INTRODUCTION

Lentil (Lens culinaris Med) is the most important pulse crop of India. It has a unique feature in the plant kingdom as it is exclusively endowed with the inherent ability to substantiate nitrogen enrichment of the soil through nodules in their root system from the atmospheric nitrogen. Legumes, owing to this characteristic, contribute and sustain the soil-fertility apart from providing valuable protein to human diet as well as in maintaining a balanced and viable eco system. Diet of majority of people in India depends primary on vegetable protein and grain legumes are the main source that contribute to their protein requirements. As such, pulses are consumed along with the main cereal diet. The pulses account for about one-fifth of the acreage under food grains and 1/7 of their production. The share of pulses in the total cropped area as well as in the value of output of principal agricultural crops is about 1/12 (Saraf, 1983). Pulses, occupying an important place in India, are considered as the cheapest source of protein for the vegetarian masses, but their relative productivity is quite low. Inspite of low yields, farmers continue to grow grain legumes, because of their various inherent merits such as they fulfil the protein requirement of diet of the masses; fit in very well in multiple cropping programmes and crop mixtures, thrive well in medium to poor soils, flourish well under soil - moisture stress and are considered as restorer of soil fertility by
way of symbiotic process (Swaminathan, 1979). Thus, the cultivation of grain legumes on larger scale need to be encouraged not only to cater the ever-increasing requirement of pulses for vegetarian masses, but to enrich the soil fertility as well.

Rabi pulses occupy about 57 per cent of total pulse area and produce about 64.4 per cent of the total pulse in country. Among the rabi pulses, Bengal gram (Cicer arietinum L.), lentil (Lens culinaris Med.) and pea (Pisum sativum L.) are more important and hence mainly cultivated. Of the various pulses, lentil is one of the oldest rabi crop in India. It is largely eaten as 'Dal', which is commonly considered inferior to black gram, but as good as red gram or pigeon-pea. Now-a-day, it is widely used in the preparation of 'Dal moth', a marketable popular product for domestic consumption. The green pods of lentil are sometimes used for culinary purposes (Sunder Raj et al., 1976). Lentil contains about 25.1 per cent protein. In rural areas, feeding of lentil is supposed to encourage the flow of milk in milch animals (Thakur, 1975). The straw of lentil contains 11.3 per cent protein.

Lentil is better adopted to drought conditions and can grow on poor and even on considerably dried clayey soils. It is also tolerant to frost and foggy weather. In area, where paddy is grown as a main crop of Kharif season, paddy-
lentil crop sequence is quite popular. Also in years when monsoon is not normal and after harvesting Kharif crops, generally moisture depletes in the soil, lentil could be grown well. The crop of lentil occupies 0.6 million hectares area and produces nearly 0.3 million tonnes grain annually with an average yield of only 526 kg per hectare which is quite low (IARI, 1991). The principal causes of low yields are adoption of poor crop husbandry practices, use of low yielding varieties and lack of inoculation, fertilization and such other agro-practices. With this view, there is justified requirement to plan experimental researches on regional basis.

Selection of variety is the single factor which can determine the size of profit of lentil cultivation to a considerable extent. Each type of variety requires a set of climatic conditions to yield at its maximum potential level. Now a days, a number of high yielding varieties of lentil are available and before recommending to the farmers, it is essential to identify the most suited variety for specific agro-climatic zone.

Sulphur is one of the essential f has a vital role in chlorophyll for part of some essential amino acid and methionine. It is also a const compound that plays a part in plant.
synthesis of essential oils. The significance of sulphur deficiency as a factor in limiting the yield and quality of grain legumes has been recognised only very recently. Its importance in crop production, particularly in grain legumes, is well documented. Nodule development on the roots of legumes is also promoted by sulphur-fertilization. It is essential for the conversion of nitrogen fixed from the atmospheric N by legume root nodules into protein nitrogen. In legume crops, sulphur plays a significant role in quality and development of pods. Probably for these reasons legume crops need comparatively higher amount of sulphur for proper growth, development and higher yield of crops. In order to sustain the crop production in the areas showing widespread low sulphur status, addition of this nutrient is warranted. Adequate information on the choice of sulphur fertilizers for lentil crop in Meerut region is not available. Hence, this study was undertaken to investigate the suitability of sulphur fertilizers for lentil crop grown in agro-climatic conditions of Meerut region.

Keeping in view the facts enumerated above, the present investigation was undertaken in the Department of Agronomy, Aamar Singh College, Lakhaoti (Bulandshahr) with the following main aims and objectives:
1. To select high yielding and most adaptive cultivar of lentil for Merrut region.

2. To find out the suitable source of sulphur for maximisation of the yield of lentil.

3. To determine the optimum dose of sulphur for lentil.

4. To study the effect of sulphur on quality and uptake of nutrients by lentil.