Supplementary material

The Impact of Clonal Micropropagation and Acclimatization Methods on the Productivity and Essential Oil Quality of Three *Mentha* Cultivars

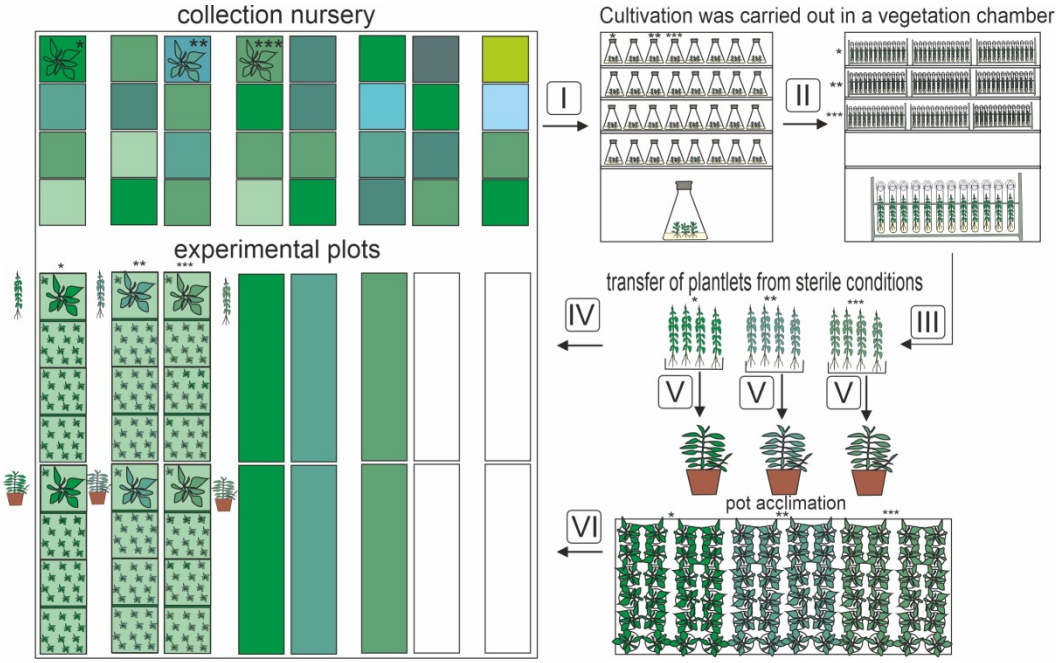

Figure S1. Methodology for assessing the productivity of three mint genotypes depending on the acclimatization protocol after clonal micropropagation to predict the yield of essential oil. Four replicates of 12 plants per 1 m² are used: 3 experimental plots and one spare plot (used to replace fallen plants). Stage designations: I – establishment of in vitro culture ((includes explant sterilization and cultivation); II – clonal micropropagation to obtain 96 plantlets of each genotype; III – extracting from sterile conditions; IV – planting plantlets in the field without the pre-acclimatization stage; V – planting plantlets in pots and growing them in a greenhouse for preliminary acclimatization (1 month); VI – transplanting plants from pots to field conditions after pre-acclimatization.

