



## Effect of weed control methods on total dry matter of weeds in china aster [*Callisitephus chinensis* (L.) Nees] cv. KAMINI

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### ABSTRACT

Weeds bring about heavy damage to flower crops by competing with them for water, nutrients, light and space, besides acting as alternate host to a number of pest and diseases. Out of several factors affecting growth and production of flower crops, weeds are the most important ones. Reduction in crop yield has direct correlation with weed competition. Weed dry weight was less at initial stages but the weed dry weight was maximum at 90 DAT. This was due to dominance of some weeds, which accumulated the biomass suppressing the others. However, the results indicated that the weed control treatments were effective in checking the weed growth. The dry matter production of grass, broad leaved weeds and sedge and total weeds at different crop growth stages differed significantly due to weed control treatments. The dry matter production of weeds at harvest was the highest in unweeded control ( $T_1$ ) while all the herbicidal treatments resulted in significantly lower dry matter production of weeds as a result of lower weed density. In flower crops, an integrated approach involving cultural practices in combination with some herbicides appears to be economical and promising in controlling weeds. The dry matter production of weeds recorded at different stages is a better reflection of the efficiency of weed control treatments in China aster.

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**Key words :** China aster, Weed, Dry matter, Grass, Sedge, Herbicide

China aster [*Callisitephus chinensis* (L.) Nees,] cv Kamini a member of the family Asteraceae is one of the important commercial crop in India, the growth of the plants and flower yield depends on the cultivation practices adopted, weed free environment right from early stage ensure higher yield. Weed infestation hampers the growth of China aster plants in the early stages besides harbouring many pests and diseases; they compete also for nutrients and moisture. Lower weed dry matter production of weeds in weed control treatments may be ascribed to the less number of weeds, rapid depletion of carbohydrates reserve of weeds through rapid respiration and may also due to the inhibited photosynthetic activity. The science of weed control has advanced considerably during the past two decades. A number of herbicides have become available in the market for control of weeds in flower crops. However, detailed information on this choice of herbicides, their appropriate dosage and time of application is not fully available to the farmers' usage. Considering the economic importance of China aster, the present study was taken up with above mentioned

objective.

### MATERIALS AND METHODS

The field experiment was conducted at the Horticulture Research Station, University of Agricultural Sciences, Bangalore during 2001-2002. The experimental site is located at an altitude of 930m above MSL with 12°58'N latitude and longitude 77°35' East. The soil was red sandy loam with pH of 7.0 and moderate fertility status.

China aster [*Callisitephus chinensis* (L.) Nees,] cv Kamini, used in the present study was developed and released by the varietal identification and release committee of the Indian Institute of Horticultural Research, Bangalore. It is an erect growing and branching annual with alternatively arranged broad, ovate and serrated leaves. It attains very open form with loose branching habit and bears deep pink flower heads at the end of relatively long stalks. The flower heads are comet type having flat disc florets with long spreading loose ray florets.