METHOD TO DETECT PECTIN IN FRUIT JUICE

technical information

BACKGROUND

The method below is a simple way to monitor enzyme performance and ensure pectin has been removed from juice prior to filtration and other unit operations. The presence of any pectin will be revealed several minutes after mixing a sample of juice with an alcohol solution in a 1:2 ratio. Besides the pectin test method described here (method B), a separate method is described for the preparation of an acidified alcohol stock solution (method A). It is important to acidify the alcohol stock solution since by doing so can prevent unwanted precipitation of organic acids or calcium pectate which can cause a false positive test result. The acidified alcohol stock solution can be stored for long periods to be used when needed during fruit juice processing.

METHOD (A) - PREPARATION OF ACIDIFIED ALCOHOL

Materials needed:
- 95% Ethyl Alcohol (Ethanol)
- Pure hydrochloric acid (HCl) at 37%

1) Dispense 10 mL of pure hydrochloric acid (HCl) at 37% into a 1000 mL volumetric flask.

2) Fill to the volume with 990 mL of Reagent Alcohol.

3) Pour into a brown 1000 mL plastic container for long term storage.

Note: this volume of stock solution is sufficient for 100 pectin tests. More or less stock solution can be prepared as appropriate by proportionally adjusting component volumes.

METHOD (B) - DETECTING PECTIN IN FRUIT JUICE

1) Add 10 mL of the acidified alcohol stock solution, prepared in Method A above, into a test tube.

2) Dispense 5 mL of juice into the test tube with the alcohol, i.e., 1 part juice : 2 parts alcohol solution.
Note: Add the juice to the alcohol rather than the alcohol to the juice.

3) Close the test tube and invert 3 - 5 times to mix the juice with the alcohol solution.

4) Leave to stand for 5 minutes before reading.

5) The test is positive if the juice addition results in a viscosity increase during/after inverting, including gel formation. Hazing is normal and isn't evidence of a pectin positive result.

6) After a few minutes rest you may see a gel ring at the top of the test tube.

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