



**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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Status of Food Legume Production in Afghanistan

N. Wassimi

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Afghanistan is a mountainous country with a dry climate. Rainfall ranges from 100 to 400 mm annually, with the exception of some high altitudes, where it may reach 1200 mm. The climate ranges from hot subtropical desert in the south, through semi-arid and continental Mediterranean types in the central areas, to continental desert in the extreme north of the country. Figure 1 shows the provincial divisions of the country.

Afghanistan has been classified into four major ecological zones on the basis of physiography, climate, soils, and present and potential land use. These are as follows:

- (1) the Mazari-Sharif zone, an area of 30 000 km² in the north of the country with a semi-arid continental Mediterranean-type climate and an annual rainfall of 200 mm concentrated in the winter and spring; the elevation varies between 200 and 500 m above sea level and the soils are calciferous, loamy, and deep with a reasonable level of organic matter; the predominant crops are wheat, cotton, rice, sugarbeet, and maize;
- (2) the Central Mountain zone, which includes all the mountainous area with elevations of above 2000 m; the terrain is mainly hilly and steeply sloping, interspersed with mountain valleys, and the climate is semi-arid Mediterranean



Fig. 1. Provincial divisions of Afghanistan.

with a mean annual precipitation of 250–400 mm occurring predominantly in the winter months; the soils are very shallow on the upper slopes, loamy or clayey with gravel and stones on the lower slopes, and deep and loamy in the valley bottoms; wheat, melons, and deciduous fruits are grown under irrigation;

- (3) the Farah-Kandahar zone, covering the whole of the Herat and Chakhansur provinces and the northwestern part of Helmand province in the southwest of the country; the elevation ranges from 200 to 2000 m and the zone can further be subdivided on the basis of this range to include (a) the foothills, with elevations of between 1000 and 2000 m. The mean annual precipitation varies between 100 and 200 mm and the soils are loamy or clayey, moderately to strongly calcereous, with a marked zone of lime accumulation. When sufficient water is available, wheat, maize, melons, pomegranates, grapes, and some alfalfa are grown; (b) the nonsaline plateau, 500–1000 m above sea level and with a gently rolling hilly relief. The climate is subtropical and arid, and the soils mainly calcereous, silty loams, or silty clays, again with a strong zone of lime accumulation. The main crops are wheat, millets, and melons grown under irrigation; (c) the Playa, which is a nearly level concave area in which the soils are strongly saline and where, as a consequence, the vegetation consists almost exclusively of bushes that thrive under salt conditions.
- (4) the Registan Zone, in the southeast, which is a sandy desert with an arid climate where annual rainfall is only 100–150 mm; the land is used for little else apart from rangeland grazing of livestock.

Of a total land area of 64.75 million ha, only 7.95 million (12.28%) is potentially arable. Much of this remains fallow for long periods due to insufficient moisture and only the 2.44 million ha that are under irrigation are cropped regularly. Crop production in Afghanistan is dominated by the cereals (wheat, maize, rice, and barley) that occupy 44% of the arable area. Other important crops include cotton, pulses, fruits, and vegetables (see Table 1).

It has been reported that chick-peas (*Cicer arietinum*), lentils (*Lens culinaris*), broad beans (*Vicia faba*), mungbean (*Vigna radiata*), dry bean (*Phaseolus vulgaris*), pea (*Pisum sativum*), and chickling vetch (*Lathyrus sativus*) are the main food legume species cultivated in Afghanistan, but there are unfortunately no statistics available on the area, yield, and production of these crops.

Very little research has been carried out on grain legume crops in Afghanistan. However, various germ-plasm collection expeditions have yielded some information about the relative importance of the legume crops within the country:

Chick-pea (*Cicer arietinum*) is the most important pulse in Afghanistan and is grown under both irrigated and rainfed conditions in the Badakhshan, Balkh, Takhar, Herat, Kunduz, and Kandahar districts.

Peas (*Pisum sativum*) are grown over a very wide range of conditions in Afghanistan and may be cultivated up to altitudes of over 3000 m. Twenty botanical varieties, all small seeded and green in colour, have been reported.

Lentils (*Lens culinaris*) are the second-most important cultivated grain legume in the

TABLE 1. Area ('000 ha), yield (kg/ha), and total production ('000 metric tonnes) of major crops in Afghanistan as reported in FAO production year book 1976.

Crop	Acreage	Yield	Prod.
Wheat	2400	1229	2950
Maize	490	1612	790
Barley	390	1026	400
Rice (paddy)	210	2143	450
Cotton	150	1067	160
Pulses	35	1624	57
Sugar beets	9	12941	116
Sugarcane	2	37859	55

country. They are grown predominantly at intermediate altitudes, between 500 and 2400 m, and mainly in eastern Afghanistan.

Broad beans (*Vicia faba*) are cultivated mainly in the upland areas and are the principal food of the mountain population. In the Bamyān district, for instance, they are second only to wheat in importance. Broad beans may be grown in a mixture with barley, peas, and *Lathyrus*, and are characteristically small seeded and dark in colour.

Mungbeans (*Vigna radiata*) are grown under irrigated conditions in Badakhshan, Badghis, Baghlan, Balkh, Kunduz, Kandahar, and Nangrahar. In the latter province they are grown in a mixture with maize and used as fodder for oxen.

Of the other grain legumes grown in Afghanistan, cowpeas and *Phaseolus* beans are primarily grown under irrigated conditions and chickling vetch under rainfed conditions in the Balk, Kabul, Herat, Kunduz, Hilmand, and Nangrahar provinces.

Peas, *Phaseolus* beans, and broad beans are consumed as both green and dry seed, whereas lentils, chick-peas, and mungbeans are eaten only in the dry state. Lentils are used in soups, cooked with meat and rice, or cooked alone and served with oil, onions, and garlic. Chick-peas are commonly eaten as a snack; boiled and served with salt, pepper, and vinegar; cooked with meat and served with rice; cooked alone and eaten with bread; covered with candy and eaten as sweets; or mixed with wheat flour in the preparation of "Pickawara." Broad beans are generally eaten alone as a snack or with onions and garlic; peas and dry beans are consumed with meat or cooked with "ashak"; and mungbeans are mixed with rice and cooked as "Mujaddara" or dehulled, cooked, and eaten as a vegetable.

Because there has been so little work carried out on grain legumes in Afghanistan, the major production problems cannot be confidently enumerated. However, utilization problems concerning cookability are of major importance in determining acceptability amongst the population. The major pest and disease problems recorded include rust, root rot, powdery mildew, and aphids on broad beans, and root rot, aphids, and pod borers on chick-peas.

Considerable work in both research and extension will be required in the future, first to define the major production problems, and then to increase the popularity of these crops with the farmers so that they can provide a valuable complement to cereals in rotations and assist in bringing much of the presently fallowed land into more intensive cultivation.