Tips on how to take a water sample under standard IG.b

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Water sampling procedure

Under the Red Tractor fresh produce standards, water used in crop production (irrigation, mixing of fertiliser and PPPs, crop and equipment washing) must be tested at a frequency in response to the Water Risk Assessment and in line with the Water Matrix (appendix IG.b). Standard IG.b and the requirement to test water used in crop production helps to ensure food safety of products produced on farm, with food safety being one of the four key areas that the Red Tractor standards are focused on.

The Water Matrix under appendix IG.b was amended in the PDF version of the Fresh Produce standards at the end of July 2018. The amended appendix can be found on page 49 of the PDF version of the Fresh Produce standards or on the Red Tractor website here: https://assurance.redtractor.org.uk/contentfiles/Farmers-6825.pdf?_=636645912038422029

Under standard IG.b, controls and test results must be kept, regularly reviewed and any improvement action taken must be recorded. The following guidance document helps to explain how to take a water sample and a video is also available on the AHDB website which demonstrates how the steps can be implemented on-farm. The video can be viewed here: https://youtu.be/kE26JtX-qUA.

Under standard IG.b, the grower must take a number of samples depending on the intended use of the water, the crop category (0,1,2,3) and water source. In the case of irrigation, samples must be taken during peak-use period, for example during peak summer demand for potatoes.

Sample bottles

- Water samples should be collected in sterile bottles supplied by the laboratory which will be carrying out the water analysis. Remember, Red Tractor recommend that analysis of irrigation water is completed by a laboratory accredited to ISO 17025 for microbiological, chemical and mineral pollutants
- The average minimum sample size is 500ml. If the sample water is chlorinated, the sample bottle should contain sufficient sodium thiosulphate to neutralise any residue chlorine. This allows a more accurate count of the number of bacteria in the water at the time of sampling

Taking the sample

1. Bottles used to take the samples can be obtained from the lab completing the water analysis.
2. The sampling point should be visibly clean. Clean off any soiling from the sampling point, but do not disinfect it before taking the sample. This ensures that the results reflect the condition of the water as you are using it.
3. Allow water to run through the sampling point at a uniform rate for a few seconds before taking the sample.
4. Hold the sample bottle in one hand and remove the stopper or cap with the other. Take care not to touch the top of the bottle or any part of the stopper or cap which comes into contact with the sample water. Do not put the cap or stopper down on the ground or any other surface.
5. Collect the water sample in the bottle, avoiding splashing and leave a small air gap at the top. Replace the cap or stopper, again taking care not to touch the top of the bottle or parts of the cap or stopper which comes into contact with the water sample.
6. If you accidentally contaminate the bottle, use a new sterile one to collect a fresh sample.
7. The sample should be labelled with the farm name, sample location, date and time.
8. Remember, under the Red Tractor fresh produce standards, water test results must be recorded and untreated sewage water must not be used in crop production.

Transport and storage of samples

- Sample should be delivered to the laboratory and analysed as quickly as possible. Within 6 hours should be the target, where this time is exceeded, it is important to know whether the extra time taken is likely to increase or decrease the end result.
- This requires proper planning to ensure you take samples when you can transport them quickly, and the laboratory is open and ready to analyse them.
- Samples will need to be kept cool (2-10 degrees Celsius) during transport. You may need cool boxes or ice packs to help with this.
- Containers used to transport samples will need to be kept clean to avoid contamination of the sample bottles.

When an unsatisfactory result is received

1. Confirm result from laboratory.
2. Identify date when sample was taken – are timings acceptable?
3. Identify origin tested (e.g. irrigation water from borehole).
4. Use date to identify timing of sample in relation to crop growing cycle in particular to identify which crop was irrigated and in relation to crop harvest date.
5. Keep log of actions taken

More information

If you would like more information on monitoring microbial food safety of fresh produce please visit the following websites:

1. Information and videos on the Keep It Clean workshops created by AHDB in 2017. The link takes you to the main website from which you can access a Keep It Clean DVD and further videos from industry experts: https://horticulture.ahdb.org.uk/microbials-keep-edible-fresh-produce-clean
2. Food Standards Scotland provides a set of key tools on their website to help growers manage microbiological contamination risks: http://freshproducetool.foodstandards.gov.scot/
3. A factsheet which provides more background on food pathogens, how to test water used in fresh produce and guidance on how to interpret results can also be found here: https://cdn.harper-adams.ac.uk/document/profile/factsheet_13_10_amended_draft_FINAL.pdf