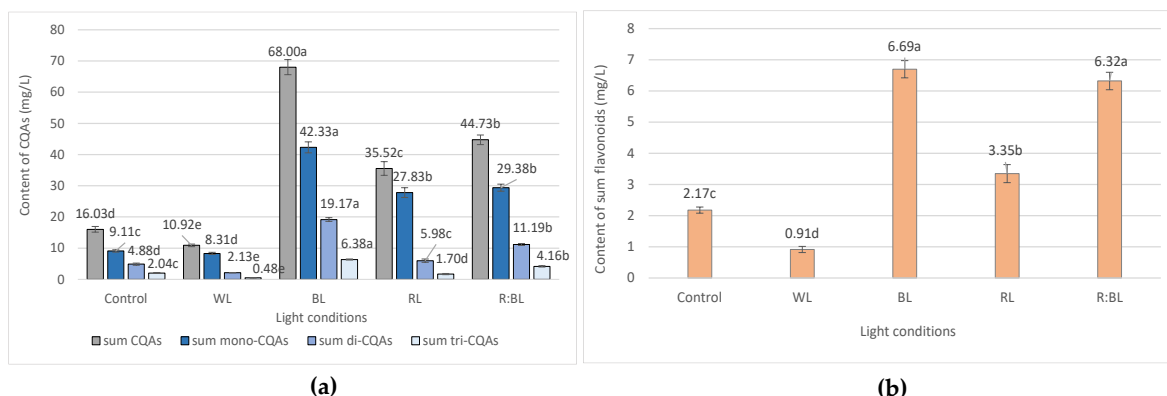
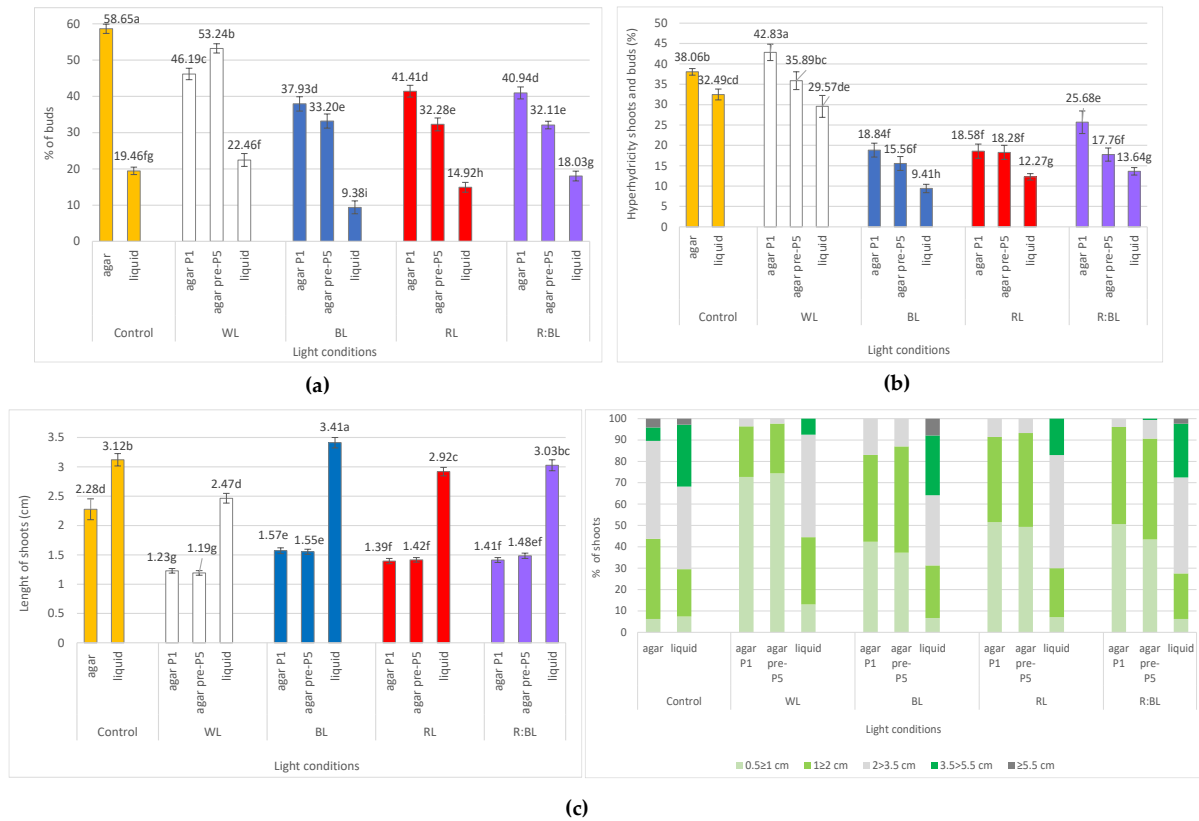


**Figure S1.** The effect of the LED light conditions on the content of identified CQAs of *R. carthamoides* shoots. **Control** – cool-white fluorescent light (FL); **WL** – white LED light; **BL** – blue LED light; **RL** – red LED light; **R:BL** – red and blue LED (70%:30%) light; **agar** – shoots grown on agar (0.7%) MS medium; **liquid** – shoots grown in liquid MS medium, in a 300 mL Erlenmeyer flask on a rotary shaker at 80 rpm; **agar P1** – shoots grown on agar (0.7%) MS medium directly exposed to LED lights; **agar pre-P5** – shoots grown on agar (0.7%) MS medium exposed to LED lights for 5 passages (35 days of each).



**Figure S2.** The productivity of the sum of all identified CQAs (a) and flavonoids (b) (expressed in mg/L of medium) in *R. carthamoides* shoots cultured for 35 days in the liquid MS medium supplemented with IAA 0.1 mg/L and BA 0.5 mg/L in a 300 mL Erlenmeyer flask on a rotary shaker at 80 rpm. The results are means values  $\pm$  SE. There is no difference ( $p < 0.05$ ) among the means for the same metabolite marked with the same letter. Abbreviations refer to the conditions of the conducted analysis, as indicated below Figure S1.



**Figure S3.** The effect of LED light conditions on the growth of *R. carthamoides* shoots. The results are means values  $\pm$  SE. There is no difference ( $p < 0.05$ ) among the means marked with the same letter. (a) % of buds compared to shoots; (b) hyperhydricity structures (%); (c) length of shoots (cm) and % of shoots of appropriate length. Abbreviations refer to the conditions of the conducted analysis, as indicated below Figure S1.