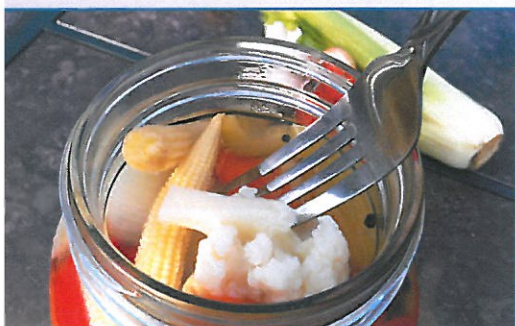


Measurement of Shelf Stable Acid in Preserved Foods

LAQUAtwin is a series of pocket ION meters. Using Ion Selective Electrode (ISE) technology, they are available for measuring Conductivity, Calcium, Nitrate, Potassium, Sodium, Salt concentration and pH measurement. Using just a tiny amount of sample, the LAQUAtwin proprietary flat sensors can quickly and accurately measure the values of the chemical parameters in the field.



Introduction

Many foods are canned and it is important that these foods are properly and adequately acidified. Thermally processed acid foods are generally safe. However, if products are not properly acidified there can be a risk to food safety. Inadequate acidification can lead to botulism and premature expiry.

Food Standard 2.3.1 states that 'fruits and vegetables in brine, oil, vinegar or water, other than commercially canned fruit and vegetables, must have a pH not greater than 4.6'.

In order to determine the pH level, and hence consider the freshness of canned foodstuffs, the Horiba LAQUAtwin pH meter can be used.

The Horiba LAQUAtwin pH meter is used to determine the pH of the brine (oil, vinegar or water) used to preserve the foodstuff. This is an easy and quick method used to ensure that the brine is at the optimum pH.

Method

The brine's pH can be measured using the LAQUAtwin pH meter. A pipette can be used to extract a small sample of the brine solution. This is placed on the sensor of the LAQUAtwin pH meter and measured. To repeat sampling, wash the sensor with tap water and pat dry with a paper tissue.

Results and Benefits

The use of the Horiba LAQUAtwin pH meter to ensure a maximum pH of 4.6 in brine will fulfill safety requirements by preventing botulism, and thus preventing common illnesses such as gastroenteritis.

The LAQUAtwin pH meter is small and compact; convenient to carry around in your pocket for easy on-site testing. Its easy-to-use interface is simple for anyone to use the LAQUAtwin pH meter.

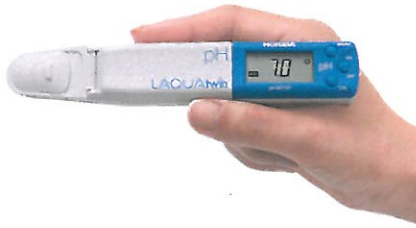
Types of acid preserved foods

Food Type	Comment
Fermented and high salt (often hot pack)	Olives, sauerkraut, pickled cucumbers. Lactic fermentation under high salt conditions
Fermented and high salt (often hot pack)	Soy sauce, Asian fish sauces. Complex lactic fermentation under high salt conditions
Vinegared products (often filled with hot brine)	Pickled onions, gherkins
Products complying with the CIMSCEE Model (1985) or 21 CFR 169.	Mayonnaises, salad dressings, sauces (some). Inherently stable due to aqueous phase with low pH and adequate acetic acid, salt and sugars.
pH, acetic acid, hot pack, Refrigerate after opening	Sauces, ketchup, condiments
pH, hot pack, Refrigerate and use promptly after opening	Cook-in sauces, pasta sauces, salsas, fruit, fruit juices, marinades, commercial vegetables in oil
pH, preservative(s)	Fruit juice cordials
pH and high sugar, pasteurised	Jams
Refrigerate after opening	

NSW Food Authority "Shelf stable acid preserved foods: Factors affecting the shelf stability of acid foods Condiments, sauces and salad dressings" NSW/FA/FI035/0811

LAQUAtwin

Unique Features



Calibrate and measure at the touch of a button—the smiley face will tell you when the result can be read.

Hassle-free automatic calibration with a few drops of standard solution reassures you of your measurement accuracy. Two-point calibration is also possible.*1

*1 Except for B-711

LAQUAtwin: the only meters with flat sensor technology.

HORIBA's highly-sensitive, flat sensor technology opens up new possibilities for sampling and sample types. Only a small amount of sample is required, so you can easily sample in situ without the need for beakers or other labware. Sensors are easily replaced as required.



LAQUAtwin is fully waterproof and dustproof.

The meter and sensor are fully waterproof³ and dustproof, so you can take it anywhere.

³ IP67 rated. Will withstand immersion for 30 minutes at 1 m. Not suitable for underwater use.

Carry case comes as standard for handy portability.

The compact carry case contains everything you need for your measurements, including the standard solution and sampling sheets.



1 X 6

One meter, six methods.

Only LAQUAtwin allows you to be this flexible!

Choose the best method according to your sample, your situation, and your needs.



01 Immersion

When you're in the lab, you can test the sample in a beaker. Ensure the sensor guard sliding cap is open.



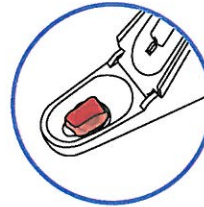
02 Scoop

Use as a scoop to test water eg from a river. A vertical scoop for an aquarium is also available with a unique sensor guard.



03 Drops

Place a drop of the sample onto the sensor with a pipette. LAQUAtwin meters can measure sample volume as low as 0.1mL.



04 Solid Samples

Foods containing some moisture can be tested by placing a small piece directly onto the sensor.



05 Powders

LAQUAtwin meters can also test dry powders. Simply place the powder sample onto the sensor and drop on your defined volume of pure water.

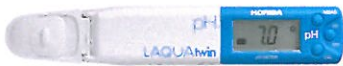


06 Paper and textiles

To test sheets of paper and textiles, cut up the sample into small pieces and place directly onto the sensor. Drop on your defined volume of pure water.

Lineup

pH



Accurate pH measurements in a few seconds, from a single drop.

Water pH varies in different environments, and a slight change can often have a major effect.

Whether you need to keep the pH of an aquarium within tight limits, are checking for the acidity of rain water or for the quality of meat and fish products, LAQUAtwin compact pH meters are ideal for you. No matter where and when you need to test.

COND



Determine water conductivity with as little as 0.12 mL of sample.

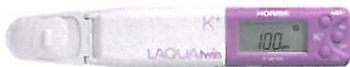
The conductivity of rain water is a trusted guide to determining atmospheric purity. In agriculture, measuring the conductivity of soil allows farmers and agronomists to determine optimum fertilizer usage and check the 'health' of soil after salt water damage. The LAQUAtwin meter makes conductivity testing simple, anywhere.

Na+



Only compact meter for a quick and reliable measurement of sodium ion at the scene using ion selective membrane.

K+



Only compact meter for a quick and reliable measurement of potassium ion at the scene using ion selective membrane.

NO3-



Only compact meter for a quick and reliable measurement of nitrate ion at the scene. Special application packages for crop (B-741) and soil (B-742) are also available.

Ca2+



Only compact meter for a quick and reliable measurement of ionized calcium at the scene using ion selective membrane.



<http://www.horiba.com/iaquatwin>

IMS

HORIBA Group is operating Integrated Management System (IMS)
ISO9001 JOA-0298 / ISO14001 JOA-E-90039 / ISO13485
JOA-MD0010 / OHSAS18001 JOA-OH0068

