

# The Impact Of Farm Yard Manure (FYM) On Plant Pigment Of Women Friendly Medicinal Plant Fenugreek By Paper Chrometography

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Without doubt one of most interesting and complex problems facing man today is the unraveling of the mysteries of photosynthesis. The chemical energy of the photosynthesis is the unique property of plants. Plants are of the five big groups living things. The whole plant is the largest source of natural herbal medicinal. The Indian medicinal plants and their product also account of export in the range of the Rs 10 million. If raise a need of studies in medicinal plant as this is involved in maintain traditional therapies and also it leads to economical support to the country. In this research paper, the women friendly plant Fenugreek is subjugated treatment during growth of plant and later on the plant pigments were separated using paper chromatography. The Rf value were noted down and compared with control plant value significantly indicates the effect of Farm yard manure (FYM) on the Fenugreek (*Trigonella foenum graecum*) plant pigment.

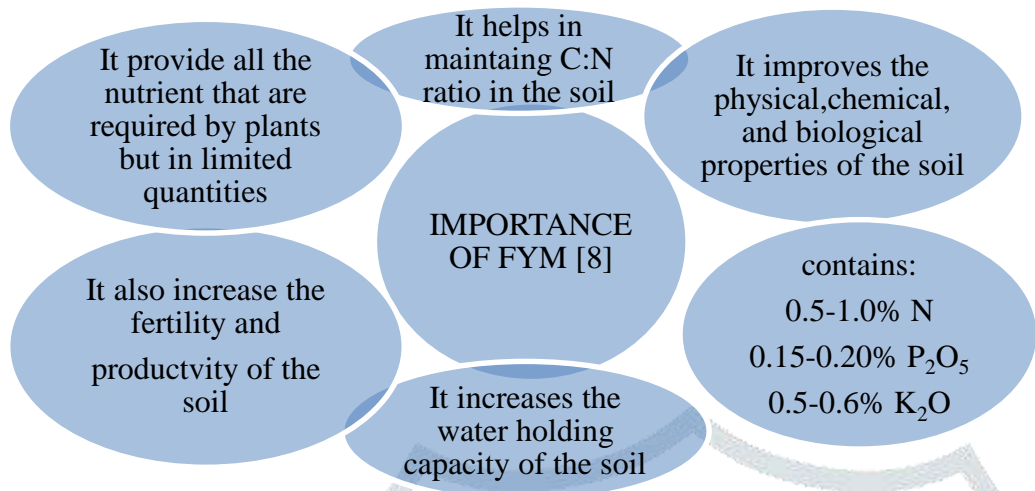
**Keyword:** Medicinal plants, Farm yard Manure plant pigments, paper chromatography.

## INTRODUCTION

The world health organization estimates without reliable data that some 80% of world's population depends mainly on traditional medicine (including but limited to plants) perhaps some two million people are largely reliant on medicinal plants.[1].Medicinal plants are used in non industrialized societies mainly because they are readily available and cheaper than modern medicine. The annual global export value of 50,000 to 70,000 plants with suspected medicinal properties was estimated to be US\$ 2.2 billion in 2012. [2] and in 2017 the potential global market for botanical extracts and medicines were estimated at several hundred billion dollars.[3]Plants, including many now used us ordinary herb and spices have been used as medicine not necessarily from prehistoric times spices have been used partly to counter food spoilage bacteria especially in hot climates.[4]From ancient times to the present ayurvedic medicine as documented in the atharvaveda the Rugved and the sushrata samhita has used hundred has used hundred of pharmacologically active herbs and spices. Such as a turmeric which contain curcumin. [5]

The use of synthetic nitrogen fertilizers has increased steadily in the last 50 years rising almost 20 fold to the current rate of 100 million tonnes of nitrogen per year. [6]. The use of phosphate fertilizers has also increased from 9 million tonnes per year in 2000. Organic fertilizers include naturally occurring organic materials like manure worm castings compost seaweed, guano or naturally occurring mineral deposits. Organic fertilizers have been known to improve biodiversity and long term productivity of soil [7]. Farmers of India traditionally use farm yard manure to maintain and increase the soil fertility for greater crop production. There is various benefit of organic manure (FYM) and for analyzing that I am going to conduct experiment research work out the effect of fertilizers on the plant pigments.

# IMPORTANCE OF FARM YARD MANURE (FYM) AND APPLICATION OF WOMEN'S FRIENDLY MEDICINAL PLANT



*Trigonella foenum graecum*

**Distription:**An annual herb reaching a height of about 0.9 m leaves light green ,pinnately trifoliolate laefletobavate flower papilionaceous, small white fruit legume long narrow curved tapering with a slender point and containing small deeply furrowed seeds [9]

Nutrition value (per 100g)

\*Energy-205KJ (49K Cal)

\*Carbohydrates-6.9

\*Fat-0.99

\*Protein-4.49

\*Minerals-

\*Calcium-395mg(40)\*phosphorus-51mg(7%)

\*Iron-193(mg)15% \*other water: 88.7g[10]

**Importance of plant for women's disease**

\*Fenugreek tea- relief from the menopausal increase milk supply in lactating women.

