1. INTRODUCTION

India is endowed with a rich genetic diversity of fruits. Fruits are of immense significance to human being. Fruits supplement human diet as they provide essential vitamins, minerals and fibre required for maintaining health. Certain therapeutic uses of fruits are also reported. Carotenoids and vitamin C are known for reducing the cancer risk by enhancing tumor surveillance by immune system. (Macrae et al. 1993).

The total production of fruits in World is reported as 2500 million metric tones (FAO, Potash corp 2011). India is a second largest producer of fruits after China, with a production of 68466 thousand metric tones of fruits from an area of 6101 thousand metric hectares (Mistry et al 2010). According to National Horticulture Board, the main fruits grown in India are apple, banana, lime/lemon, grapes, orange, mango and papaya. The fruits viz. mango, banana, citrus, guava, grape, pineapple and apple are the major ones. Apart from these, fruits like papaya, jackfruit, ber and pomegranate are fall under tropical and subtropical region whereas peach, pear, almond, walnut, apricot, strawberry and apples grow well in temperate region. Many of these fruits have got due attention since time immemorial and became popularized due to their larger appeal and ethos.

Himachal Pradesh is a predominately a horticulture state of India specially known for apples. The productivity of horticulture crops/fruits is largely influenced by geographical and environmental diversity prevailing in different zones of Himachal Pradesh. The wide variation in altitude and other agro-climatic parameters such as rainfall and temperature, the State is categorized into four agro-climatic zones which include:

- Sub-tropical sub mountain and low hills (0-914 m above msl)
- Sub temperate sub humid mid hills (915-1523 m above msl),
• Wet temperate high hills (1524-2472 m above msl)
• Dry temperate high hills and cold deserts (2472 m above msl). (Sharma et al. 2001).

In addition to major fruits, the various underutilized fruits are widely grown in different zones of Himachal Pradesh, which are being used by the local inhabitant. These fruits were an important source of food for mankind before dawn of civilization and domestication of present day fruits. Cavemen in forests also depended on these fruits and passed on valuable information on utility and choice of wild species of fruits from generation to generation. These fruits are growing throughout the Himalayas and contributed directly to cultural heritage of India. Even today, these fruits are eaten in plenty by local people, as they are commonly available in abundance in their habitats (Patel et al. 2008).

Underutilized fruits are those which are neither cultivated in an organized farming system nor processed by established commercial processing methods. These crops have many advantages in terms of easiness to grow, hardy in nature and production of good crop even under adverse conditions. Most of these fruits are rich sources of vitamins, minerals and other nutrients. A large proportion of rural population depends on locally available fruits to meet their dietary requirement. Most of these fruits have an exotic flavour and attractive colour. These fruit crops have their own history of consumption. Local people are well aware about their nutritional and medicinal properties. The popularity of these fruits varies from fruit to fruit and locality to locality which can be enhanced to a greater extent through publicity. The utilization of these fruits not only enhance the components of our food basket but also helpful in increasing the beneficial effect of such fruits.

The potential underutilized fruits of Himachal Pradesh are fig, kaiphal, wild apricot, beedana, wild pomegranate, kainth, wild peach and crab apple. These fruits have tremendous medicinal value and are used in curing various diseases/disorders. So, there is a great scope for the processed products from these fruits
not only because of their exotic flavour but also due to their neutraceutical importance and therapeutic value. Processing of underutilized fruits in to value added products results in a wide variety of exotically flavored products with better nutritional and sensory qualities that may also unveil new markets for export. Keeping in view the significance of the underutilized fruits, the present study “Nutritional quality, functional properties and value addition of underutilized fruits of Himachal Pradesh” was proposed with the following objectives.

1. To study the physico-chemical and nutritional parameters of selected wild/underutilized fruits growing in different agro-climatic zones of Himachal Pradesh.

2. To study the functional/product development properties and evaluation of different value added products.

3. To assess the consumers acceptability and marketing profile of the prepared products.

4. To document the use of selected wild/underutilized fruits for medicinal as well as for household purposes in the areas where grown/available.