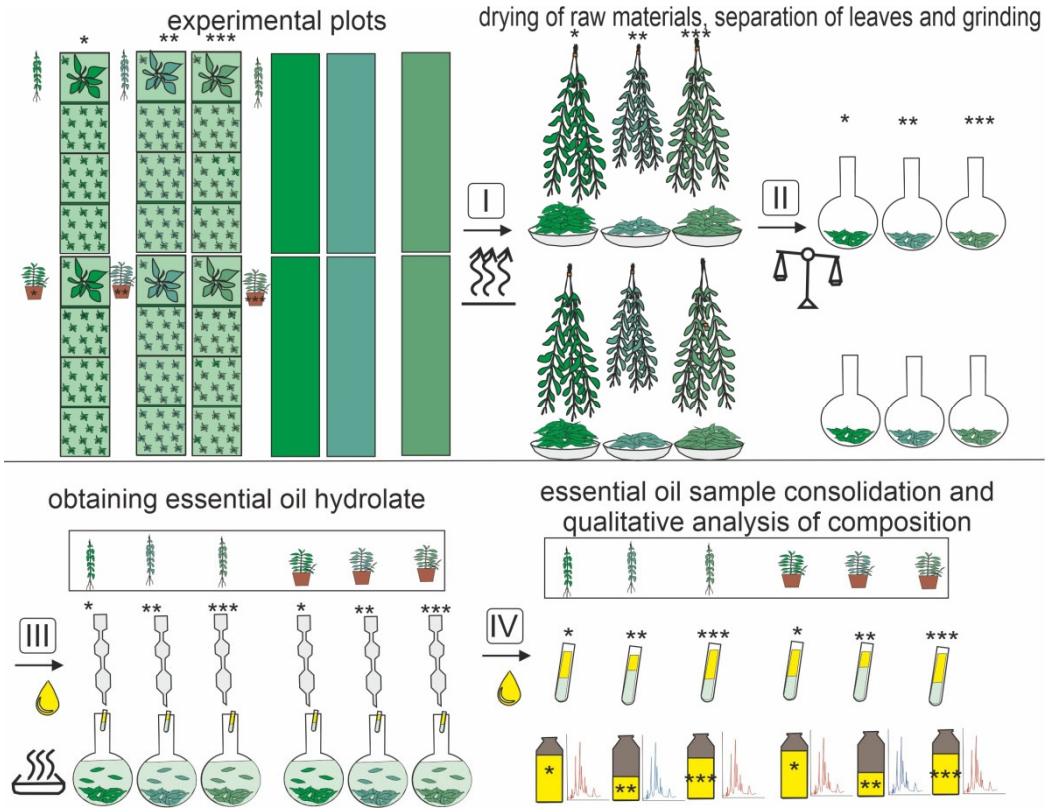

Figure S2. Growing plants in experimental plots until the budding stage, obtaining and processing raw materials with the subsequent production of hydrolate and essential oil. Designations: I – harvesting herbal raw materials with drying in a dark, dry, ventilated room at a temperature of 25-30 °C, separating leaves, flowers and buds from stems; II – mechanical grinding of raw materials to a fraction of 0.3-0.4 cm and distribution into flasks at the rate of 50 g per flask with a volume of 3 liters; III – boiling with sublimation of steam and capture of essential oil by condensation of hydrolate; IV – combining samples for storage and subsequent qualitative analysis.

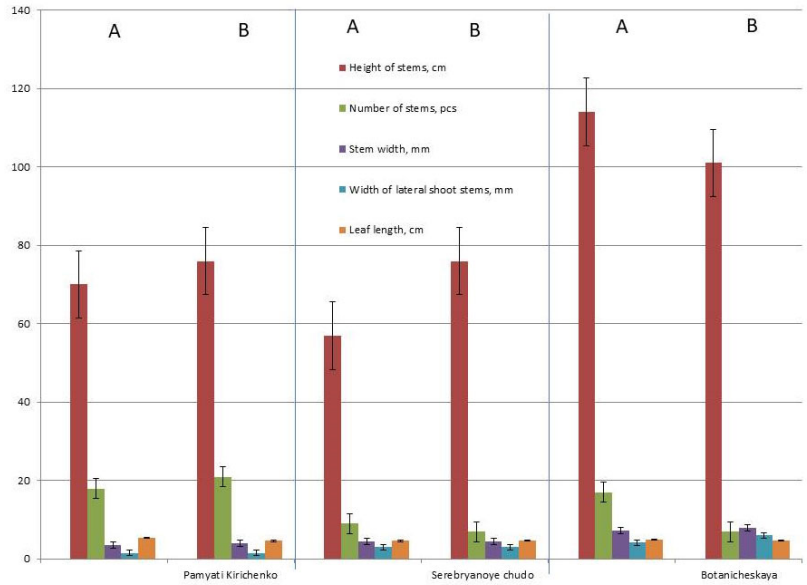

Figure S3: The effect of the acclimatization method of regenerated plantlets on phenotypic features of the morphology of aboveground organs of three mint cultivars title.

