Vicia faba in Spain

Moreno M.T., Martínez A.

in

Cubero J.I. (ed.), Saxena M.C. (ed.).
Present status and future prospects of faba bean production and improvement in the Mediterranean countries

Zaragoza : CIHEAM
Options Méditerranéennes : Série A. Séminaires Méditerranéens; n. 10

1991
pages 165-167

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SUMMARY - The cultivation of faba bean in Spain has decreased in all its regions, with the exception of Andalusia and Extremadura. This decline clearly contrasts with the increase in cultivars selected by public organizations and private companies. Data from official experiments carried out in Andalusia show that these cultivars have an average yield of 3.5 t/ha (range 1.6 -5.6 t/ha; current national average is 1.1 t/ha), indicating that the economically profitable limit of 4 t/ha has almost been reached. The reason for this decline is due more to flaws in the fields of commercialization and extension than to traditional yield retardants (broomrape, mite and apids) of the crop.

*RESUME - "*Vicia faba *en Espagne". La culture de la fève a diminué dans toutes les régions de l'Espagne, à l'exception de l'Andalousie et de l'Estrémadure. Cette diminution contraste nettement avec l'augmentation de cultivars améliorés par les organismes publics et les compagnies privées. Les données des expériences officielles menées en Andalousie sur ces cultivars montrent un rendement moyen de 3,5 t/ha (intervalle 1,6 - 5,6 t/ha, la moyenne nationale actuelle étant de 1,1 t/ha), ce qui indique que la limite économiquement rentable de 4 t/ha est presque atteinte. Cette diminution de la culture est plutôt due à des problèmes de commercialisation et vulgarisation qu'à des ennemis traditionnnels de la fève (l'*Orobanche, *les mites et les pucerons).*

Introduction

The current situation of faba bean in Spain is complex. On the one hand, the area and production of this crop is quickly decreasing and on the other, new cultivars, selected by public and private organizations, together with improved cropping technology, produce higher yield than traditional ones.

Fig. 1 shows the evolution in area and production. National average yield, as will be discussed later on, is low and has been practically constant. Fig. 2 gives the total national averages according to regions. In terms of production area, the Andalusian region continues to be the one where the crop still has an adequate size. The total area in this region could increase if the commercialization and distribution problems of the new cultivars were solved, and if it were possible to introduce in a short period of time a variety resistant to broomrape. In yield, Navarra stands out among the different regions; it is necessary to point out that the small area currently sown is farmed by skilled farmers from climatically suitable locations. Albeit, with the exception of Andalucia and Extremadura, faba bean seems to be a relic crop in the other regions. Table 1 presents the cultivars and its breeders registered in Spain. It should be mentioned, that with the exception of a few of the cultivars indicated, all were registered in the last ten years. This apparent interest by commercial houses contrasts with the aforementioned decline in the cultivation of this crop.

Cropping techniques have also changed. Table 2 summarizes the characteristics currently employed by good farmers. The use of herbicides, including glyphosate against broomrape, is common practice. Apids and mite, together with broomrape, which are the only serious problems faced by the crop, are also controlled by insecticides. Sowing and harvest are mechanized, and yield (from 2 to 2.3 t/ha) double the national average (1.1 t/ha). Despite the better control of the crop, the varieties preferred continue to be local landraces, although the supply of new and more productive cultivars is widespread. A possible reason for this may be that the distri-

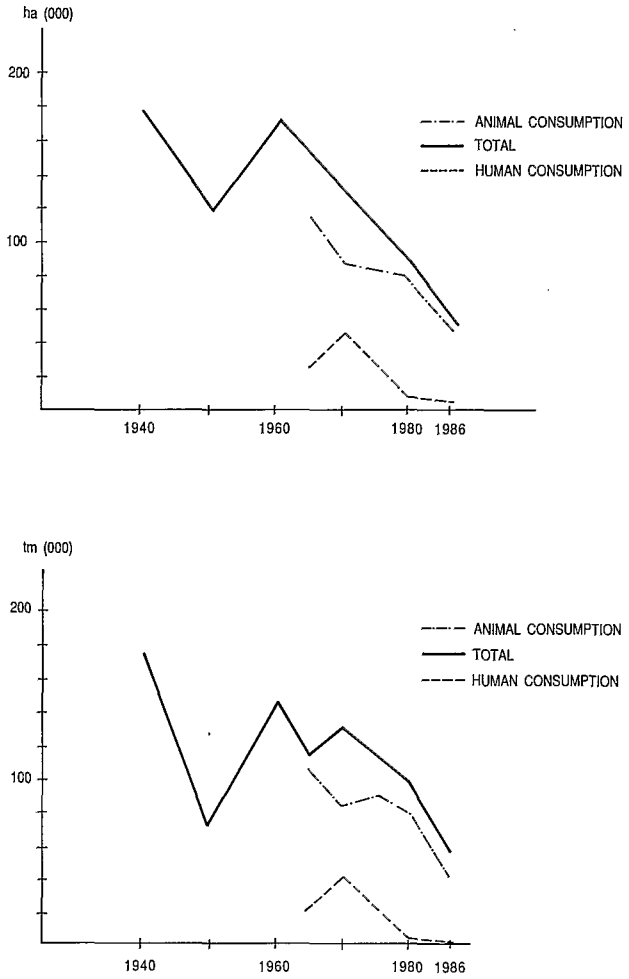

Fig. 1. Cultivated area (000 ha) and total production (000 t) between 1940-1986.

