

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

TELANGANA STATE

(AFFILIATED TO KAKATIYA UNIVERSITY)



DEPARTMENT OF CHEMISTRY

A REPORT ON STUDENT STUDY PROJECT

A REPORT ON STUDENT STUDY PROJECT

(Analysis of fruit and vegetable juices for their acidity)

Submitted By

1. Madavi. Chandana- b.sc(Mpc) II yr
2. ch.sujatha -B.sc (MBZC) life science II yr
3. A.Sridevi -B.sc (BZc) life science II yr
4. P.Maheshwari -B.sc (BZc) life science II yr
5. 5.B.Swathi -B.sc (MBZC) life science II yr

Supervised by: G.Usharani lecturer in chemistry

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

DEPARTMENT OF CHEMISTRY

CERTIFICATE

This is to certify that student project, "**Analysis of fruit and vegetable juices for their acidity**" for the academic year 2021- 2022 has been successfully completed by Madavi. Chandana, Ch.Sujatha, A .Sridevi, P. maheshwari, B.Swathi Of B.sclife science II yr year for the partial fulfillment of departmental annual curricular plan.

PRINCIPAL

REPORT

Title of the project: "Analysis of fruit and vegetable juices for their acidity" for the academic year 2021-2022, Asifabad

Name of the students to whom the work assigned

1. Madavi. Chandana B.sc (Mpc) II yr
2. Ch.Sujatha-B.sc (MBZC) II yr
3. A.Sridevi -B.sc (BZc) II yr
4. P.Maheshwari -B.sc (BZc) II yr
5. B.Swathi -B.sc (MBZC) II y

Under the guidance of : Smt. G.Usha rani lecturer of chemistry

1. **Objective:** to determine the amount of acids present in various fruits and vegetables and also to detect the presence of iron ,carbohydrates ,laboratory and sugars in them.
2. **Requirements:**Test tubes ,burner ,litmus paper, laboratory reagents ,juice of various fruits and vegetables.
3. **Theory:** fruits and vegetables are always a part of a balanced diet.That means the fruits and vegetables provide our body the essential iron, carbohydrates, protein, vitamins and minerals. Their presence in these substances can be indicated by some general observations.For example ,freshly cut apples become reddish after some time because iron, carbohydrates, proteins, acids and sugars can be tested in the laboratory by extracting their juices and subjecting them to various tests.
4. **Procedure:**
 - a) **Acid content:** Take different fruit juices in different containers and dip the pH paper in them. if pH is less than 7 ,it is acidic. Determine their acid content by titrating a known quantity of a fruit juice with 0.01M KOH solution using phenolphthalein as indicator. In case of dark colored juices, dilute them with enough distilled water to get a sharp end point during titration. Compare the acid contents of juices by comparing their acid values. The acid value of vegetables and fruits is the number of milligrams of koH required for neutralizing acid present in one gram of vegetable or fruit.

b) **Test for carbohydrates:** Take 2 ml of juice and add 1 ml of Fehling's solution A&B and boil it. Red precipitate indicates the presence of reducing sugars like maltose, glucose, fructose and lactose.

C) **Test for starch:** take 2 ml of juice in a test tube and add a few drops of iodine solution. If it turns blue black in color, it indicates the presence of starch.

c) **Test for calcium :** take 2 ml of juice in a test tube and add a few drops of ammonium chloride and ammonium hydroxide solutions. Filtrate the solution and add 2 ml of ammonium oxalate solution. White precipitate or murkiness indicates the presence of calcium.


Conclusion:

1. Fruits and vegetables contain important vitamins; minerals and plant chemicals. They also contain fiber.
2. A diet high in fruit and vegetables can help protect you against cancer, diabetes and heart diseases



Making of tomato juice by students



 GPS Map Camera



keslapur, Asifabad
88W8+495, Keslapur, Telangana 504293, India
Lat 19.345255°
Long 79.315998°
8/2/2022 11:40 AM GMT+05:00



TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G) ASIFABAD

TELANGANA STATE

(AFFILIATED TO KAKATIYA UNIVERSITY)



DEPARTMENT OF CHEMISTRY

A REPORT ON STUDENT STUDY PROJECT

(Study of oxalate ion content in Guava fruit)

Submitted By

6. G.sujatha- B.sc(Mpc) II yr
7. D.Ravalika -B.sc(Mpc) II yr
8. R.Vanisri -B.sc(Mpc) II yr
9. K.yamuna -B.sc(Mpc) II yr
10. 5. A.Parvathi -B.sc(Mpc) II yr

Supervised by: G.Usha Rani lecturer of chemistry

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G) ASIFABAD

CERTIFICATE

This is to certify that student project, "**Study of Oxalate ion content in Guava fruit**" for the academic year 2022- 2023 has been successfully complete by R.Sonali, D .Kalyani, K.Chandrakala, K.Eshwari, T.Ayyubai of B.sc Mathematics II year for the partial fulfillment of departmental annual curricular plan.

PRINCIPAL

REPORT

Title of the project: "**Study of oxalate ion content in Guava fruit**" for the academic year 2022-2023, Asifabad

Name of the students to whom the work assigned

1. R.sonali- B.sc (Mpc) Iii yr
2. D.Kalyani -B.sc (Mpc) III yr
3. K.Chandrakala-B.sc (Mpc) II yr
4. K.Eshwari -B.sc (Mpc) II yr
5. T.Ayyubai -B.sc (Mpc) II yr

Under the guidance of : Smt.G.Usha rani lecturer of chemistry

Introduction:

Guava is sweet, juicy and light or dark green colored fruit. It is cultivated in all parts of India .When ripe it acquires yellow color and has a penetrating strong scent .The fruit is rich in vitamin c and minerals. It is a rich source of oxalate ion and its content in the fruit varies during different stages of ripening.

Aim: To study the presence of oxalate ion content in guava fruit at different stages of ripening.

Apparatus: 100ml conical flask, pestle and mortar, beaker, titration flask, funnel, burette, weight box, pipette, filter paper

Chemicals: dilH₂so₄, 0.25N KMNO₄ solution, guava fruits at different stages of ripening.

Theory: oxalate ions are extracted from the fruit by boiling pulp with dil H₂so₄ .Then oxalate ions are estimated volumetrically by titrating the solution with standard KMNO₄ solution.

Procedure:

1. Weigh 50 g of fresh guava and crush it to a fine pulp using pestle mortar.
2. Transfer the crushed pulp to a beaker and add about 50ml dil H₂SO₄ to it. Boil the contents for about 10 minutes.
3. Cool and filter the contents in a 100ml measuring flask. make the volume up to 100ml by adding distilled water.
4. Take 20ml of the solution from the measuring flask into a titration flask and add 20ml of dilute sulphuric acid to it .Heat the mixture to about 60 degree Celsius and titrate it against 0.25N KMNO₄ solution taken in a burette .The end point is appearance of permanent light pink color
5. Repeat the above experiment with 50g of 1,2 and 3days old guava fruit

Conclusion:

The content of oxalate ions in guava was found to be 59.67 percent, which is close to the literature value of 60 percent.

