

pH Measurement To Determine Freshness Of Meat Products

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

Fresh meat must have a pH value in the range of 5.5 to 6.2.¹ During temporary storage, especially when it is not properly preserved, the fresh meat will turn rancid and have a pH value below 5.3.

The LAQUAtwin pocket pH Meter is used as quality control check to ensure freshness of the meat, before selling to consumers. This is an easy, quick check method used to abide to the Vietnamese Standards in ensuring that customers are purchasing fresh meat that can be safely consumed.

Method

A small sample of meat is sliced off and minced. This is to ensure total sampling of the inner and outer part of the meat. Place the minced meat on the flat sensor of the LAQUAtwin pocket pH Meter and measure. To repeat sampling, wash with diluted soap water and pat dry with a paper tissue. Place new meat sample on the sensor and repeat testing process.

Results and Benefits

As mentioned in the article by VNExpress on 1st March 2014, the Laqua Twin pH meter provides a simple and cost effective way to check the freshness of meat in the local markets. This test procedure is implemented by the Hanoi Departments of Health, Agriculture, Industries and Commerce to establish quality control of food safety by using a quick inspection tool in Vietnam wholesale markets.

The LAQUAtwin pocket pH meter is small and compact; convenient to carry around the marketplace for easy on-site testing. Its easy-to-use interface is simple for anyone to use the LAQUAtwin pocket pH Meter. Preliminary results show stable and accurate readings were obtained during a trial run of LAQUAtwin pocket pH Meter in Hanoi meat market.

Typical pH values for meat and meat products:²

Product	pH value (range)
Meat mixes in jelly + vinegar added	4.5 to 5.2
Raw fermented sausage	4.8 to 6.0
Beef	5.4 to 6.0
Pork	5.5 to 6.2
Canned meats	5.8 to 6.2
Curing brines	6.2 to 6.4
Blood sausages	6.5 to 6.8
Muscle tissues, immediately after slaughter	7.0 to 7.2
Blood	7.3 to 7.6

¹ Vietnam's National Standard TCVN 7046 2002

² Meat Processing Technology For Small- To Medium-Scale Producers, FAO Document Repository

Pocket ION Meter

LAQUAtwin

Unique Features



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.

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 is fully waterproof and dustproof.

The meter and sensor are fully waterproof*3 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.

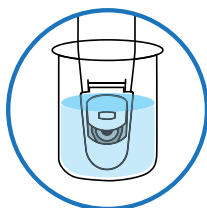
The compact carry case contains everything you need for your measurements, including the standard solution and sampling sheets.



1 X 6

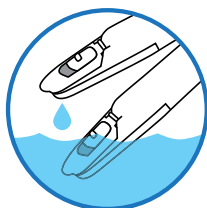
One meter, six methods.

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.



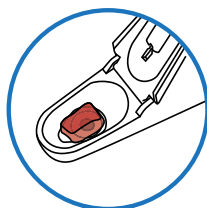
02 Scoop

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



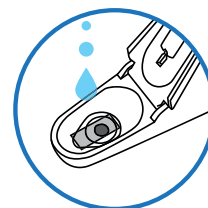
04 Solid Samples

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/laquatwin>

IMS

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

