Chapter-1

Introduction; Objectives of the study
CHAPTER-I

INTRODUCTION

Potato (*solanum tuberosum*) popularly known as 'The King of Vegetables', has emerged as fourth most important food crops of the world, after rice, wheat, and corn. A global review of the area and production of major crops reveals that potato ranks thirteenth in area covering about 19 million hectares and fifth in production, yielding about 315 million tonnes after sugarcane, paddy, wheat, and maize crops. It is the only non-cereal food crop which commands such a high position.

Potato is a staple food in several developed countries, particularly in Europe. It has a special value as food. It is a nutritious and efficient yinder of carbohydrates and protein. It has the highest food value on dry matter basis and is most nutritious in proportion to its calorie contents. Because of its filling and nutritious nature, it is one of the few foods having the potential to meet the nutritional requirements of the fast growing population. This unique contribution of qualities justifies the potato as a crop best suited for the masses of the developing countries. Indian vegetables basket is incomplete without potato, because the dry matter, edible energy and edible protein content of potato makes it nutritionally superior vegetable as well as staple food not only in our country but also throughout the world. Now it has become an essential part of breakfast, lunch, and dinner, worldwide.
Potatoes are natives of the High Andes in South America, mainly in the areas actually known as parts of Peru, Ecuador, Bolivia, and Columbia. Considering other related species of the genus *solanum*, many of the wild relatives of the potatoes still grow in a much more extended area of South America and also as far as the mountains and high plains of Mexico. It is said that the native South Americans brought potato under cultivation possibly 2000 years before the Spanish conquest. In 1537, the Spanish first come into contact with potato in one of the village of Andes. In Europe, it was introduced between 1580-1585 AD. As the Spanish conquerors brought the potato to Europe, the crop was then cultivated only during the summer periods, at the same time they had long periods of day light with cool night-situation that favours to development of big tubers. Under these conditions, potatoes can yield large amount of food per unit area, a kind of food that was easy to harvest, easy to store and simple to cook. Therefore, potatoes become a staple food also for the European people.

In India, potatoes were introduced by the Portuguese sailors during early 17th century and its cultivation was spread to North India by the British. However, it entered commercial cultivation only by about middle of the 19 century when it came to be grown widely in the hills and
plains. Since then, the crop has received systematic research and
development support and its area, yield and per capita consumption has
increased consistently. Indeed, the breeding of several H.Y.Vs of potatoes
suitable for various agro-climatic regions of the country, the development
of ‘Seed Production Technology’ in North-Western states and
standardization of crop management practices to utilize full genetic
potential of H.Y.Vs have been the main contributory factors for the
phenomenon increase in potato production and productivity in India.

International Scenario

Potatoes are grown in about 150 countries throughout the world
and more than a billion people worldwide eat potato. About 324.18
million tonnes of potato are produced in the world over an area of about
18.35 million hectare, with an average productivity of about 17.91 tonnes
per hectare during 2010.

China, the Russian Federation, India, the USA, Ukraine, Poland,
Germany, Belarus, the Netherlands, France, the UK, Canada, Turkey, and
Romania are the major potato growing countries of the world. However,
the top five countries contribute for more than 50% of world total
production. China stands first with an average annual production of 65.55
MT followed by the Russian Federation (32.55 MT), India (32.26 MT),
Major Producers of Potato In the World-2009-10

China, 22%
Russia, 12%
India, 8%
USA, 6%
Ukraine, 6%
Others, 46%
the USA (11.54 MT), and Ukraine (19.52 MT) during the year 2009. Only 2-3% of about 300 MT of the world potato is traded internationally. The Netherlands, Germany, Belgium, Luxembourg, France, Italy, Canada, the USA, Egypt, Turkey, and Cyprus account for about 80% of the potato export trade. The Netherlands, the USA, and Canada are leading in the production and export of processed potato products.

India's contribution to the world potato trade is hardly about 0.3%. India exports around 3 Lakh tonnes of potato to various countries in different forms. Potato is mainly exported in fresh form, seed potato, and processed potato. Nepal, Sri Lanka, the United Arab Emirates, and Mauritius are the major destinations for fresh potato. The major destinations for Indian seed potatoes are Nepal, Sri Lanka, and the United Arab Emirates.

**Indian scenario**

India ranks now 3\textsuperscript{rd} in area and it is the 2\textsuperscript{nd} largest country in world in production of potato along with Russian Federation after China. Potato is produced in an area of 18.11 lakh ha with a production of 285.80 lakh tonnes and productivity of 15.78 ton per ha. (2009). It accounts for meanly 2.25 percent share of the total agriculture income of the country to the national income from only 0.6 percent of the cropped area.

Potato is grown almost in all states of India. Major potato growing states are Himachal Pradesh, Punjab, Uttar Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Karnataka, West Bengal, Bihar and Assam. UP, West Bengal, Bihar and Punjab together account for about 86% of India’s production. However, potato consumption per capita in India (14.8 kg/head/year) is one of the lowest in the world and hardly 1% of the potato is processed. The major countries to which India exports are Nepal followed by Srilanka, Mauritious, Maldives and USA. Nepal shares almost 82% of total exported quantity.

