

**INFLUENCE OF BROOMRAPE ON SOME ANATOMICAL AND  
PHYSIOLOGICAL TRAITS IN SUNFLOWER**

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**ABSTRACT**

Parasitic species of *Orobanche* are totally depend on their host for all nutritional requirements, drawing nutrients from host plants via a specialized structure named haustorium. *Orobanche cumana* is a specific parasite of sunflower (*Helianthus annuus* L.) that can cause reductions in crop yield and different yield associated traits, such as head diameters, weight of 1000 achenes, number and weight of seeds per head etc. Here, we evaluate the influence of broomrape on some anatomical and physiological traits in host. Plant height, leaf area, content of pigments (chlorophyll a and b, carotenoids etc.), as well as crop yield of some sunflower hybrids susceptible to the parasite were analysed in two infested and non-infested fields during 2021 agricultural season. In different fields the number of broomrape attachments per host plant varied between 0,6 and 5,1 depending on sunflower genotypes. The most affected was the hybrid noted HT3, which shown the lowest value of yield (1,6 t/ha comparative to 3,4 t/ha in control). The yield of infested plants was significantly diminished (by 34-54%, depending on sunflower hybrids) comparative to non-infested controls. In addition to yield losses, broomrape significantly influences sunflower leaf area. So, an increase in leaf area and leaf area index (by 16-59%) in *O. cumana* infested sunflower was found in comparison to non-infested plants, the results being in concordance with those reported by other researchers. Although changes in chlorophyll content also were reported in some plants attacked by broomrapes, in this study, chlorophyll a, chlorophyll b, chlorophyll a + b content and Ca/Cb did not show any significant differences between the infested and non-infested hybrids. No significant correlations were found between the number of *O. cumana* attachments and the degree of damage to the host.

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