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Allopathic Effects of Lavender Essential Oil on the Seed Germination and Seedling Development of Dent Corn (Zea mays indentata Sturt.)

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Medicinal and aromatic plant oils contain many components. Many of these components have allopathic effects on other living organisms. These components may have positive and negative effects on agricultural production. The development of new agricultural practices is very important for sustainable agriculture in order to reduce their disadvantages and benefit from their positive aspects. The lack of safe food, which has been shown to be one of the main causes of increasing health problems in recent years, may be reduced to some extent by studies of such natural compounds. In a sustainable agricultural production, reliable food, reliable water, the highest yield and quality are targeted by satisfying all the needs of the plants in the period from sowing to harvest from natural sources. Increasing and evolving technology is increasing research on the use of chemical preparations derived from naturally occurring plants. In this study, investigated the allopathic effects of lavender essential oil on the seed germination and seedling development of dent corn. For this purpose, lavender essential oil was added to each petri dish at different doses [control (0), 2, 4, 6 and 8 ?L/9 cm diameter petri dish]. At the end of 11th day, the effects of bio-chemicals on the germination ratio loss, seedling dry weight, relative humidity of seedling, root length, seedling length, and seedling wet weight were measured and calculated. As results of variance analysis essential oil treatment of lavender has a significantly affect across of control treatment ($p<0.05$) on all investigated characters. Germination ratio loss and seedling dry weight increased with increase of essential oil dose. Relative humidity, root length, seedling length and seedling wet weight decreased with increase of essential oil dose. In conclusion, it was found that lavender residues of corn plant can tolerate up to a certain content of essential oil. It can be said that there is no harm in applying lavender residues to the corn fields since the essential oil contains a very small amount of essential oil. As a result of this research, it was necessary to examine the possibilities of lavender wastes to be given to the soil with different applications.

Keywords: Lavender, Corn, Germination, Allopathic Affect, Seedling Development

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