

1. INTRODUCTION

Gerbera (named in honor of Traugott Gerber, a German naturalist who traveled in Russia).

Asteraceae family which is the greatest family of plants. A small group of temperate and tropical Asiatic and African perennial herbs grown for their yellow or pink or orange flower-heads.

Stemless herbs with radical, petioled leaves which are entire or sometimes lobed, flower-heads solitary, many flowered, the conspicuous rays in 1 or 2 rows, those of the inner row, when present, very short and sometimes tubular and 2-lipped, as are the disk flowers, achenes beaked. There are 40 species, only one of which (*Gerbera Jamesonii*) is well known in America, and is sometimes found outside the collections of botanic gardens and fanciers. They should be grown in the temperate house, in a rich compost of sandy loam and peat. Propagation by seeds or by cuttings of side shoots (Bailey, 1978).

The native distribution of this genus, comprising of 40 species, extends to Africa, Madagascar, tropical Asia and South America (Bremer, 1994). The first official description of the South African species *Gerbera jamesonii*, also known as Transvaal daisy or Barberton daisy, was made by J.D. Hooker in 1889 in Curtis Botanical Magazine. It bears a large capitulum with prominent, yellow, orange, white, pink or various red coloured ray florets (Hansen, 1995). The breeding of gerbera started at the end of the 19th century in Cambridge England when two South African

species, *G. jamesonii* and *G. viridifolia*, were crossed by R.I. Lynch. He named the hybrid as *Gerbera x cantebrigiensis*, known today also as *Gerbera hybrida*. The majority of the present commercially cultivated varieties originate from the crossing progenies of these two species. Natural hybrids of the two species have not been found (Hansen, 1995). Already at the turn of the century, gerbera was cultivated in England, Belgium, USA, Germany and Italy. Today, gerbera is known as an important article of trade and it belongs to the most important ornamental plants species in the world with rose, chrysanthemum, carnation and tulip. In 1991 gerbera was ranked sixth in sales through Dutch flower auctions and it is sold both as cut flowers, the flowers are greatly required in European and Arabic markets because of their beautiful shape, wide range of colors and long vase life that have a considerable economical value for export and pot plants. In recent years, exports of gerbera pot plants have been increased from small developing industries in other countries such as Brazil, Argentina and Colombia. Their exports were more than five millions gerbera pot plants yearly (ITC, 1997).

On the other hand, gerbera plant is used in the preparation of traditional Chinese medicine: tu-er-feng, derived from whole plants of gerbera and is used for curing cold with cough and for rheumatism (Ye *et al.*, 1990). Also, gerbera plant contains many biological compounds, extracts from whole herb of gerbera, can act as antifeeding compounds against certain butterfly larvae and as antifungal compounds.

The application of fertilizers with gerbera may cause increase in vegetative growth, flowering and yield of offsprings. Also irrigation is one of the important factors which affect greatly growth, yield and quality of flowering and offsprings. Hence, the objectives of this study were to eluciate the effect of NPK fertilization on growth, yield of flowers (quality and quantity) and to determine the optimum quantity of water and irrigation periods which give healthy growth and good quality of gerbera flowers.