

QUANTITATIVE ASSAY OF SOME PIGMENTS FROM GARDENIA GUMMIFERA (L.)

Girish C. Kamble¹, K. D. Jadhao²

¹.SRRL Science College, Morshi, Dist- Amravati.MS, India

². P.G. Department of Botany, Govt. Institute of Science, Nagpur, India

Abstract

The plant originated natural product, biomolecules etc has captured considerable attention. The research about medicinal plant has been accelerated during last two decades. The use of natural plants remedies has attained a significant place. The pigments are plant natural products which derived as a result of plant metabolism. The extensive exploration and screening of the pigments derived from the medicinal plant has been enhanced across the world. Gardenia gummifera (L.) is belonging to the family Rubiaceae known for its significant medicinal properties. The present study is associated with the screening of pigments from leaves of Gardenia gummifera (L.) by using spectrophotometer. The study reflected that the species contain Anthocyanine, Leucoanthocyanine, Lycopene,. The quantitative assay of Present study showed that, this plant is good source of chemo-diversity & may be used to isolate the therapeutic drug for the pharmaceutical industries.

Keyword: Gardenia gummifera, Quantitative assay, Spectrophotometry. Pigments.

1.INTRODUCTION

The metabolic activities generates the the free radical and reactive oxygen species in human body which damage the bio molecule[2]. Plants contain a various molecules and metabolites as phenolic compounds, phenolic acids, flavonoids, quinones, tannins, nitrogen compounds (alkaloids amines, betalains),vitamins, terpenoids carotenoids [1,5] showing antioxidant activity. The medicinal plants are natural source of antioxidants. The wide spectrum of pigments has been

reported as antioxidant activity. The various pigments present in the plant species shows the potential towards the scavenging activity relative to antioxidant property. The present study has been carried out spectrophotometric quantitative estimation of pigments Lycopene Anthocyanin Leuco-anthocyanin from Gardenia gummifera L. The genus belongs to family Rubiaceae and systematic classification as under-
Classification:

Kingdom : Plantae

Division : Magnoliophyta

Class :Magnoliopsida

Order : Gentianales

Family : Rubiaceae

Genus :Gardenia

Species :gummifera

2. MATERIAL AND METHOD

Collection and Identification of Plant material

The collection of plant is done from college campus. Plant identification was carried out with the help of standard floras (Ugemuge,1986).

Preparation of samples

Fresh leaves were collected and after that crushed with mortal and pestle, 1gm of sample was taken for spectrophotometric quantification of the pigments.

2.1. Methods

Estimation of Lycopenes, Anthocyanine, Leucoanthocyanine were executed as per the methods prescribed by [3].

A standard graph was plotted by taking concentration along X- axis and the corresponding values of absorbance along Y- axis resulting a straight line which passes through the origin and maximum points of standard reading. The compound present in an

unknown sample was subjected to spectrophotometer and quantification of compound could be estimated with corresponding absorbance value against the standard graph.[3]

3. RESULT AND CONCLUSION

Pigments like Anthocyanin, Leuco-anthocyanin and Lycopene are present in sufficient amount. The quantitative assay of the pigment is depicted in the table 1.

3.1. Conclusion

This study reveals that the leaves of *Gardenia gummifera* L. contain Lycopene, Anthocyanine, Leucoanthocyanine, which are known to possess good source of antioxidant activity and anti-inflammatory activity.

The Extensive medicinal use of *Gardenia gummifera* placed it as rare species therefore, hence conservation is important. The study shows that leaves contain good source of antioxidants.

The use of natural antioxidants could be encouraged because of the concerns on the safety against synthetic drugs.

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Sr. No	Name Of Pigments	Weight of Sample	Total volume of extract	Volume of extract taken for analysis	Absorbance at	ug/g
1	Lycopene	1 gm	40 ml	40 ml	0.154 At 530nm	4.805
2	Anthocyanin	1 gm	10 ml	1 ml	0.342 At 525	84.4
3	Leuco-anthocyanin	1 gm	10 ml	10 ml	0.149 At 550nm	4.805

Table 1- Quantitative assay of the pigments derived from *Gardenia gummifera* L