



ISSN Print: 2664-9926
ISSN Online: 2664-9934
NAAS Rating: 4.82
IJBS 2025; 7(6): 151-152
www.biologyjournal.net
Received: 18-03-2025
Accepted: 20-04-2025

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Effect of fermented Wild Plant Leaf Extract on Seed Germination and Growth of Okra (*Abelmoschus esculentus*. (L.) Moench

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DOI: <https://www.doi.org/10.33545/26649926.2025.v7.i6c.368>

Abstract

Eight different wild plant leaves (Neem - *Azardirachta indica*, *Ricinus communis*, *Annona squamosa*, *Pongamia pinnata*, *Datura innoxia*, *Carica papaya*, *Nerium olender*, *Lantana camara*) were collected and brought to the laboratory and washed with distilled water, blought to dry and 100 gram of each selected wild plant leaves were taken along with 1 K.G. Cow dung and 1 litre Cow Urine all these kept for fermentation in a vial for 30 days. After fermentation the filtrate was collected and various concentrations with distilled water were made (20%, 40%, 60%, 80%, 100% and control). The Okara seeds were soaked in these concentrations separately for overnight on next day the seeds were taken out washed with distilled water and placed on germination paper for further study. The germination count and seedling growth were recorded (R.L. Agerwal 1976).

Keywords: Wild plant leaves, Fermented, Okara, germination etc.

Introduction

Organic agricultural practices are becoming more popular because of consumers interested in and demand for safer agricultural products. Medicinal plant are rich in secondary metabolites, alkaloid, glycosides, steroid, etc., are the secondary metabolites found in medicinal plants. These plants synthesis hundred of chemical that have allelopathic, insecticidal, antifungal, antimicrobial and antioxidant properties. All these chemical properties help to increase seed germination, plant growth and development also help defend insect, pest and diseases etc.

Okra is one of the most widely known and utilized species of the family Malvaceae. Okra seeds are sown in early spring season, they show poor germination due to low temperature. High quality protein can be found okra seeds because it has a higher concentration of essential amino acid. Okra fruit also contains some of the antioxidant flavonoid like carotene, xanthin and lutein. Okra fruit is a rich source of iodine.

Therefore efforts were made to find out efficient formulation of wild plant leaf extract to enhance the percent seed germination and seedling growth in Okra.

Materials and Methods

Eight different wild plant leaves (Neem - *Azardirachta indica*, *Ricinus communis*, *Annona squamosa*, *Pongamia pinnata*, *Datura innoxia*, *Carica papaya*, *Nerium olender*, *Lantana camara*) were collected and brought to the laboratory and washed with distilled water, blought to dry and 100 gram of each selected wild plant leaves were taken along with 1 K.G. Cow dung and 1 litre Cow Urine all these kept for fermentation in a vial for 30 days. After fermentation the filtrate was collected and various concentrations with distilled water were made (20%, 40%, 60%, 80%, 100% and control). The Okara seeds were soaked in these concentrations separately for overnight on next day the seeds were taken out washed with distilled water and placed on germination paper for further study. The germination count and seedling growth were recorded.

Results and Discussion

Table 1: Effect of fermented Wild Plant Leaf Extract on Seed germination of Okra after 4 Days

Extract concentration (%)	No. of seed placed for germination	No. of seed germinated	Germination percentage (%)
20	10	6	60
40	10	7	70
60	10	8	80
80	10	8	80
100	10	9	90
Control	10	6	60

From the result tabulated in table no.1 it was proved that 90% seed germination observed in 100% conc. followed by 80% seed germination in 60% and 80% conc.

Table 2: Effect of fermented Wild Plant Leaf Extract on Seedling growth of Okra after 7 days

Sr. No.	Extract concentration (%)	Seedling growth (cm)
1	20	6.5
2	40	6
3	60	7
4	80	7.5
5	100	8
6	Control	7

From the result tabulated in table no.2 it was proved that highest seedling growth (8 cm) observed in 100% conc. followed by 80 % conc. (7.5 cm.)

Table 3: Effect of fermented Wild Plant Leaf Extract on Seedling growth of Okra after 21 Days

Extract concentration (%)	Root length (cm)	Shoot length (cm)	Length (cm)
20	18	19	37
40	20	20	40
60	23	18	40
80	22	21	43
100	24	23	46
Control	22	18	40

From the result tabulated in table no.3 it was proved that highest root length (24 cm) and shoot length (23) were observed in 100% conc. followed by 80 % conc.(root length (22 cm) and shoot length (21cm)

Conclusion

From the present investigation it was proved that fermented Wild Plant Leaf Extract 100% and 80% extract conc. was proved satisfactory to enhance % seed germination and plant seedling growth of Okra

References

- Ahmed SA, Messiha NK, El-Masry RR, El-Rokick KG. Allelopathic potentiality of the leaf powder of *Morus alba* and *Vitis vinifera* on the growth and propagative capacity of purple nutsedge (*Cyperus rotundus* L.) and maize (*Zea mays* L.). J Appl Sci Res. 2012;8(8):4744-51.
- Ameena M, Geethakumari VL, George S. Allelopathic effect of root exudates of purple nutsedge (*Cyperus rotundus* L.) on growth of field crops. J Crop Weed. 2015;11(Special Issue):142-5.

- Antony S, Benny PJ. Allelopathic effect of *Flacourtia inermis* on seed germination of selected crop plants found in India. Int J Adv Sci Eng Technol. 2016;4:59-61.
- Babu GP, Hooda V. Allelopathic effects of *Cyperus rotundus* L. and *Cynodon dactylon* L. on germination and growth responses of lettuce (*Lactuca sativa*). Int Conf Agric For. 2016;2:47-50.
- Jose PMP, Santos BM, Stall WM. Effect of increasing purple nutsedge (*Cyperus rotundus* L.) densities on cilantro (*Coriandrum sativum*) yield. Proc Fla State Hort Soc. 1997;110:318-20.
- Kandro MN, Memon HR, Mahmood L, Baloch AW, Ansari MA. Allelopathic impact of sorghum and sunflower on germinability and seedling growth of cotton (*Gossypium hirsutum* L.). J Basic Appl Sci. 2016;12:98-102.
- Kowthar GE, El-Din SAA, Sharara FAA. Allelopathic behaviour of *Cyperus rotundus* L. on both *Corchorus olitorius* (broad-leaved weed) and *Echinochloa crus-galli* (grassy weed) associated with soybean. J Plant Prot Res. 2010;50(3):274-9.
- Kumar L, Varshney JG. Allelopathic effect of sesame root exudates against purple nutsedge. Indian J Weed Sci. 2008;40(1-2):32-6.