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# SCREENING OF ANTIOXIDANT PROPERTY PRESENT IN *MORINGA OLEIFERA* SEEDS.

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## ABSTRACT

*Moringa oleifera* considered to be a "Miracle tree" and "Tree of life" by many due to the substantial beneficial effects that it has on health, nutrition, water sanitation and the environment. Antioxidants both are natural and man-made substance that protects our cell from free radical. In present investigation we try to find out the antioxidant property of ethanol and water extract of *M.oleifera* by using DPPH as a free radical scavenger and colorimeter. For that seeds were collected from the *M.oleifera* pods and shed dried. From this study we found that the *Moringa oleifera* has good antioxidant property.

**Keywords** :- *Moringa oleifera*, Antioxidant property, DPPH.

## INTRODUCTION

*Moringa* oleifera is the most extensively distributed species of the monogeneric family i.e. M. oleiferaceae that includes 13 species of trees and shrubs distributed insub-Himalayan ranges of India, Sri Lanka, North Eastern and South Western Africa and Madagascar[1]. It is generally known in colorful Indian languages and in numerous regions as Sajina (Bengali); Horseradish tree, forelimb tree (English); Sahinjan, (Hindi); Murinna, (Malyalam); Sevaga (Marathi); Sobhanjana, (Sanskrit) and Sehjan (Urdu)[2] . The Moringa plant wild and cultivated throughout the plains and thrives stylish in tropical climates, and is abundant near the flaxen beds of gutters and aqueducts. Considered to be a " Phenomenon tree" and " Tree of life" by numerous due to the substantial salutary goods that it has on health, nutrition, water sanitation and the terrain ,M. oleifera has shown its diversity and eventuality as a precious reality in numerous ways. It has a multi hand of uses in drug in colorful corridor of the world. Traditional folk remedies define an infusion of the leaves to treat conjunctivitis and as a cataplasm on the tummy to expel intestinal worms. The fresh leaves of M. oleifera are salutary for pregnant and lactating maters as they ameliorate milk product and are prescribed for anemia[3].

The leaf juice is used to stabilize blood pressure and control glucose levels in diabetic patients. The roots, leaves and flowers of *M. oleifera* are used in traditional medicine for the treatment of diarrhea and hypertension in many countries [4]. *Moringa oleifera* preparations have also been cited in scientific literature

as having a broad range of pharmacological activities; antimicrobial, hypotensive, hypoglycemic, immunomodulatory and antiinflammatory activities. For example, the seeds possess significant antimicrobial activity against *Staphylococcus aureus* and *Pseudomonas aeruginosa* [5].

*M. oleifera* contains various phytochemicals, viz. carotenoids, vitamins, minerals, amino acids, sterols, glycosides, alkaloids, flavonoids and phenolics [6]. Leaves of *M. oleifera* have been reported to regulate thyroid status and possess radioprotective and antitumor activities [7,8]. Pod showed hypotensive and chemomodulatory effects. Whereas seeds have been reported for coagulative, antimicrobial and antitumor activity [9, 10]. Extracts from *M. oleifera* roots and flowers were found to have a significant hepatoprotective effect. Roots, leaves, flowers, gum and the aqueous infusion of seeds also have been found to possess diuretic activity [11, 12].

Its drought resistance properties, i.e., water-logging of roots, make this plant grow well in drier regions. *Moringa* plants can grow on different soil types, but well-drained loamy and sandy soil with a pH of 5–9 is best suited for its growth [13]. *Moringa oleifera* is viewed as a most valuable plant because all parts can be utilized for food, medication, and other industrial and household purposes [14, 15].

## MATERIALS AND METHODS

### Collection and preparation of sample.

Seeds were collected from *Moringa oleifera* pods and shed dry. After drying the seeds they are grind and made into coarse powder. The powder is then kept in air tight container and stored in a dry place.

### Antioxidant activity of *Moringa oleifera*[16,17]

The antioxidant activity of water and ethanol extract from seeds of *Moringa oleifera* was assessed on the basis of the radical scavenging effect of the stable 1-diphenyl-2-picrylhydrzyl.

The diluted working solutions of the extracts were prepared in water and ethanol.

0.002% of DPPH was prepared in ethanol and 2 ml of this solution was mixed with 2 ml of sample solution. These solutions were kept in dark for 30 min and optical density was measured at 517 nm using colorimeter.

Ethanol (1 ml) with DPPH solution (0.002%, 1 ml) was used as blank. The optical density was recorded and %AA inhibition was calculated using the formula given below

% inhibition of DPPH (%AA) = A-B/A x 100

Where,

A=optical density of the blank.

B=optical density of the sample.

The stock solution 1 mg/ml of ethanol was prepared. The required dilutions 0.1 mg/ml to 1 mg/ml were prepared by appropriate dilution. The O.D and percent antioxidant activity was calculated and reported in table.

