



**Food
Legume
Improvement
and
Development**

Proceedings
of a
workshop
held at The
University
of Aleppo,
Syria,
2-7 May
1978

Geoffrey C.
Hawtin
and
George J.
Chancellor,
Editors

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Food Legumes in Syria

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Food legumes are considered to be important in the nutrition of both humans and livestock in most countries of the Near East and North Africa by virtue of their high content of both protein and carbohydrate. In addition, food legumes are important sources of minerals, such as iron, copper, and phosphorus, and vitamins. These crops are relatively inexpensive sources of dietary nutrients and have hence been named "the poor man's meat," which reflects their dominant position in the diets of a large part of the population of the country, especially the rural poor. Lentils are used in soups, salads, and various combinations with crushed rice and wheat, or vegetables and lemon juice, and chick-peas form a variety of foods, from homas (mashed with sesame oil and lemon) and falafel (mashed with peppers and fried) to sweets when covered with sugar.

Legume crops are also important for the benefits they provide both to soil fertility and structure, and therefore figure significantly in rotations throughout Syria. Furthermore legume grains provide the country with important export revenue.

Production and Marketing

Legumes are a very important crop in the agricultural economy of Syria and the annual surplus of supply over domestic consumption is exported to neighbouring countries (see Table 1).

Broad bean production in Syria is predominantly under irrigated conditions, which is reflected in the higher and more stable yields of this crop. In contrast to this, lentils and chick-peas are produced almost exclusively under rainfed conditions and their yields are consequently low and variable (Table 1).

Current Production Practices

In general, the planting of food legumes in Syria is considered to be semimechanized; the land is ploughed, usually by tractor, several times prior to planting, and fertilizer is applied at the rate of 250–450 kg of single superphosphate per hectare on irrigated land and 125–225 kg/ha on rainfed land. Fertilization is normally by hand broadcasting and usually takes place immediately before planting. Legume seeds are also generally sown by hand, lentils and chick-peas being broadcast into shallow furrows at the rates of 80–100 kg/ha and 80–150 kg/ha, respectively, and broad beans normally row planted at about 160–200 kg/ha. After sowing, the seed is covered by a cultivator to a depth of about 10 cm.

One or two manual cultivations are common during the season to control weeds and moisture infiltration.

Almost all the legume crops are hand harvested, left to dry in the field, and then transported to a hard area of ground where they are threshed, using an animal-drawn thresher, and winnowed. Seed losses may be considerable as a result of this procedure.

Research Activities

All investigations into legume improvement and production are the responsibility of

TABLE 1. Area (ha), production and exports (metric tonnes), and average yield (kg/ha) of grain legumes in Syria, 1972-76.

Year	Lentils						Broad beans						Chick-peas					
	Area						Area						Area					
	I ^a	R ^a		Prod.	Exp.	Yield	I	R		Prod.	Exp.	Yield	I	R		Prod.	Exp.	Yield
1972	2151	113949		96200	29555	835	3676	5659		12994	735	1559	191	44108		36422	1299	822
1973	1467	90614		23711	28530	258	2573	4169		7117	2153	1056	354	68130		27841	5281	407
1974	1722	83689		83369	14954	976	2781	4027		7251	1050	1509	427	90282		60265	11651	664
1975	2641	95203		66624	10097	681	3966	1859		9336	1203	1603	581	54608		26698	8463	484
1976	6061	140418		136227	21756	930	4833	3372		13690	-	1669	518	67035		50753	2591	751

^a I = irrigated conditions; R = rainfed conditions.

the Directorate for Scientific and Agricultural Research, which carries out its studies at centres in 11 of the 16 governates into which the country is divided.

The main emphasis of food legume research in Syria is on improving legume varieties through the testing of introductions and local cultivars, segregating generations of crosses and promising selections throughout the country on the basis of yield, disease resistance, and adaptation to the various production regions.

To date, the research program has isolated 18 local varieties of broad beans and seven of lentils that have been subjected to comparative tests to determine their yielding ability and adaptation. In addition to this work, the research efforts on chick-peas have resulted in the introduction of three improved varieties, namely Nobokho, Koliakan, and Registered 466.

Critical Constraints to Production

Perhaps the most serious problem facing legume producers in Syria is the very costly reliance on hand labour for most production operations, especially at harvest time when labour is both scarce and expensive. This, coupled with the unavailability of sufficient improved and adapted varieties exhibiting tolerance to adverse climatic conditions, disease and pest resistance, and good seed qualities, is making legume crops increasingly less economic to produce and resulting in producers favouring the more economic and proven cereal production enterprises. In addition, it has been noted that workers continually involved in legume production may develop bad allergic reactions.

Priorities for Production Improvement

Recognizing these major production problems, the research efforts of the Directorate are being focused on the identification of high-yielding disease-resistant varieties that have a good adaptation to the production conditions of the different parts of the country. To ensure that improved legume varieties reach the producers, who must use them if improvements in overall production are to result, it will be essential to considerably strengthen the capabilities of the seed multiplication and distribution network. Furthermore, the urgent problems of insufficient and inadequate production equipment and outmoded production practices must be solved to enable legumes to compete as an economic crop in the agriculture of the country.