Danamark home

DANAMARK watercare
GUIDING WATERCARE INNOVATION

Disinfection

Water disinfection means the removal, deactivation or killing of bacteria, viruses and other harmful microorganisms present in water supply. Microorganisms are everywhere and are an integral part of the ecosystem. However, certain strains of microorganism are harmful to humans, in particular to young children, elderly and patients with low immunity. In these cases, disinfection of drinking water helps prevent harmful diseases.

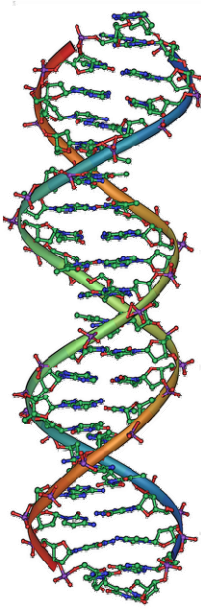
There are many chemical disinfectants used for drinking water. Chlorine is perhaps the most common disinfectant used for municipal drinking water supplies. Bromine, ozone, hydrogen peroxide and potassium permanganate are other alternatives. An important property of a disinfectant is having a residual effect, meaning that they would remain effective even after the initial dosage. Otherwise, microorganisms would recontaminate water from piping. Residual effect is what makes the chlorine taste in tap water.

As with other chemicals, disinfectants have to be added in specific amounts, otherwise they could become toxic. In the process of killing microorganisms, some disinfectants like chlorine may cause undesirable by-products such as trihalomethane (THM), a suspect carcinogen.

In cases of emergency, disinfecting drinking water with common household disinfectant becomes an important way of controlling microbial infection. The simplest form of disinfection is simple boiling of water for one minute. Unscented chlorine bleach may also be used as a chemical disinfectant. Adding at least two drops to every litre of water and waiting for half an hour is usually sufficient. Travelers and campers can use disinfection tablets for water if filters are not available. Chlorine, iodine and potassium permanganate disinfectant are available.

In addition to chemical treatment, there is physical disinfection of water using UV light. Ultraviolet radiation contains high energy that disrupts the DNA structure of microorganisms, hence preventing them from reproducing and causing harm. The major advantage of UV disinfection is it does not alter the chemistry or form by-products in water.

Unscented household bleach is an effective water disinfectant in cases of emergency



UV radiation disrupts the DNA structure of bacteria, rendering them ineffective

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