Netherlands (ninth in production and the highest exporter and importer) exports around 22-28% of its production. Whereas, India being the third largest producer exports hardly 0.45%. This is because Netherlands has the comparative advantage of weather that allows it to grow varieties that are suitable for further value addition like chips and French fries. The same is the case with Germany and Belgium. But in
India the climate required to grow varieties for French fries and chips is not so conducive. But now some varieties like Chipsona-I and Chipsona-II are being developed by ICAR especially. Once these varieties are fully developed they will give a good competition to the European value added potato varieties.

Today, India has emerged as a leading producer of potato in the world. The agro-climatic conditions of the country afford opportunities to grow potato all the year round in one part of the country or the other. In Indo-Gangetic regions, comprising states of Punjab, Haryana, Uttar Pradesh, Bihar and West Bengal, the crop is grown under short day condition from October to March as in South American countries the native home of potato. But in Northern hills, the crop is raised under long day conditions during April to September, as in European countries.

Amongst different states of India Uttar Pradesh ranks first both in area and Production of potato. It accounts for 32.50 percent area and 38.30 percent production of the country’s total respectively. In Uttar Pradesh, district Farrukhabad occupies a prestigious position so far as potato production is concerned. The district accounts for about 13 percent area and 14 percent production of U.P’s total respectively. However, several other districts also enjoys favourable agro-climatic conditions and
In potato production areas and average yields:

- Average yields, tons per hectare:
  - 24.1 - 28
  - 20.1 - 24
  - 16.1 - 20
  - 12.1 - 16
  - 8.1 - 12
  - 4 - 8
  - Major cities

Each dot estimates 1,000 hectares.
other facilities which are necessary for potato production. The availability of sandy or medium, loam fertile soils, use of chemical fertilizers, assured irrigation, marketing and cold storage facilities are highly responsible for production of potato and thereby higher income to the farmers. District Kanpur Dehat is one where potato cultivation has emerged as a main cash crop enterprise because of its higher demand due to urbanization of adjoining areas and adjacent to Kanpur city. Because of higher cash returns in shorter time and higher cost-benefit ratio, farmers of the area have shifted their cropping pattern in favour of potato crop. Potato being a short duration crop ensures higher intensity and being labour intensive generates wide employment avenues to the family member, besides proper utilization of production resources.

The marketing system plays a very crucial role for achieving the twin conflicting objectives of providing remunerative prices to farmers and at the same time ensuring supplies to consumers at reasonable price. An efficient marketing system ensures higher level of income for the farmers by minimizing marketing cost, margin of profits and thus providing higher producer's share, in the price paid by the consumers. Agriculture marketing is an adjacent to the agriculture production and is patently as vital as the latter. Activities in these two spheres, therefore,
need to be closely coordinated. The condition under which the farmers dispose of their marketable surplus in the villages and nearby mandies will have significant impact on their production programs. The return to the farmer, which is the ultimate goal of his production, is largely governed by these conditions and if they do not get reasonable price for their produce, they gradually lose their interest in production.

**Justification and Scope of the Study:**

A study on production and marketing of potato is necessary to an understanding of the complexities involved and bottlenecks with a view to providing efficient services in the transfer of potatoes from producer to consumers. The analysis of cost and returns is necessary in allocating the competing resources for maximum possible returns. An efficient marketing minimizes marketing cost and losses and thus benefits all the sections of the society. Producers want to maximize their returns while consumers want a marketing system that can provide produce at the lowest possible price. An efficient marketing also ensures income to the producers by reducing number of middle men in marketing channel and reducing commission on marketing services and malpractices adopted by them.
The studies conducted on potato so far have concentrated on a particular aspect of the problem investigated. Such an approach fails to take into account many related aspects of the commodity like economics of resource use, cost of production, cost of cultivation, returns, marketing cost etc. It is in this context that present study assumes greater significance. The study examines economics of production and marketing of potato from different aspects along with post harvest management.

Potato is an important cash crop of the study area. It plays an important role in farm economy of all size groups of holdings in the district leading commercialization of agriculture. But the producers face a number of problems in production and the marketing of the produce. The production and income of the farmers per unit basis is affected to a greater extent with regard to use of input resources and their availability while producer's share in consumer's price is affected by the high cost of marketing and other malpractices present in process of marketing. In this context, the study provides basic information all these aspects.

Thus, the finding of the study may be very useful to the economist, extension workers, planners and farmers in formulating strategies for the proper use of production resources on one hand and development of potato production and its marketing, benefiting both potato growers and consumer as well, on the other.
Objective of the Study:

Considering the above points in view, the present study was undertaken in district Kanpur Dehat during 2007-2009 with the following objectives:

I. To find out the economics of production of potato crop under different size groups of the selected area.

II. To workout the marketable surplus of potato crop on sample farms and its flow through different marketing channels in the study area.

III. To workout the marketing cost, marketing margin, and producer’s share in consumer price in potato in the study area.

IV. To suggest suitable measures for tackling the problems faced in production and marketing of potato.