

**ESSENTIAL OILS OF *A. FACTOROVSKYI*, *K. LINEARIS*, *C. ARVENSIS*, *P. BABYLONICA*, *P. CYANOCARPA*, *L. NUDICAULIS* AND *R. EPAPPOSUM***

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تعتبر الزيوت الطيارة من أهم المكونات الكيميائية المستخلصة من النباتات، واستمراراً لاهتمامنا بدراسة مكونات الزيوت الطيارة للنباتات المزهرة الموسمية التي تنمو في المملكة العربية السعودية فقد قمنا في هذا البحث بدراسة الزيوت الطيارة لسبعة نباتات تنتمي جميعها للعائلة المركبة علماً بأن معظم تلك النباتات تدرس لأول مرة.

The constituents of the essential oils of *A. factorovskyi*, *K. linearis*, *C. arvensis*, *P. babylonica*, *P. cyanocarpa*, *L. nudicaulis* and *R. epapposum*, all belonging to the family Compositae, are reported. The majority of these plants are studied herein for the first time.

## INTRODUCTION

The plants *Aaronsohnia factorovskyi*, *Koelpinia Linearis*, *Calendula arvensis*, *Picris babylonica*, *Picris cyanocarpa*, *Launaea nudicaulis* and *Rhanterium epapposum* are common plants that grow after the rainy season (between January and April) in the central region of Saudi Arabia [1]. Many of these plants have been reported to exhibit biological activities [2-5].

In continuation of our studies of the chemical constituents of plants grown in Saudi Arabia [6,7], we present here a detailed study of the essential oils of these plants which are being reported for the first time. All previous studies have been on the chemical constituents of some of these plants, such as, *K. linearis* [8-11], *C. arvensis* [12-16], *P. cyanocarpa* [17] and *L. nudicaulis* [18-21]. Furthermore, for a matter of comparison the essential oils of samples of *P. cyanocarpa* and *L. nudicaulis* collected from different places are reported.

## EXPERIMENTAL

The plant samples were collected from the central region of Saudi Arabia over the period of January to March 2001 and were identified at the Department of Botany herbarium, King Saud University, Riyadh. Samples of each plant (about

50 gm of fresh or dry plant material, stems, leaves and flowers) were subjected to steam distillation. The essential oil obtained in each case was analysed on Shimadzu QP 5050A GC/MS system using DB-1 glass column, 30 m length. The operating conditions were as follows: oven temp. 250 °C, temperature range 50-250 °C. The MS was operated with 0.1 L split 100:1 using EI mode. Each compound was identified by comparison with literature reports and by computer matching with standard spectra [22,23].

## RESULTS AND DISCUSSION

### *Aaronsohnia factorovskyi*:

This plant gave about 0.116% of the steam volatile oil which has a light yellow color. Thirteen components of this oil were identified through GC/MS analysis (Table 1). These components include monoterpenes, sesquiterpenes, long chain hydrocarbons and some fatty acids. The major component was 2,2-dimethyl-3-(E)-β-(2-methylallyl)cyclopropanecarboxylic acid (39.6%). The common terpenes present in this oil were isopulegol (1.87%), *p*-menth-8(10)en-9-ol (1.86%), 2-cyclohexan-1-ol-1-methyl-4(1-methyl-ethyl) (3.18%) and sesquiterpenes, caryophyllene oxide (2.23%), α-bisabolol (1.99%) and globulol (1.59%).

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