

SUMMARY

EFFECT OF LED LIGHTING ON THE MICROPROPAGATION OF CARNIVOR PLANTS OF THE GENUS *Pinguicula*

Carnivorous plants are extremely attractive, at present they are used as ornamental plants, that is why they are taken out of their habitat and commercialized in an illegal way. In Mexico, one of the most widely distributed genera are plants of *Pinguicula* genus, this genus has about 48 endemic species, among them are *P. agnata* and *P. gigantea* species. Due to anthropogenic causes, these plants are at risk of disappearing; this is why the use of technologies as plant tissue culture (PTC) is fundamental for the conservation and commercial production of these plants. Currently, PTC has been used in combination with other technologies to increase agricultural production, one of them is the use of Light Emitting Diode (LED). The present work had as objective the *in vitro* establishment of two species of *Pinguicula* genus incubated in photoperiod and darkness, and the evaluation of different treatments of LED lighting (blue and red in different proportions) and fluorescent light, during their micropropagation and in chlorophyll accumulation. The results showed, that during *in vitro* establishment, both species of *Pinguicula* presented the higher survival in darkness for 15 days, *P. agnata* with 66.67% and *P. gigantea* with 26.67 %. *Pinguicula agnata* showed the higher production and higher size of new shoots in the treatments with illumination blue LED:red LED (1:1) (LED B1:R1), and blue LED:red LED (1:2) (LED B1:R2); this last treatment produced the higher amount a, b and total chlorophyll. *Pinguicula gigantea* produced the highest number of shoots and the greatest amount of a, b and total chlorophyll in the treatment blue:red LED (1:3) (LED B1:R3). In conclusion, LED lighting in blue and red combination increased the production of shoots, as well as their size, in *P. agnata* and *P. gigantea*; likewise it stimulates the production of a, b and total chlorophyll. This type of lighting was more efficient and productive compared to traditional fluorescent lighting.

Key words: LED lighting, carnivorous plants, plant tissue culture