



**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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*Editors:* Geoffrey C. Hawtin and George J. Chancellor

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## Food Legume Production and Improvement in Lebanon

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Lebanon, with a total land area of only 10 500 km<sup>2</sup>, is the smallest country in the eastern Mediterranean region. It is characterized by an extreme variability in environmental conditions. The terrain changes, as one moves inland, from flat coastal plains, through mountain ranges, to the high altitude Beka'a Valley; the average annual rainfall varies from 250 mm in the inland areas to 1400 mm in the mountains, which may be under snow for 3–4 months of the year; and temperatures range from –8 °C in the winter to 36 °C in the summer months.

Due to the reasonably high summer temperatures and long growing period, coupled with the availability of irrigation water in the drier regions, the role of food legume crops in the agricultural sector of the economy is relatively minor in comparison with other more intensive and high-return fruit and vegetable crops. The average annual production of legume crops in Lebanon between 1963 and 1973 is shown in Table 1.

The rather low yields of legume crops throughout the country reflect the lack of importance attached to these crops by the farming community, and possibly also the lesser overall importance of agriculture in the national economy. Grain legumes are normally grown in a 3-year rotation with cereals and summer vegetables and are almost invariably produced using traditional means. Lentils, chick-peas, and broad beans are usually broadcast, often into shallow furrows that are then covered with a cultivator and appear almost as row-planted crops. Lentils are sown in November and December at a rate of about 200 kg/ha, whereas chick-peas and broad beans are both sown at 150 kg/ha, the former as a spring crop in March and the latter as a winter crop in November. Planting dates vary somewhat with location, and in general are earlier in the lowland coastal plains than in the higher elevations of the Beka'a. Fertilizers are seldom applied to the crop. Although hand harvesting is still practiced throughout the country, most threshing involves the use of cereal threshers.

The lack of mechanization for planting and harvesting is a major production constraint, especially in view of the increasing cost and scarcity of hand labour at these times. Diseases, such as *Ascochyta* blight, *Alternaria* spot, rust (*Uromyces* spp.), and chocolate spot (*Botrytis cinerea*), frequently become severe, causing considerable crop losses. In addition, lentils are infested with weevils, chick-peas with caterpillars, and broad beans are very prone to aphid damage. The lack of improved varieties with resistance

TABLE 1. Area (ha), production (metric tonnes), and yield (t/ha) of legume crops in Lebanon, 1963–73.

Crop	Area	Prod.	Yield
Dry beans	908	861	0.9
Broad beans	572	667	1.2
Lentils	3067	1232	0.4
Chick-peas	2769	1866	0.7
Dry peas	161	142	0.9

or tolerance to these diseases and pests, and the poor general standard of agronomic practices used for legume cultivation in Lebanon, coupled with the problems resulting from its labour intensiveness are making legume production increasingly less economic, especially when compared with alternative crops such as cereals, fruits, and vegetables, which give more stable yields and higher returns.

Both the Agricultural Research Institute and the Faculty of Agriculture at the American University of Beirut are actively involved in agricultural research, which includes work on the legume crops. Studies on nutritional quality, agronomy, nitrogen fixation, and breeding and selection are carried out by these institutes and results have been published and used both locally and internationally. In recent years research work involving food legume crops has been given a considerable boost by assistance provided by international organizations such as ALAD (now ICARDA), FAO, and IDRC. The food legume component of the ALAD regional project initiated in Lebanon in the early 1970s has stimulated an increased expansion of research activities, and its continuation and elaboration in the recently formed ICARDA is seen as a great advantage for future work in this field. Unfortunately, the recent and continuing civil disturbances throughout the country are at present making the planning and implementation of research work very difficult.