7thNational Congress on Medicinal Plants
12-14th May 2018
Shiraz, Iran

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The Effect of Potassium Nitrate and Gibberellic Acid on Seed Germination of Fennel (*Foeniculum vulgare* Mill) Under Light and Darkness Conditions.

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Foeniculum vulgare Mill is a very famous and important medicinal plant in apiaceae family. This herbaceous plant contains useful phytochemical such as anethole, limonene, estragole, alpha-pinene, fenchone. The plant is used in pharmaceuticals and cosmetic industries. The plant has been used in traditional medicine systems from old time. It is used to improve disorders related to digestive, endocrine, reproductive, and respiratory systems. In general, seed germination of members of apiaceae family is low due to presence of some inhibitors in seed parts. The purpose of the study was to investigate effect of gibberellic acid (GA3) and potassium nitrate (KNO3) on germination of fennel seed in dark and light. Therefore, GA3 in four concentratins (0, 200, 400 and 600 mg/L) and kno3 in three concentrations as 0, 0.1 % and 0.3 % was applied on seeds and treated seeds were kept in dark or light in ambient room temperature. The experimental design was completely randomized design in three replications. The statistical analysis were done using SPSS software. At the end of the experiments germination was assessed using parameters including mean germination time, germination percentage, coefficient of velocity, time spread of germination, root length, shoot length and fresh and dry weight. The results revealed that highest and lowest germination percentage were belong to 0.3 % KNO3 and GA3 600 mg/L respectively both in dark condition. The fresh weight of shoot (147.73 mg) and root (47.17 mg) was most in 0.3 % KNO3 in dark and least in GA3 600 mg/L in light. The germination velocity was 29.53 for 0.1 % KNO3 under light which was the maximum rate. In general it can be concluded that KNO3 in concentration of 0.3 % was the most effective germination treatment.

Keywords: Gibberellic acid, Mean germination time, Germination percentage

References

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