



VITAMIN "C" CONTENT IN FRUITS AND PHARMACEUTICAL SAMPLE

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ABSTRACT Vitamins are organic substance that must be supplied to permit proportionate growth in living being for maintaining of the structure. Plants synthesize nearly all the vitamins but most of them cannot be synthesized by our body, our diet like milk vegetables fruits etc. Lack of vitamin "C" results in certain diseases like "Scurvy". In this research work vitamin "C" in natural fruits and pharmaceutical substances were determined.

KEYWORDS : Vitamin "C", Fruits, Tablet .

INTRODUCTION

Vitamins are organic compound which must be supplied in small amount in diet to maintain a normal health growth and nutrition. Multiple deficiencies caused by lack of more than one vitamins is known as Avitaminosis.

Vitamins are classified on the basis of solubility in fats and water. Vitamin "C" is soluble in water, the sources of vitamin "C" is tomatoes, orange and sweet lime. The lack of vitamin "C" causes the disease known as Scurvy. When lack in the amount of vitamin "C", the metabolism of amino acid is affected in joint bone and teeth.

So in diet we should use vitamin "C" sources food. We know all the vitamins cannot be synthesized in our body, the food which fulfill the vitamin "C" like grapes, vegetables, cabbage and onion should be used in our daily food as a good source of vitamin [1].

We know that vitamins perform specific biological function. The name of vitamin was given in the beginning use of their vital function and basic nature (nitrogen). Later it was found that some vitamins do not contain amino acid group hence the name vitamin was modified to vitamins. Vitamin "C" is biological active compounds. They are needed for their co-enzyme activity. Vitamin "C" is obtained from a well balanced diet.

Vitamin "C" is water soluble and it contains a long chain of aliphatic compound [2].

METHODOLOGY

Reagents: Vitamin "C" solution, 0.05N Ferric Ammonium Sulphate, and Ferrous Ammonium Sulphate, Sulphuric acid, ferroin indicator.

Ferric Ammonium Sulphate was standardized by using Ferrous ammonium sulphate solution using ferroin indicator.

Analysis of Vitamin "C" in pharmaceutical Sample:
0.8 gram of tablet was weighed and dissolved in 100ml of distilled water and then 10ml is used for estimation of Vitamin "C" content in the tablet.

Analysis of Vitamin "C" in Fruit Sample:
For Sweet Lime: 5.2ml of one fruit slice juice (whole sweet lime

weighing 8.514 gram) was diluted to 100ml with distilled water and then 10ml is taken for estimation of Vitamin "C". This solution is titrated against Ferric Ammonium Sulphate by adding sulphuric acid and two drops of ferroin indicator.

Similarly 13.0ml of Lemon fruit juice (Whole Lemon weighing 33.184 gram) was diluted to 100ml with distilled water and then 10ml is taken for estimation of Vitamin "C". This solution is titrated against Ferric Ammonium Sulphate by adding sulphuric acid and two drops of ferroin indicator.

RESULT AND DISCUSSION

The Ferric Ammonium Sulphate solution is standardized with Ferrous Ammonium Sulphate solution. The concentration of Ferric Ammonium Sulphate calculated and its normality is determined by following formula:

$$0.05 \times 10 \div BR (\text{Volume of Titrant required for end point}) = 0.047N$$

For lemon fruit juice:

Percentage of vitamin "C" in Lemon fruit juice is 0.476%

For sweet lime fruit juice:

Percentage of vitamin "C" in sweet lime fruit juice is 3.846%

For Pharmaceutical Sample:

Percentage of vitamin "C" in sweet lime fruit juice is 62.09%

For Lemon:

Percentage of vitamin "C" = 0.476%

Amount of vitamin "C" = 0.062g/13.0ml of fresh fruit juice

For Sweet Lime:

Percentage of vitamin "C" = 3.846%

Amount of vitamin "C" = 0.02g/per 5.2ml of fresh fruit juice

For Tablet:

Percentage of vitamin "C" = 62.09%

Amount of vitamin "C" = 0.038g/0.8gm of Tablet

The order of vitamin "C" content in the three samples are given as follows.

Tablet > Sweet Lime Fruit > Lemon Fruit.

Table: Comparative account of vitamin "C" content in three Different Sample

Sr. No.	Sample	Percentage Of Vitamin "C"
1	Lemon	0.476%
2	Sweet Lime	3.846%
3	Vitamin "C" Tablet	62.09%

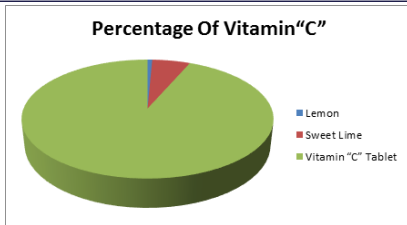


Figure: Percentage of vitamin "C" in different fruit juice and tablet

CONCLUSION

This research work gives the information about vitamin "C" content in the natural fruits and pharmaceutical sample. Vitamin "C" is very necessary for mental and physical growth. How much amount of Vitamin "C" is consumed from the natural fruits and Tablets are identified. The deficiency disease of vitamin "C" can be controlled by consuming vitamin "C" Tablet. Because in the Tablet percentage of vitamin "C" is much more than natural fruits[3].

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