolus vulgaris* were collected in July 2000, in 13 municipalities. This total was composed of the following types: 37.8% of the samples were small black tegument beans; 25.6% large seed types (white, colored and mottled); 12.1% small red; 3.6% yellow; 2.4% carioca (small, buff color seeds with brown stripes); 1.2% roxinho (small purple); 6% small brown; and 10.9% mixed (Table 1). All samples were introduced in the Rice and Beans Research Center Germplasm Bank for preservation and for characterization and evaluation by a multidisciplinary team. All germplasm may be shared with individuals and organizations from Brazil and abroad signing the Exchange Material Agreement (Acordo de Transferência de Material - ATM).

Table 1. Common bean germplasm collected in the State of Santa Catarina

Bean type	No. of samples
Small black	31
Small red	10
Large seed types (various colors)	21
Small brown	05
Carioca (buff color with brown stripes)	02
Small yellow	03
Roxinho (small, purple)	01
Other types	09
Total	82

References

1. Fonseca, J.R. and R.F.Vieira. 1986. Revista Ceres 33:449-445.
2. Fonseca, J.R. and M.S. Freire. 1998. (Embrapa-CNPAP. Documentos 62). 3p.
3. Nadal, R. In: Flesch, R.D. 1992. A cultura do feijão em Santa Catarina. EPAGRI, Florianópolis. pp.25-35.
4. Yokoyama, L.P., C.T. Wetzell, E.H.N. Vieira and G.V. Pereira. 2000. In: Vieira, E.H.N. and C.A. Rava. Semente de feijão: produção e tecnologia. Embrapa Arroz e Feijão, Goiânia. pp.249-270.