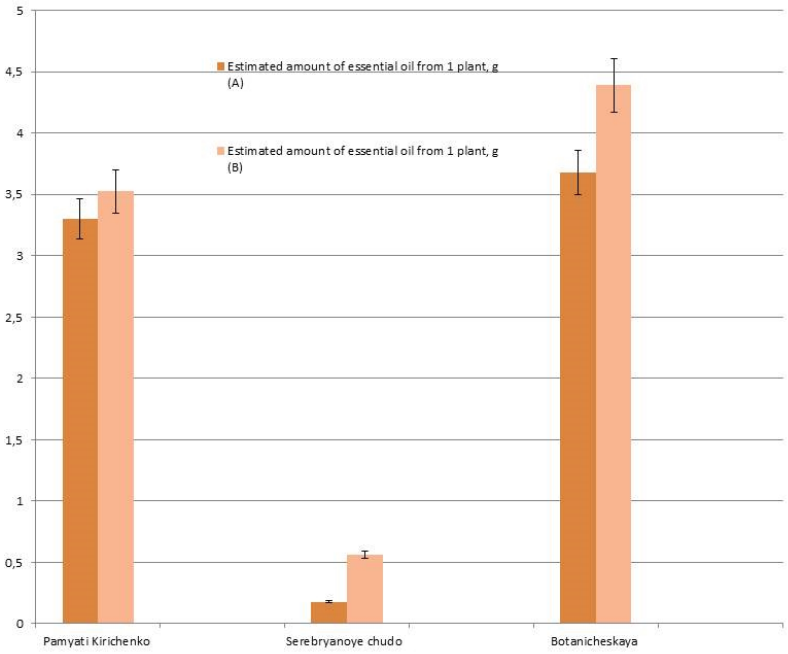

Figure S4: The effect of the method of acclimatization of regenerated plantlets on the production of green biomass in three mint cultivars.

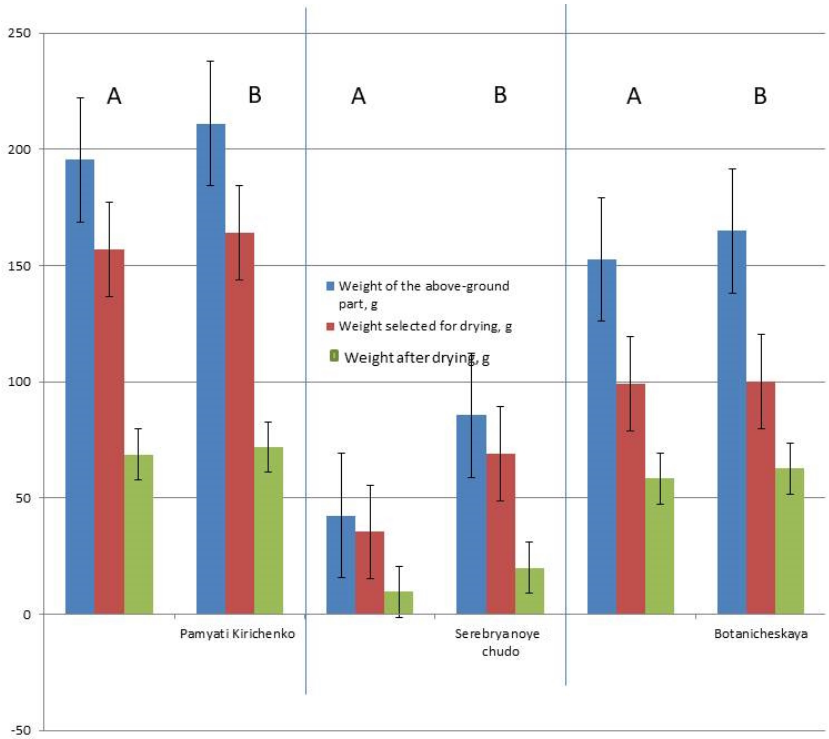

Figure S5: The effect of the acclimatization method of regenerated plants on the amount of essential oil obtained from one plant in three mint varieties.

