Food Fun!

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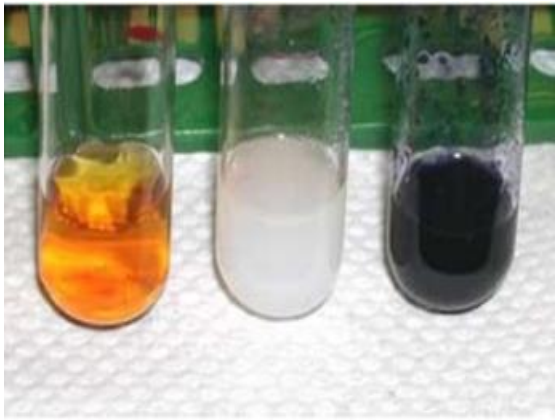
Starch Test

- Iodine is used to test for the presence of starch スターチ in food samples
- Iodine ヨウ素 will turn blue-black when added to starch

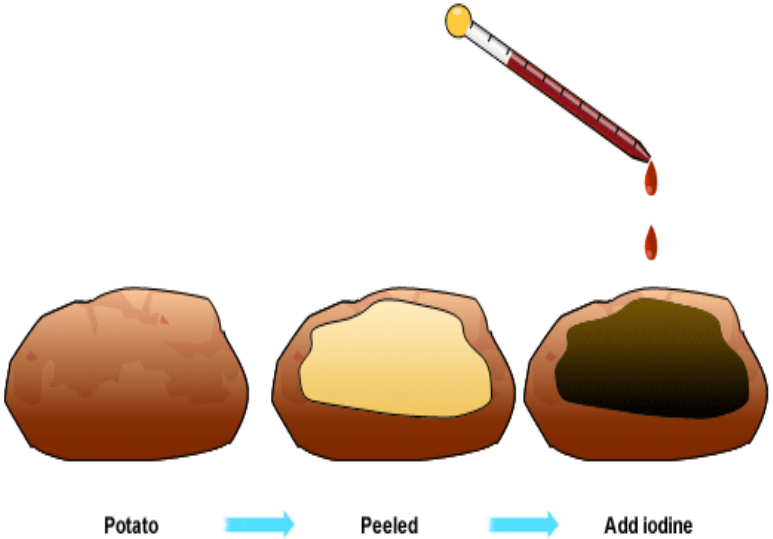
Which one gives a positive test for starch?

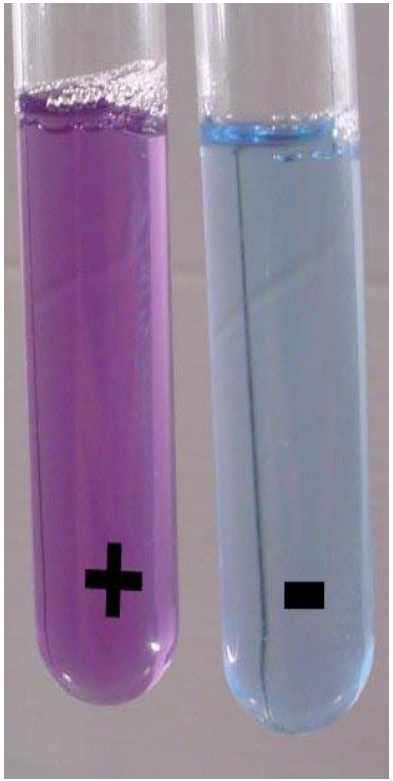


Many plants, such as sweet potato スイートポテト, yam ヤムイモ, pumpkin パンプキン, store excess food as starch.

Procedure for Starch Test

1. Add a few drops of iodine solution to a piece of solid food.





Source of photo: https://s3.amazonaws.com/classconnection/951/flashcards/4208951/jpg/biurets_test-14C0B5226AF61394552.jpg

Biuret Test

Used to test for the presence of proteins タンパク質

Biuret reagent will:

- turn **violet** in the presence of proteins (+)
- remain **blue** if there are **no** proteins (-)

Do you know what egg white contains?

Thus, what do you think the colour will be when egg white is tested?

Procedure for Biuret Test

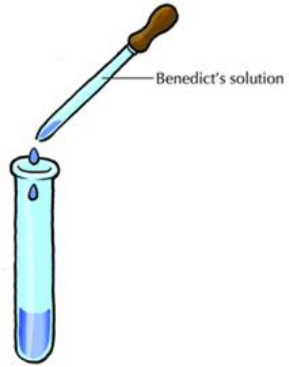
1. Add 1 cm^3 of sodium hydroxide solution (水酸化ナトリウム) to an equal volume of the food sample solution, mix well.
2. Next, add 1% copper (II) sulfate solution (硫酸銅) one drop at a time to the food sample solution.
3. Shake well to mix the liquids together.
4. Observe and record any colour change.

Benedict's Test

Benedict's reagent is used to test for the presence of reducing sugars 還元糖 in a solution.

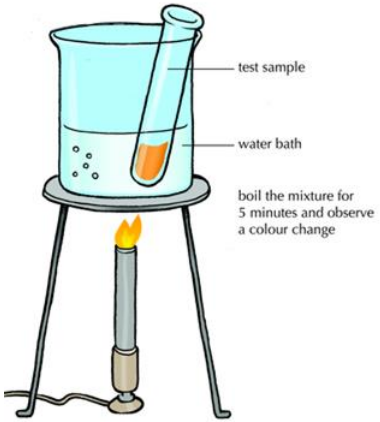
Examples of reducing sugars: glucose ブドウ糖, fructose 果糖, galactose ガラクトース, lactose 乳糖, maltose 麦芽糖

Benedict's reagent changes colour when heated in a mixture with reducing sugar(s).



Procedure for Benedict's Test

1. Add 2 cm^3 of the food sample solution to a test tube.
2. Add an equal volume of Benedict's solution to the test tube and swirl the mixture to mix the liquids well.
3. Leave the test tube in a boiling water bath for about 5 minutes, or until the colour of the mixture does not change.
4. Observe the colour changes during that time as well as the final colour.



Source of diagram: http://m.everythingmaths.co.za/science/lifesciences/grade-10/01-the-chemistry-of-life/01-the-chemistry-of-life-04.cnxmlplus

With higher concentrations of reducing sugars, the colour of the (heated) mixture will change from light blue to green, yellow, orange, and red, in increasing amount of sugars.

What do you think the colour of the mixture is when Benedict's reagent is heated after being mixed with **apple juice**?

no reducing sugar(s) present

moderate amount of reducing sugar(s) present

a lot of reducing sugar(s) present

Source of photo: http://brilliantbiologystudent.weebly.com/ethanol-emulsion-test-for-lipids.html

The End

Do you have any questions?