\*The estrogen like property which balances the sexhormones breast enlargement and also treatment of various skin problem.& It helps prevent black heads pimples.wrinkles etc.

\*Fenugreek lower heart diseases and strokes risks sugarlevel

\*Fenugreek has been in use for centuries for various female conditions brain & Nervous system problems skin liver metabolic disorders. It is also beneficial for respiratory and gastrointestinal problems.

\*Fenugreek diabetes can control both glucose & cholesterol level in the blood additionally nourishes digestive system liver and promotes respiratory health.[11]

## MATIRIAL AND METHOD

### COLLECTION OF MATIRIAL:

The whole experiment was framed into two parts and conducted in Botany lab garden. The seeds were procured from the local certified seed supplier located in Bilimora, Navsari.

**EXPERIMENT DESIGNING**

Two medium size plastic flat pot were filled with equal amount of (2k.g) soil from farm. Seed were sown in pre labeled pot which one subjected for treatment with F.Y.M and other one pot was also controlled for comparison to receive only water. The pot plants were watered enough to keep them moist later on these plants samples were collected for the plant pigment separation by using paper chromatography technique. The plant of choice was Trigonella foenum graecum "Fenu greek" as it possesses lot of medicinal value for women's diseases.

	
<p>Treatment and Control plant</p>	<p>Growth of plant</p>
	
<p>Growth of leaf</p>	<p>Collection of leaf</p>
	
<p>Analysis of plant pigment</p>	

**RESULT**

**AND**

**DISCUSSION:**

The samples run down for paper chromatography, showed various differences in height and pigments visualizing comparing with control plant pigment

Parameter	C	T	%I	Rf value		% I of Rf
				C	T	
Chlorophyll-a	5.1±0.3	7.5±0.2	32%	5.1/10.2=0.5	7.5/11.2=0.66	24.2%
Chlorophyll-b	2.5±0.2	3.3±0.1	24%	2.5/10.2=0.24	3.3/11.2=0.29	17.2%

C = Controlled plant T= Treated plant %I= percent of Increase

Rf value of= The distance travelled by the pigment

The distance travelled by the solvent

The concentration of chlorophyll-a in the leaves of *Trigonella foenum graecum* "*Fenu greek*" at polluted site was recorded as  $7.5 \pm 0.2$  which was at the control site was  $5.1 \pm 0.3$ . Thus a increase of 32 % in chlorophyll-a was recorded in the samples from the treated of FYM plants sites in comparison to control. The Rf value was chlorophyll a content was  $0.5 \pm 0.02$  and  $0.66 \pm 0.03$  in the leave sample collected from control site and treated site respectively thus, this was a increase of 24.2% in the content in the sample from treated of FYM plant sites. The concentration of chlorophyll-b was  $2.5 \pm 0.2$  in the leaves samples collected from control sites plants while it was  $3.3 \pm 0.1$  in the sample thus from treated of FYM plant site thus the increase of more chlorophyll -b 24% content. The Rf value was chlorophyll b content was  $0.24 \pm 0.02$  and  $0.29 \pm 0.03$  in the leave sample collected from control site and treated of FYM plant site thus this was of 17.2% in the content in the sample from treated of FYM plant site.

Agriculture is the most important of Indian people most of i.e. 65% population is still depend on agriculture. It has great power to change the economic and social condition of the nation [12] Carbon present in soil in the form of organic matter. The organic materials most commonly used to improve soil conditions and fertility include farm yard manure. For all organic matter, atmospheric carbon dioxide serves as the main source of carbon dioxide is converted to organic carbon largely by the action of photoautotrophic organisms. The higher green plant on land carbon is being contentiously fixed into organic form through the process of photosynthesis one once bound. So, organic manure provides all the nutrients that are repaired by plants but in limited quantities, it helps in maintaining C: N ratio in the soil and also increase the fertility and productivity of the soil. It improves the physical chemical and biological properties of the soil. [13]

## CONCLUSION

Fertilizers has numerous impacts in the plants and as well as in the environmental simultaneously. It gives support to the plants for building its metabolism up to some of its natural and valuable elements unknowingly, soil still those metabolisms are to analyze and developed to bring awareness in people about the usage of fertilizers for the growth of plants. The good growth observed under these experiment conditions when only FYM was used confirmed the "*Fenu greek*" plant ability to use the nutrient available in manure.

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