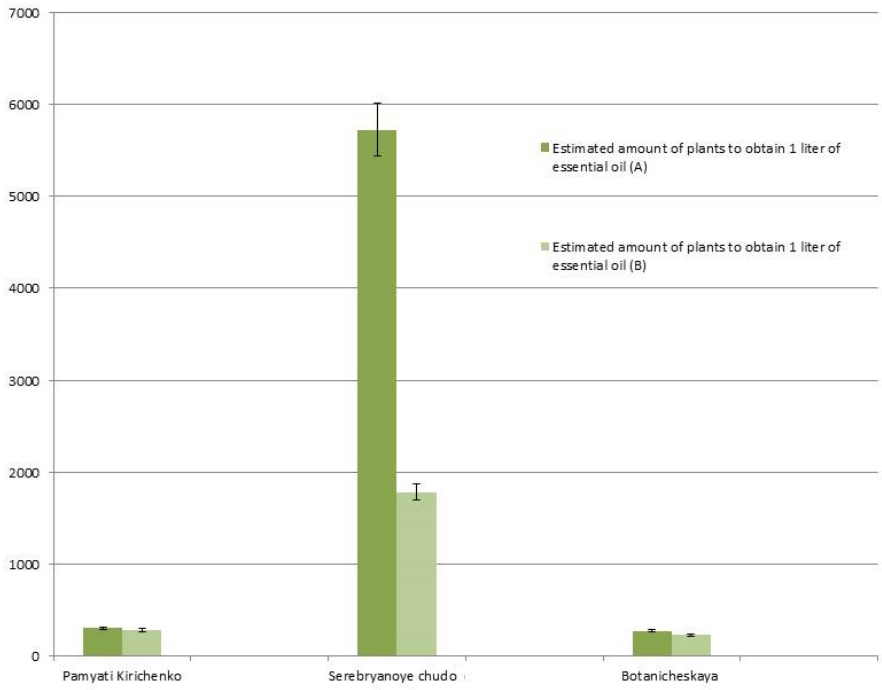

Figure S6: The effect of the acclimatization method of regenerated plants on the area required to obtain 1 L of essential oil.

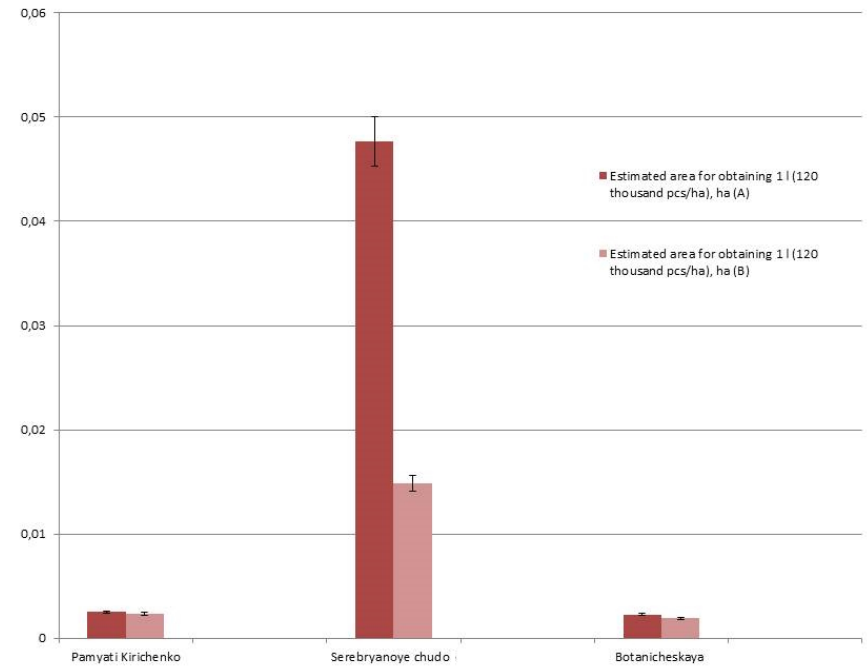

Figure S7: The effect of acclimatization method of in vitro regenerants on the number of plants required to produce 1 L of essential oil in three mint cultivars.