Table 1: Optical density and percent antioxidant activity for water extract of seeds of *M.oleifera.*

O.D of blank DPPH=0.67.

| **Conc.mg/ml** | **0.1** | **0.2** | **0.3** | **0.4** | **0.5** | **0.6** | **0.7** | **0.8** | **0.9** | **1.0** |
|---|---|---|---|---|---|---|---|---|---|---|
| **O.D of sample** | **0.27** | **0.26** | **0.26** | **0.25** | **0.24** | **0.24** | **0.23** | **0.22** | **0.19** | **0.16** |
| **%AA** | **59.7%** | **61.1%** | **61.1%** | **62.6%** | **64.1%** | **64.1%** | **65.6%** | **67.1%** | **71.6%** | **76.1%** |

**Decrease in O.D of sample with increase in concentration of extract**

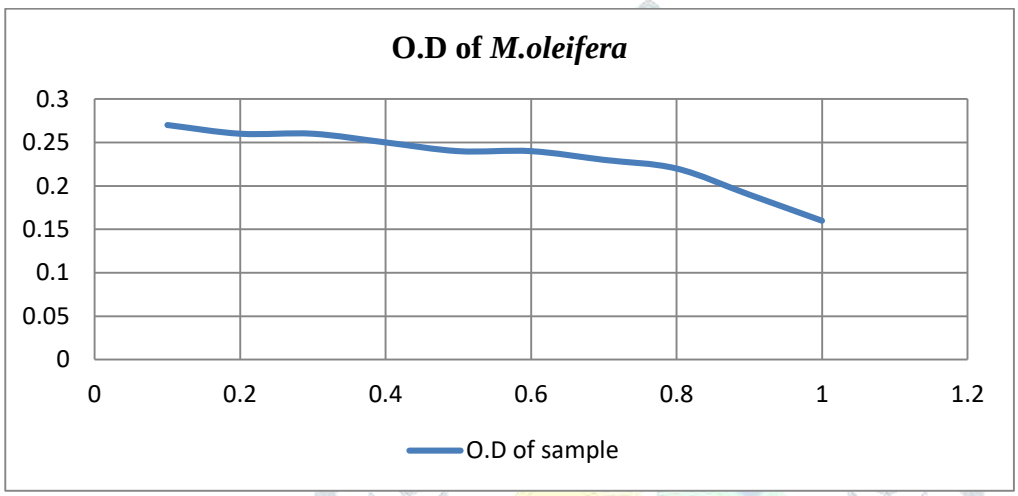


**Fig. 1 Concentration of *M.oleifera* vs Optical density**

**Increase in percent antioxidant activity with increase in concentration of extract**

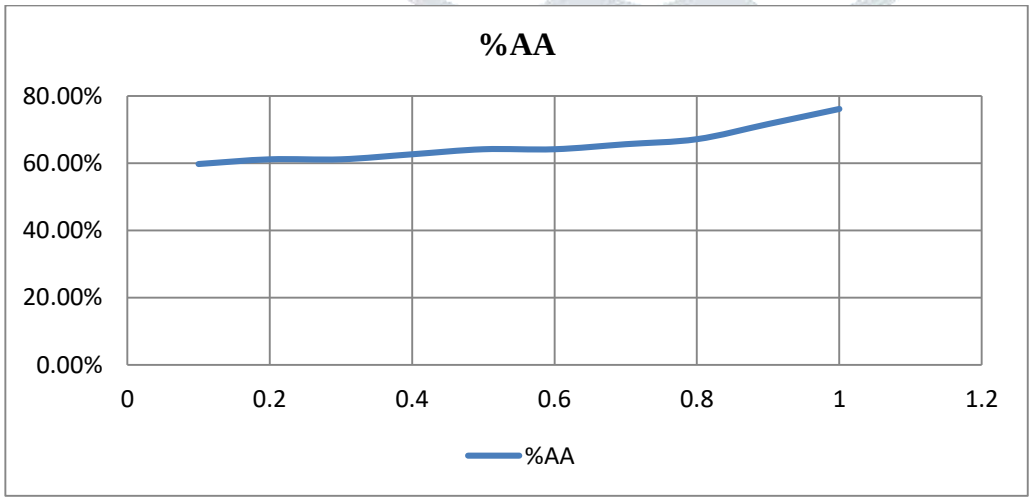


**Fig. 2 Concentration of *M.oleifera* vs %AA**

Calculation of $IC_{50}$ value for *M.oleifera* seed water extract = max -1/2 (max-min)

= 76.1- 1/2(76.1-59.7)

= 76.1- 8.2

= 67.9

$IC_{50}$ value corresponding to *M.oleifera* seed water extract is 0.8 mg/ml.

