

Record 12: My pH checks and meter accuracy

Adequate pH testing requires you to validate your process (Record 12A) and ensure ongoing food safety with monthly checks (Record 12B). pH must be checked at regular intervals to ensure food safety and you can choose the way you keep this information, such as the record below. However you decide to record this information make sure you record the date, batch tested, pH after initial pH drop, time taken to achieve this pH drop, and for the finished product, and any corrective action.

Record 12 section A – measuring pH to validate your acidification process

Measure the pH of your food in five concurrent batches (for each flavour variant). The pH must be under 4.6 after initial fermentation and for the finished product. If your results are inconsistent, you should review your process. If you are using a pH meter you must calibrate it for accuracy each day it is used.

Step 1: Check your pH meter is accurate (calibration) and record the result. See Appendix 4 on how to calibrate your pH meter.

Step 2: Check you are achieving a rapid initial pH drop to less than pH 4.6.

Use pH strips or a calibrated pH meter to measure that the pH is below 4.6 within the following timeframes, from the fermentation being initiated:

- fermented milk – 4 hours
- yoghurt – 6 hours
- brewed soft drinks – 4 hours
- fruits, vegetables and eggs – 24 hours.

Step 3: Check your finished product has a pH of less than 4.6.

Use pH strips or a calibrated pH meter to measure that the pH is below 4.6 in your finished product.

Record 12 section B – ongoing pH measurement to confirm your process is still working

Repeat your pH testing at least once a month (for each flavour variant).

How to measure the pH of food

Remove a sample: Always remove a small sample from your product and test this sample. Testing your main batch can cause hazards such as: physical contamination from broken glass from a damaged electrode, bacterial contamination from using an unclean electrode or paper, cross contamination from another product or chemical contamination from cleaning chemical residue present on the electrode.

Prepare your sample: Samples should be tested at a constant temperature, preferably room temperature. Rinse and dry the electrode between products. If your product is a mixture of solid and liquid foods (such as pickled vegetables), you must measure both components together by blending all components into a puree using proportional amounts of the components.

pH meter care

- Rinse the electrode between products using warm tap water.
- Only use soft facial tissues (they must not have added oils like lavender or aloe vera) to wipe the electrode.
- The electrode can get food build-up on it from testing which will make it inaccurate. Follow the manufacturer's instructions to make sure it is cleaned properly.
- When not in use, follow the manufacturer's instructions for correct storage. It may need to be stored in distilled water.

Example of record 12A: measuring pH to validate your acidification process

Use this record to validate your process. Validation must be repeated if your process or formulation changes, and for new flavours

Product name (flavour):		Kimchi								
pH drop timeframe?		24 hours								
Test #	Batch ID	Date and time fermentation initiated	pH meter calibration – daily		pH check after pH drop				pH of finished product	
			Reading for pH 4.0 buffer	Reading for pH 7.0 buffer	Date and time of pH check	Check pH	Time between initiation and 1 pH check?	Corrective action (if pH is above 4.6)	Final check pH	Corrective action (if pH is above 4.6)
1	15/12/17	09/05/17 3.00pm	4.01	7.00	10/05/17 3.00pm	4.6	24 hours	NA	3.8	NA
2	21/01/18	10/06/17 10.00am	3.59	7.01	11/05/17 9.55am	4.7	24 hours	Add 30ml of vinegar and retest	4.7	Fermentation unsuccessful, discarded
3										
4										
5										
<p>Have you achieved compliant results for five concurrent batches of your product?</p> <p>Yes or no? If no, you will need to repeat the validation process.</p>										

Example

Record 12A: measuring pH to validate your acidification process

Use this record to validate your process. Validation must be repeated if your process or formulation changes, and for new flavours

Product name (flavour):										
pH drop timeframe?										
Test #	Batch ID	Date and time fermentation initiated	pH meter calibration – daily		pH check after pH drop				pH of finished product	
			Reading for pH 4.0 buffer	Reading for pH 7.0 buffer	Date and time of pH check	Check pH	Time between initiation and 1 pH check?	Corrective action (if pH is above 4.6)	Final check pH	Corrective action (if pH is above 4.6)
1										
2										
3										
4										
5										
<p>Have you achieved compliant results for five concurrent batches of your product?</p> <p>Yes or no? If no, you will need to repeat the validation process.</p>										

Example of record 12B – monthly ongoing pH measurement to confirm your process is still working

Repeat your pH testing at least once a month, testing is to be undertaken for each flavour variant

Product name/flavour		Kimchi							
Batch ID	Date and time fermentation initiated	pH meter calibration - daily		pH check after pH drop				pH of finished product	
		Reading for pH 4.0 buffer	Reading for pH 7.0 buffer	Date and time of pH check	pH of sample	Time between initiation and pH check?	Corrective action (if pH is above 4.6)	pH of sample	Corrective action (if pH is above 4.6)
11082	09/11/17 10.00am	4.0	7.01	10/11/17	4.6	24 hours	NA	3.8	
11083	09/12/17 11.20am	3.59	7.00	10/12/17	4.5	24 hours	NA	3.8	
11084	09/01/18 9.15am	4.1	7.01	10/01/18	4.5	24 hours	NA	4.7	Discard, fermentation unsatisfactory

Example

Record 12B – monthly ongoing pH measurement to confirm your process is still working

Repeat your pH testing at least once a month, testing is to be undertaken for each flavour variant

Product name/flavour									
Batch ID	Date and time fermentation initiated	pH meter calibration — daily		pH check after pH drop				pH of finished product	
		Reading for pH 4.0 buffer	Reading for pH 7.0 buffer	Date and time of pH check	pH of sample	Time between initiation and pH check?	Corrective action (if pH is above 4.6)	pH of sample	Corrective action (if pH is above 4.6)