THE EFFECT OF GROWTH ACCELERATE HORMONE ON SEED DORMANCY AND QUALITATIVE AND QUANTITATIVE CHARACTERISTICS OF THE HERBAL BALNGO LALLEMANTIA ROYLEANA (WALL.) BTH

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One of the most important species of medicinal plants is Balngo (Lallemantia royleana) with Labiates family that with multiple properties, such as a heart tonic, analgesic, sedative, pain, bloating, constipation, cramps, abdominal approach, dry cough, diarrhea demo, fainting and madness, cooling, and asthma, because of mucilage has an important role in controlling reflux disease. The factorial experiment with two factors Masses (species, Shiraz, Mashhad and Isfahan) and acetylsalicylic acid (ASA) (zero, 10, 20, and 30 mM) in a completely randomized design (CRD) with 3 replications was conducted at the laboratory control of seed technology in Shahed University. The results showed that levels of acetylsalicylic acid (ASA) and Balngo masses had significantly (P ≤ 0.01) effects on normal and abnormal seedling, seeds germination percent, germination coefficient, root to shoot ratio (R/S), mean germination time (MGT) (P ≤ 0.05), weight indicators Vigor (P ≤ 0.05), fresh weight of seedlings, allometry coefficient, sensitivity indices, dry weight and proline and soluble sugar content. Masses of Shiraz and Mashhad with 30% and 20% germination percent had the highest germination response to treatment acetylsalicylic (ASA) acid respectively. Hormone concentrations with increasing negative effects of sleep on the germination index, but the rate of seed germination and seedling fresh weight increased. Based on test results, the local population of Isfahan and Shiraz in response to hormones was better than or prior (P ≤ 0.01). Acetylsalicylic acid level of 30 mM on population of Isfahan had the highest germination rate, proline and soluble sugar content. The study also showed the sensitivity of the dormant reaction components of balngo was broken by optimum Acetylsalicylic acid level and seedling growth.

DETERMINATION OF ARTEMISININ IN SOME OF IRANIAN ARTEMISIA SPECIES

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Artemisinin is a sesquiterpene lactone, which is the biologically active constituent that for the first time has been isolated from the aerial parts of Artemisia annua L. (Compositae). Depend on growing and ecological conditions, the amount of this secondary metabolite could be ranged 1.1-4.9% based on dried material in A. annua [1, 2]. Artemisin mainly is the base of drugs which are used in malaria and cancer therapy. This compound also has anti-fungus, anti-parasite and antimicrobial activities [3]. Thirty-four species of Artemisia are known to be represent in Iran which two of them (A. melanolepis and A. khorassanica) are indigenous [4]. These species are found in different regions of Iran, with desert and semi- desert climates. Based on our knowledge, so far a few of Iranian Artemisia species have been studied for the presence of artemisinin. In this work, we focused on the determination of artemisinin in the leaves of 8 Iranian species of Artemisia. Leaf samples were collected from wild plants in their natural habitats in different seasons. Leaves were dried in room temperature and artemisinin extraction was prepared by refluxing samples with ethanol. Ethanolic extracts were used for analysis by HPLC technique with UV detection. Based on our results, species of A. vulgaris (0.24± 0.004 g/100g dry weight) had the highest content of artemisinin, followed by A. dracunculus (0.14 ± 0.004 g/100g dry weight) and A. absinthium (0.1± 0.004 g/100g dry weight), while A. biennis with 0.01 ± 0.001 g/100g dry weight artemisinin showed the lowest content. In conclusion, among the Artemisia plants studied in the present work, A. vulgaris, A. dracunculus and A. absinthium with considerable contents of artemisinin, appear to be potential new sources of this valuable sesquiterpene compound.

References