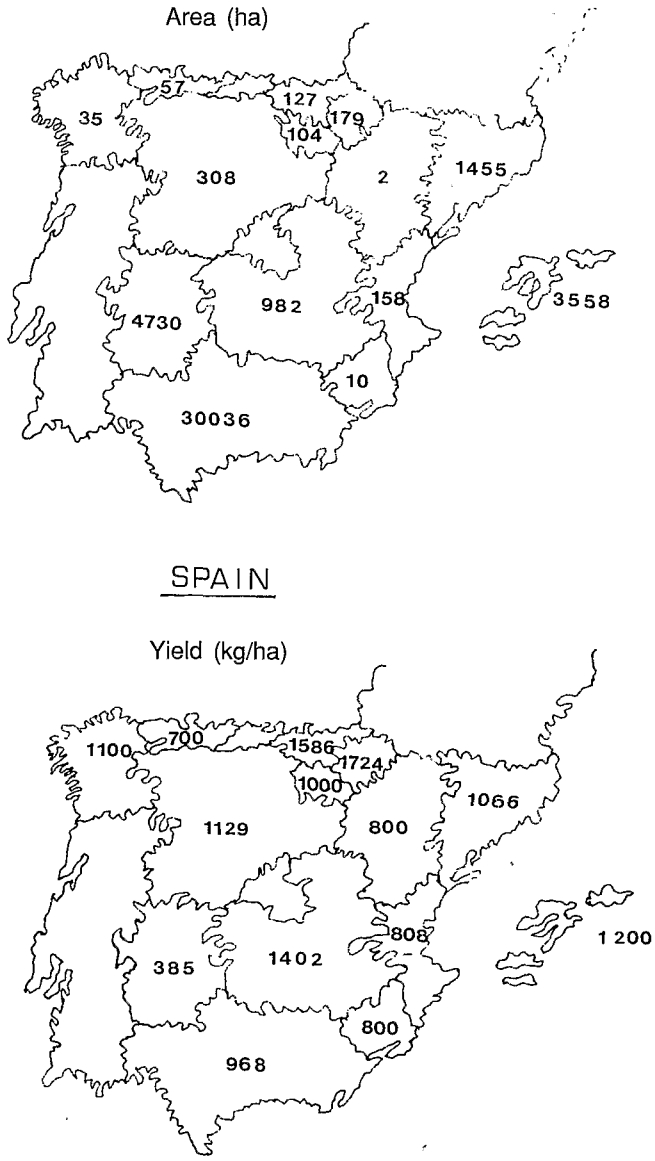

Fig. 2. Distribution of the faba bean cultivated area (ha) and yields (kg/ha) under rainfed conditions in Spain in 1986. The national total area was 42011 ha and average yield 919 kg/ha.

bution channels are not appropiate. Another reason may be that farmers continue to multiply the selected seed they buy, with the consequent risk of varietal degeneration as it is a partially cross-pollinated species.

In order to test new cultivars, the Department of Agriculture of the Andalusian Autonomous Government has created the Andalusian Network of Agricultural Research (RAEA) for several crops, including faba bean. The total number of cultivars tested was 17 in ten locations for three years, with an *average* yield of 3,530 kg/ha (maximum and minimum yield was 5,562 and 1,603 kg/ ha, respectively).

It is obvious that the potential of this crop has yet to be realised. Despite the fact that the results obtained by the research institutes with respect to production are far from those obtained in the field by farmers, the assays conducted in the RAEA are sufficiently significant to presuppose the economically profitable limit of 4 t/ha in rainfed areas feasible.

If the crop overcomes the crisis it seems to be in, considering the policy of the Common Market (the need to reduce the cereal area and increase the area of the legume fallow-lands ('barbechos marrones'), its area,

Table 1. Registered cultivars.

Cultivar	Breeder
Alameda	CIDA/ETSIA (Córdoba)
Palacio	CIDA/ETSIA (Córdoba)
Brocal	CIDA/ETSIA (Córdoba)
Pegolete	CIDA/ETSIA (Córdoba)
Amcor	CIDA/ETSIA (Córdoba)
Areces	CIDA/ETSIA (Córdoba)
Alborea	Semillas Pacífico
HA - 200	Semillas Pacíffico
Esacor	Eurosemillas
Prothabon-101	Semillas Batlle
Prothabat-69	Semillas Batlle
Z - 101	Semillas Zulueta
Dosel	CECOSA
Corsario	CECOSA
Arbo	Semillas Fitó
Trial	Semillas Fitó
Rumbo (I-836)	Semillas Fitó

yield and consequently, its production could increase in the upcoming years. However, it seems obvious that faba bean will most likely be sown in the Andalusian countryside, thus being limited to areas with mild winters. Low temperatures continue to be a limiting factor of this crop. It is in these Andalusian areas where the highest yield, especially in associated cultivation with cereals and sunflower, can be expected.

It is necessary to stress the technical aspects. There are no unsolvable problems with respect to this crop; the foreseeable appearance of broomrape resistant varieties together with the use of adequate herbicides can reduce the incidence of what has been up to now its major yield retardant in the South of Spain.

Table 2. Crop systems usually found in South Spain.

Previous crop	Cereal
Sowing	Broadcasting
	Sowing machine
Sowing dates	1st Nov. - 10th Dec.
Sowing rates	130 to 230 kg/ha
Field preparation	Cultivator
Cultivars	Usually landraces
Treatements	
Usual Herbicides	Terbutrine Linuron + Trifluraline Aladoro Linuron-50 Trifluraline
Broomrape	Glyphosate
Aphids	Dimetoato Tiometon
Bruchids	Metil-Parathion
Harvesting	Combine
Yield	2 to 2.3 t/ha

The commercialization of these varieties, widespread technical know-how already used by many farmers, and an incentive by fodder companies could change this decline in the crop. At heart, the divorce between this decline and the increased number of registered cultivars seems to reflect a totally inadequate extension policy.