Table 2: Optical density and percent antioxidant activity of ethanol extract of seeds of *M.oleifera.*

O.D of blank DPPH=0.66

| **Conc.mg/ml** | **0.1** | **0.2** | **0.3** | **0.4** | **0.5** | **0.6** | **0.7** | **0.8** | **0.9** | **1** |
|---|---|---|---|---|---|---|---|---|---|---|
| **O.D of sample** | **0.59** | **0.43** | **0.39** | **0.33** | **0.27** | **0.2** | **0.18** | **0.12** | **0.07** | **0.05** |
| **%AA** | **10.6%** | **34.8%** | **40.9%** | **50%** | **59%** | **69.6%** | **72.7%** | **81.8%** | **89.3%** | **92.4%** |

**Decrease in O.D of sample with increase in concentration of extract.**

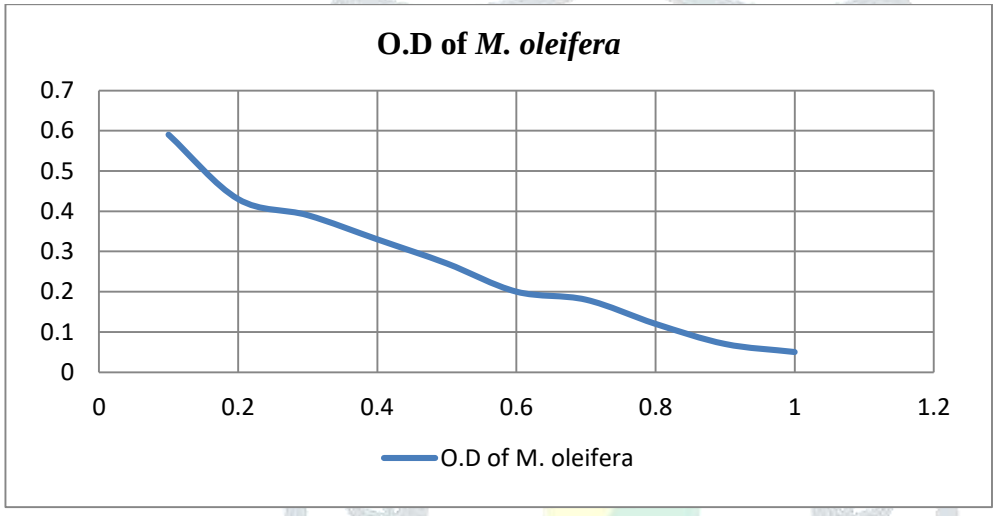


**Fig. 3 Concentration of *M.oleifera* vs Optical density**

**Increase in percent antioxidant activity with increase in concentration of extract.**

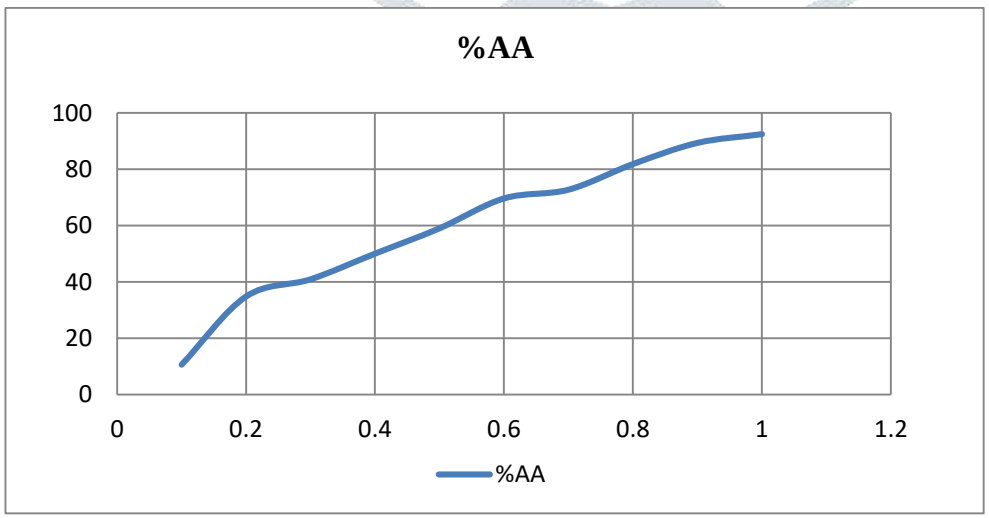


**Fig. 4 Concentration of *M.oleifera* vs %AA**

Calculation of $IC_{50}$ value for *M.oleifera* seed ethanol extract = max -1/2 (max-min)

= 92.4 -1/2 (92.4-10.6)

= 92.4 - 40.9

= 51.5

$IC_{50}$ value corresponding to *M.oleifera* seed ethanol extract is 0.4 mg/ml.

## CONCLUSION

The results obtainted for the antioxidant assay by DPPH for water and ethanol extract of seeds of *Moringa oleifera* plant were reported. The remarkable decrease in O.D value of the test plant samples were observed from the graph, showed antioxidant activity. The $IC_{50}$ value for water and ethanol extract of seeds of *Moringa oleifera* plant were found to be 0.8 and 0.4 mg/ml respectively.

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