CHAPTER 11

COMMERCIAL CULTIVATION AND PROFITABILITY

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Abstract: Lentil has been an important source of protein in many countries where it has been grown for many centuries. In traditional growing regions, lentils are often grown with little or no inputs like fertilizers, pesticides and herbicides on small farms to supply food for the local people. Production and profitability on these farms contrasts with that on farms in more developed countries where lentils have only been grown for a short period and is export orientated

1. INTRODUCTION

Lentil (Lens culinaris Medikus ssp culinaris) is one of the world’s oldest cultivated plants and was domesticated in the Near East from the wild progenitor species Lens culinaris ssp. orientalis Boiss. over 7,000 years ago. Lentil was domesticated with wheat, barley and other pulses in the “Fertile Crescent” of the Near East and spread in a temporal sequence in all directions from this centre and some of the oldest remains of food plants dated at 7,500–8,500 B.C. are of lentil (Harlan 1971, Cubero 1981, Smartt 1984). It is probable that cultivated lentil achieved its current range in the Old World by about 1,000 BC (Smartt 1984). Lentil was introduced into the Indo-Gangetic plain around 2000 B.C. (Cubero 1981) and now half the world’s lentil area is found in South Asia. With the exception of Chile (Barulina 1930), lentil production in the Americas is a relatively recent event. Lentil was first grown in the Palouse region of eastern Washington and northern Idaho of the USA in 1916 and in the prairie of Western Canada in 1969 (Muehlbauer and McPhee 2002). In Australia lentil has only become a crop of significance since 1994.

From a world perspective, lentils are an old crop, consumed for thousands of years in the Indian sub-continent, Middle East, Southern and Eastern Europe and North Africa. Red lentils are preferred in the Indian sub-continent, Middle East and

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parts of North Africa such as Egypt, while green lentils are the predominant lentil consumed in the other regions as well as the Middle East. In more recent history, the inhabitants of South America have consumed green lentils, having taken their eating habits from southern Europe. But it has been red lentils which have ‘fed the masses’ particularly in the Indian-sub continent. Lentils are a staple food in many regions, providing an important source of protein, especially where diets are vegetarian or meat is expensive. On average over 3 million tonnes of lentils are produced worldwide. Most are consumed where they are grown, except in the new world countries of Canada, the United States of America and Australia, and in Turkey, a traditional producer.

Lentil production was initially focused on providing food for local consumption but has now expanded to a crop where significant trade occurs across countries. The current production methods for lentil are diverse and will be explored, with economic considerations, through a comparison between India, representing countries where lentils have traditionally been grown and widely consumed, and Australia, representing highly mechanised countries where production is a recent development and export orientated.

2. A CASE STUDY OF COMMERCIAL CULTIVATION AND PROFITABILITY IN A TRADITIONAL LENTIL PRODUCING COUNTRY – INDIA

2.1. Lentil Production in India

Lentil is an important winter (rabi) pulse crop in India, representing 12% of the area and production of total winter pulses. In the global context, India is the largest producer of lentil, contributing about 27% of the world’s 3.65 million tonnes of lentil production in 2005 (FAOSTAT 2006). The annual output of lentil is now about 0.8–1.1 million tonnes from an area of about 1.4 million hectares, almost double the level of production during the nineteen eighties. Productivity of lentil is about 684 kg/ha compared to an average winter pulse yield of 723 kg/ha. Lentil grows well on the light loamy and alluvial soils of north India and in well-drained light black soils of Madhya Pradesh. The three north Indian states of Uttar Pradesh (51%), Madhya Pradesh (23%) and Bihar (16%) account for about 90% of total lentil production in India with small areas in West Bengal, Rajasthan, Assam, Haryana and Punjab.

The area of lentil in India has increased by about 19% and productivity by 5% between 1995 and 2005 in India. Area expanded in the eastern states of Assam (84%) and West Bengal (19%) and in the central and Western states of Rajasthan (43%) and Madhya Pradesh (29%) rather than in northern India. The largest growths in yield were recorded in Haryana (44%), Rajasthan (27%) and Uttar Pradesh (11%). The net result was an increase in production of about 24% between 1995 and 2005 and India turned from a net importer to an exporter of lentil.

Lentil is an important crop to India’s domestic and export economy. It is the only pulse crop with a significant net exportable surplus and demand is increasing