The present experimentation evaluated the potential of a bio-stimulant, made by indigenous strains of *Trichoderma*, on the performance of safflower plants cultivated in the region of Touggourt (Southeastern Algeria). The study was conducted according to seven (07) biometric measurements associated to growth and yield comparing treated and non-treated plants. Results revealed that the biological product has a stimulating efficiency towards all examined parameters. The percentage of germination in the treated plots (93.75%) was more than the non-treated (78.13%). After, it enhanced the growth of safflower plants either in the lifting, flowering, or the time of harvesting clumps and seeds. Furthermore, the treated plants were influenced by the applied bio-stimulant with significant differences in the diameter (2.6 cm; $p = 0.01$) and the number of principal branches (21.3 branch/plant; $p = 0.07$) comparing to the control plants. Besides, great efficiency of this bio-product was recorded with very highly significant differences on the weights of fresh (28.63 g; $p = 0.000$) and dry (1.31 g; p = 0.000) clumps per plant. Also, the statistical analyses applied on the productivity of safflower presented a significant difference (t 2.43, $p = 0.018$) between the treated plants

(20.51 g/day) and the control (7.92 g/day). The present bio-stimulant was very efficient in promoting the growth of safflower crop so that it can be contributed in sustainable organic agriculture