INTRODUCTION

Floriculture is aesthetic part of Horticulture, floriculture the profession of production of ornamental plants and their products once considered as garden’s activity is now fast emerging as a major important and commercial agri – business venture in India.

India earned foreign exchange of Rs. 178.87 crores from floricultural produce during 2002-2003 which increased up to 340.14 crores during 2007-2008. Out of that Rs 51.04 crores was by cut flower only (Anon 2009). National flower market and export is increasing at faster rate and contributes. 18% share of total world flower trade, which is negligible Bengalure, Hyderabad, Pune, and Delhi are the main center for export of flower.

Gladiolus botanically know as Gladiolus grandiflorus L. belong to the family Iridaeaceae. It is ideal both for garden and floral decorations both. It is excellent for beds, rockeries, pots, herbaceous border and cut flower. The herbaceous plant sprout from auxiliary buds of an underground structure, the corm which is a modified thickened, fleshy stem covered by 4-6 dry scales which are bases of the old leaves. As the soils of south Gujrat are alkaline, it renders the availability of micronutrient therefore, present study was conducted to study the effect of different micronutrient on growth and yield components of Gladiolus.

Gladiolus is considered as main cut flower and garden plant. It is cultivated in almost all countries of the world, with USA producing 80% of the world Gladiolus. In India, Gladiolus has become an important commercial cut flower with greater demand in indigenous market for its majestic spikes, which contain attractive, elegant and delicate florets. It is next to rose in Indian flower trade. Indian has about 1250 hectares of area under Gladiolus cultivation with a production of about 150 million spikes each year. In India, Lucknow is known as “The capital city of Gladiolus” with a business of Rs. 10 crore annually.

The major Gladiolus growing areas are kalimpong (W. B.), Srinagar (J &K) Lucknow (U.P.) and Nainital (Utrakhand). It grows almost around the year of Bengaluru.

SUMMARY AND CONCLUSION
In Tarai region in Uttar Pradesh (U. P.) its commercial cultivation is gaining popularity due to prevalence of congenial climatic conditions from August to December.

It is leading cut flower of not only India but the World also it is very much liked for its majestic spikes which contain attractive, elegant and delicate florets. It is one of the glamorous bulbous flower of beauty and perfection and it is rightly called “Queen” of the bulbous flowers.

Gladiolus is an important and popular cut flower, grown everywhere in the world. It has innumerable cultivars with assortment of attractive colors. This flower bears an economic and aesthetic value for its beauty and elegance. The long flower spikes are excellent as cut flower for ornamentation when arranged in vases. Now, it has been trading in domestic and international markets having great demand. But the paramount problem, the farmers are facing is judicial use of chemical fertilizers. The requirement of fertilizers like other crops has vital role in growth, quality of flowers, corm and cormel production. Gladiolus is highly responsive to chemical fertilizers. It has been reported that nitrogen, phosphorus, potassium with micro-nutrients especially boron and zinc remarkably increased the weight and number of corms and cormels per hill (Afify, 1983, Shah et al., 1984 and Mukherjee et al., 1998).

It was also reported by many researchers (Singh et al., 1996 and Das, 1998) that boron and zinc had a significant effect on corm and cormel production. The growers do not have any recommended doses of chemical fertilizers especially micro-nutrients for quality corm and cormel production. Even the flower producers multiply their seeds without applying any chemical fertilizers. Resulting, they are deprived of getting optimum sized corms and cormels for flower cultivation. So boron and zinc are treated to be the limiting elements for maximizing corm and cormel production. However, there is scanty information regarding nutritional requirement on the production of corm and cormel for Gladiolus cultivation.

Iris flowers are main exportable flower and the foreign markets demand Egyptian flowers with high quality and must match the international standards of exportable flower. But the paramount problem the farmers are facing is judicial use of chemical fertilizers. The requirement of fertilizers like other crops has vital role in growth, quality of flowers,
bulbs and bulbites production, especially when grown in reclaimed soil. In this context, **Mahgoub et al. (2006)** mentioned that further increments in nitrogen level 40g/m2N+ 35gK/m2 recorded the highest values of plant highest, spike length and No. of flowers/spike of iris. **Paradhan et al. (2004)** also found that on Gladiolus, combined application of N at 40/m² and K at 30g/m² recorded the highest values of plant, leaf area, spike length and No. of flowers/spike.

Micronutrients had great effect on plant growth and development such as boron and zinc nutrients. The main function of boron is related to cell wall strength and development, cell division, sugar transport, and hormones development, RNA metabolism, respiration, Indole acetic acid (IAA) metabolism and as part of the cell membranes **Marchner (1995)**. In Gladiolus plant **Halder et al. (2007a, b)** found that application of boron at 2.5Kg/ha-1 could be suitable for maximizing yield and flower quality. Zinc plays an essential role in plant physiology where it activates some of enzymes related to metabolism of carbohydrates, auxins, RNA and ribosome functions. The beneficial effect of zinc on several ornamental plants were studied, **Farahat et al. (2007)** on Cupressus sempervirens L., **Halder et al. (2007a,b)** on Gladiolus, **Razin et al. (1992)** on thyme. In a solution culture study **(Grahn et al. 1987)** reported that boron toxicity was more sever and appeared first in zinc deficient in barley plants compared to those supplied with adequate Zn, as reported by **Singh et al. (1990)**, Zn deficiency may enhance Boron absorption and transport to such an extent that Boron may possibly accumulate to toxic levels in plant tops. Therefore, the recent investigation aims to study the effect of zinc and boron application as well as their combinations on growth, flower characteristics, chemical constituents, mineral nutrient contents and flowers essential oil content of iris plant. Nutrients are essential for plant growth are categorized as macronutrient (such as nitrogen, phosphorus and potassium) and micronutrients. There are essentials micronutrient: Copper (Cu), Zinc (Zn), Iron (Fe), Manganese (Mn), Boron (B), Chlorine (Cl) and Molybedenum (Mo).

Micronutrient are important for crop growth, quality and yield may be affected if any one of the eights essential micronutrient is lacking in the soil or is not adequately balanced with other nutrient.
The availability of micronutrient to plants is determined by both the total amount of the nutrient in the soils and the soil’s properties. Other, factor, such as crop species and variety, can also influence the degree of which micronutrient levels affect crop production.

From above context and justification, therefore, a field study was undertaken to find out the optimum dose of Boron and Zinc for maximizing yield of corm and cormel for Gladiolus cultivation.

Keeping above facts in view the research work entitled “Effect of different micronutrient on plant growth, spike yield and flower quality of Gladiolus (Gladiolus grandiflorus L.) cv. White Prosperity” was carried out with followings objectives:

**OBJECTIVES:**

1. To find out the suitable treatment for plant growth, spike yield and quality of Gladiolus.
2. To study the effect of different treatments on shelf life of spikes.
3. To estimates yield of corm and cormel production.
4. To work out the economics of various treatments.