

### 3. גידולים חדשים

הגידול היחיד שנחקר במסגרת זו היה פתוח כמהת המדבר כגידול חדש בנגב. בימים אלה מתחיל מחקר רב תחומי בפיתוח קנאביס רפואי.

קיימות אפשרויות ליישום תוצאות המחקר ובחינת היתכנות בתנאים חצי מסחריים.

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1. מו"פ קטיף משרד המדע ישראל. 2. המכונים לחקר המדבר שדה בוקר 3. אוניברסיטת בן גוריון 4. מנהל המחקר החקלאי משרד החקלאות.

The overall goal of this research proposal was to generate scientific knowledge for establishment of desert truffles as new exotic crops for the Negev desert. In efforts to develop desert truffles in general as new crops for the Negev desert we also characterized two more spices with the potential to become crops *Phaengium Lefebvre* and *Tirmania nivea*. We determined the irrigation schedule based on lysimetric analysis in which we found that the plants consume 0.4 L/day. These data lead us to irrigation regime of bi-weekly irrigation of 3 L/plant week. We established a plot at Gilat center of plants and seeds derived plants that were collected from different eco-zones. Up until now, we could not identify outstanding plants with the desired phenotype of vertical shoot development, which should make truffle spotting easier. Following a published protocol we harvested the fruit bodies and stored them at 40C under moist for 1 week. Then the fruits were dried and kept at room temperature. Before using this method the inoculation rate of plants was about 70% and with this method we received almost 95% success. With this method, we were also able to reduce the level of the spore powder to 1/10 of the recommended level without reduction in inoculation level. To identify the chemoattractant secreted by the host plant *Helianthemum sessiliflorum* the growth media of the host was extracted and the extract was fractionated by revers phase C18 HPLC (Fig. 2). The detected peaks were identified by different methods including LC-MS, MS-MS, and HR-MS. The biologically active fraction as determined by a bioassay is F1. Our efforts to determine the chemical structure of the chemoattractant are still under the way. We also learned that the optimal planting distances between plants and rows should be 1X1 meter on flat area. This density allows the formation of hyphal net belowground that connect plants to support fruit formation. This hypothesis is currently tested in a new plot we established with two different planting methods at Ramat-Negev. The yield of the old plot increases steadily and this year was 3.6 kg/dunam in comparison to last year which was 2.6 kg. This clearly indicates that the potential for higher yields is within reach. We anticipate that

implementation of the novel knowledge we gained in the last years will significantly contribute to obtain higher yields in our new experimental plot.