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ANALYSIS OF BORE-HOLE WATER

Over the past few years an increasing number of farms have turned to bore-hole water as a cost-saving exercise. We are often asked to carry out testing.

SAMPLING

It is important that we start with a good sample. To obtain this the water needs to be coming straight from the bore-hole, i.e. not out of a header tank or similar. Let the water run for a few minutes, so that all the water standing in the pipe is cleared and you should then have a sample from the bore-hole itself. This obviously needs to go into a sterile bottle and kept cool before being taken to the Lab. (*Sterile bottles are available on request)*

Testing of bore-hole water consists of two parts, bacteriological and mineral content.

BACTERIOLOGICAL TESTING

For most analyses we *carry out the following tests - a coliform count, faecal Streptococci, Pseudomonas sp and a thermoduric count.* C*oliforms* are faecal organisms and if you have a high level of *coliforms* present it suggests faecal contamination. *Pseudomonads are likely to be environmental contaminants and they particularly like moist conditions and form biofilms on worn pipework and rubber*. *Faecal Streptococci survive in the environment longer then colifoms and may suggest longterm contamination .Thermoduric organisms are rare but if present may survive "wash-up" and potentially increase Bactoscans*

Acceptable ranges *are difficult to give because it depends what you are using the water for. Using our standard testing methods, mains water (for human consumption) would have zero (or <1.0) cfu/ml (colony forming units per ml). If the water is to be used for plant cleaning with a sanitiser added, <2.0 should be acceptable. For stock drinking water much higher levels would be acceptable because, of course, cattle water troughs become quickly contaminated with food dropping from their mouths anyway.*

MINERAL CONTENT

We do not carry out mineral analyses at the Lab but can send off samples for you if you wish.(*Special bottles are required and are available from the laboratory)* Bore-hole water that is high in sodium/salt will have a reduced palatability and of course reduced palatability means reduced food intake. Other minerals such as calcium and magnesium, if very high, could upset the ion balance in the cow and may precipitate issues such as milk fever. It is always difficult to know which minerals to analyse and sometimes, if faced with a problem, it is perhaps more logical to simply switch the cows back to mains water for a week or so, to see if any problems resolve themselves.