Cauliflower (Brassica oleracea var. botrytis L.) is one of the most important members of the cole crops and has originated in the Mediterranean region. It belongs to the family Brassicaceae and is grown for its fleshy apical meristem (undifferentiated floral buds). It was introduced in our country in 1822 (Swarup and Chatterjee, 1972). It is grown in an area of about 260 thousand hectares with production of 4800 thousand metric tones in the country (Anonymous, 2002). Being an important off-season vegetable crop of mid and high hills of H.P, it is grown in an area of about 2263 hectares with a production of 53,103 metric tones (Anonymous, 2005-06).

It is a commercially grown in different pockets in the country. Its production can, thus, be a viable potential for vegetable growers of the country. In Himachal Pradesh, its importance is much more as an off-season vegetable as it fetches remunerative price to the farmers of the Pradesh and strengthen their economy. However, considering the agro-climatic conditions of the state, there is vast scope to further improve its productivity.

Cauliflower is a good source of nutrients. It contains 91.7 per cent moisture, 4.9 per cent carbohydrates, 2.4 per cent protein, 0.2 per cent fat, 0.35 per cent calcium, 0.76 per cent phosphorus, 75 mg / 100 g vitamin C and 117 ppm iron (Brown and Hutchison, 1949). With the development and introduction of new varieties considerable increase in its production has been achieved, but there is further scope to enhance its productivity with suitable agro-technologies.

Although considerable research work has been carried out in India on various aspects of cauliflower cultivation, but the problem of
weeds in this crop needs special attention, as weeds when present in the field reduce the yield and impair the quality of the produce. For vegetable purpose, the crop remains in the field for about four months and during its growth period, the crop faces competition due to prevalence of monocot and dicot weeds.

The crop weed competition in cauliflower reduces the yield up to 61 per cent (Singh et al., 1996). There is a severe competition between crop and weeds, which varies with growth habit, nutritional requirements, time of emergence and life cycle of the weeds in cauliflower. Weeds when present in the field reduce the yield and during early stages, crop-weed competition is more serious (Everaats and Mulchtar, 1979). Traditionally, the crop is hand weeded but the method is time consuming and laborious. The second alternative can be the use of herbicides. No single herbicide is effective in controlling the wide range of weed flora and even continuous use of same herbicide develops resistance in escaping weed flora. Thus, it is of utmost importance, advisable and beneficial to go in for integrated approach or combination of more than one method to achieve the desired results. Keeping in view the seriousness of weed problem, high cost of manual labour and availability of different herbicides, the present investigation have been planned and executed following an integrated approach involving herbicidal and non-herbicidal treatments with the following objectives:

1. To study the efficacy of weed management practices on weed flora and yield,
2. to ascertain the critical period of crop-weed competition,
3. to work out the comparative economics of each treatment, and
4. to study the effect of weed management practices on N, P and K uptake by the weeds and the crop.