

SOME NUTRITIVE AND CULINARY CHARACTERISTICS OF THE GANXET COMMON BEAN (*PHASEOLUS VULGARIS* L.)

F.CASAÑAS¹, L.BOSCH¹, E.SANCHEZ¹, R.ROMERO DEL CASTILLO¹, J.VALERO¹, M.BALDI², J.MESTRES³, F.NUEZ⁴.

1. Escola Superior d'Agricultura de Barcelona. Urgell 187. 08036 Barcelona; 2. DARP Delegació Vallès Occidental. Cuba, 9-11. Sabadell; 3. CEINAL. Longitudinal 9, bl.21. Mercabarna. 08040 Barcelona; 4. Escuela Técnica Superior de Ingenieros Agrónomos de Valencia. Camino de Vera 14. 46022 Valencia.

INTRODUCTION

The Ganxet common bean is a traditional variety cultivated in the NE of the Iberian Peninsula and very appreciated at local tables. In the frame of a wide study devoted to evaluate the present status of the variety (Casañas et al., 1997), nutritive and culinary traits were recorded on 12 accessions representing all the variability range of the variety. Although accessions numbers 12 and 21 were out of the limits of the variety according to hook degree (Table 1) they were included in the experiment to be used as checks since their hook degree was similar to that of the "White Kidney" type. Field trials from which the samples to analyse were taken included 2 locations and 4 blocks per location. Here are presented the results and their relationship with seed hook degree, which is considered to be the most typical morphological trait of the variety.

RESULTS AND DISCUSSION

Protein and ash percentages were the only chemical traits showing significant differences among accessions (Table 1). Location effect was significant in the traits protein, ash and dietary fiber percentages. The accessions with the highest percentage of protein were also the most hooked, that is to say, the most typical forms of the Ganxet variety (correlation between both traits equals to 0.68, significant $p \leq 0.05$). This high level of protein percentage in the Ganxet variety had been already found by MAPA (1984).

Table 1.-Mean values of the chemical and culinary traits studied, corresponding to the 12 chosen accessions. Hook degree is added as a reference. (lsd: least significant difference $p \leq 0.05$).

| accession n. | protein ¹ | fat ¹ | diet.fib. ¹ | sacarose ¹ | maltose ¹ | ash ¹ | episperm ² | wat.abs. ³ | hook ⁴ |
|--------------|----------------------|------------------|------------------------|-----------------------|----------------------|------------------|-----------------------|-----------------------|-------------------|
| 40 | 27.63 | 1.48 | 27.60 | 0.80 | 0.25 | 3.79 | 8.90 | 47.76 | 2.8 |
| 32 | 26.05 | 1.77 | 29.40 | 0.75 | 0.25 | 3.87 | 8.60 | 48.12 | 2.5 |
| 18 | 26.02 | 1.54 | 25.30 | 0.85 | 0.30 | 3.83 | 8.39 | 46.23 | 2.1 |
| 27 | 25.94 | 1.60 | 27.60 | 0.75 | 0.35 | 3.85 | 8.50 | 46.87 | 2.3 |
| 21 | 25.34 | 2.05 | 27.40 | 0.75 | 0.25 | 3.93 | 7.75 | 44.07 | 1.0 |
| 10 | 25.97 | 2.10 | 26.40 | 0.85 | 0.25 | 4.00 | 7.45 | 47.57 | 1.5 |
| 02 | 25.76 | 2.03 | 28.40 | 0.75 | 0.25 | 3.75 | 7.60 | 45.70 | 1.5 |
| 16 | 25.51 | 1.79 | 28.40 | 0.75 | 0.25 | 3.88 | 8.39 | 47.75 | 1.1 |
| 37 | 25.10 | 2.05 | 26.30 | 0.65 | 0.45 | 4.03 | 8.27 | 42.73 | 1.6 |
| 23 | 24.48 | 1.99 | 27.90 | 0.65 | 0.40 | 3.88 | 8.17 | 45.98 | 1.7 |
| 12 | 23.27 | 2.03 | 26.70 | 0.75 | 0.30 | 3.84 | 8.22 | 44.75 | 0.9 |
| 53 | 23.26 | 1.82 | 27.25 | 0.85 | 0.35 | 4.03 | 8.33 | 45.77 | 1.5 |
| lsd | 1.07 | ns | ns | ns | ns | 1.25 | 0.30 | 2.57 | 0.3 |

1 In percentage.

2 In percentage respect to the total weight of the seed.

3 Water absorption during a 12h periode expressed in percentage of the initial weight of the seeds.

4 Hook degree according to a scale ranging from 0 to 3. (0 no hook, 3 very strong hook. In this scale the well known White Kidney type has in this scale a value of 1).

High hook degree was also associated with a low level of fats as found before (MAPA, 1984). In comparison with the average values given for beans by FAO/HEW (1968) and Food Composition and Nutritional Tables (1989–1990), the Ganxet variety, specially in its most typical forms, is characterised by a high proportion of protein and a low proportion of carbohydrates.

Both, water absorption and percentage of episperm showed significant differences among accessions (Table 1). Neither of both traits showed significant differences between locations. Hook degree was positively correlated with episperm proportion ($r=0.63$, significant $p \leq 0.05$). Thus, the most hooked forms of the Ganxet bean seem to contain more protein, less fats and more episperm proportion.

Sensorial analysis of the culinary properties also revealed a marked and repeated preference of the consumers to the most hooked forms. Although high protein proportion might account for the culinary success of the variety, the presence of additional substances of organoleptical importance cannot be discarded.

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