

Pre-employment and routine examinations of milk handlers

With biosecurity and food safety at the forefront, the question is often asked to what extent the staff at farm level, with specific reference to handlers of milk, contribute to food safety risks.

Pathogenic organisms

Regulation 961 of 2012 – relating to hygiene requirements for milking sheds, the transport of milk and related matters – is clear on the subject that milk shall not be handled by any person who has on his or her body a suppurating abscess, sore, cut or abrasion, unless same is covered with a moisture-proof dressing which is firmly secured to prevent contamination of the milk.

The regulation further prohibits any food handler who is a carrier of a disease or condition in its contagious stage that can be transmitted by food or animals, unless any such person immediately reports the disease or condition to the person in charge and a certificate by a medical practitioner is submitted stating that such person is fit to handle food (milk).

In addition to the above statutory requirements, standards such as the South African National Standard 10049:2012 (used as integrated standard in food safety management systems and audits) make provision for management to ensure that no employee who is known or suspected to be affected by a disease capable of being transmitted through food shall be permitted to work in any part of the food handling organisation, in a capacity in which there is a likelihood of the employee contaminating the food product with pathogenic organisms.

Control measures

It is however no easy task to maintain medical control over milk handlers, due to various reasons. These include staff turnover, which makes it difficult to keep track of them, as well as that medical examinations are costly and do not guarantee the detection of more than a small portion of carriers. Screening pathogens in stool specimens of milk handlers is not cost-efficient and the milk identification of a carrier is not likely to make a significant contribution to the control of food-borne diseases.

Routine medical examinations of milk handlers may also lead to a false sense of safety, which can cause negligence with regard to general hygienic practices and personal hygiene. Infection may also occur after such examinations. Pathogenic bacteria gain access to raw milk via many avenues. This may be from infected mammary glands, contaminated udders and milking machines, unhygienic milk handlers and from the dairy environment. What is of concern is that the milk handler could be a carrier of a transmittable disease which may also affect an entire herd.

On the contrary, as is the case with zoonotic diseases, the milk handler could fall victim to diseases such as tuberculosis (TB) and brucellosis from infected animals. This is of particular importance, as the raw milk of infected animals is often consumed directly by dairy producers, farm employees and their families, neighbours and raw milk advocates.

To address the problem of effective medical examinations of milk handlers, a strategy based on the following principles is required:

- Management commitment.
- Education and training.
- Health interviews.
- Reporting illness to management.
- Applying basic hygiene practices.

These principles can only succeed in promoting a high standard of safe raw milk handling, if applied and accepted in an open and trusting manner by all parties concerned, namely employers and employees. Mutual understanding and trust between management and milk handlers form the basis of any safe food handling strategy.

Management commitment

The safety of milk is the responsibility of management at farm level and can at no point be delegated to milk handlers. It is therefore management's responsibility to ensure the implementation of an effective hygiene programme as well as supervision. Effective communication is essential to ensure non-conformances are addressed in a responsible manner. Workers should be reassured that they will not suffer loss of income or jobs if they report symptoms such as diarrhoea and infected skin lesions.

Provision of technical expertise addressing hygiene and a suitable environment is essential. These services may be obtained from input suppliers such as the supplier of chemicals, as well as the Milk Producers' Organisation (MPO): Institute for Dairy Technology (training of milk handlers in respect of hygiene).

Education and training

Regulation 961/2012 makes it clear that all employees shall be subjected to personal and food hygiene training relevant to the production and handling of milk and in the case of new employees, prior to the commencement of handling of milk.

Particular attention should be given to the need to report illness by milk handlers as soon as it occurs. Records of such training must be made available to the inspector/auditor on request. Furthermore, the holder of the certificate of acceptability for a milking shed shall also undergo training on food safety and hygiene aspects of the production and handling of milk by an accredited service

provider. These services may also be obtained from input suppliers such as the supplier of chemicals, as well as the MPO Institute for Dairy Technology (training of milk handlers in respect of hygiene).

Health interviews

Health interviews involve the completion of questionnaires and/or posing of the relevant questions before employment.

Recruits suspected of suffering from the following conditions will require a medical examination and if confirmed, be disqualified from being appointed as a milk handler:

- Chronic suppurative conditions.
- Chronic bronchitis with productive, purulent sputum.
- Widespread chronic skin conditions, such as psoriasis or eczema, which make skin cleansing difficult and are often associated with secondary infection.

It is recommended that leadership of existing staff should, where possible, be involved during the interview stage to strengthen mutual trust among new and old staff members.

Reporting illness to management

Producers and managers should encourage employees to report to their supervisors whenever they experience diarrhoea, sore throat, fever, a cold, open skin lesions or jaundice. Discretion should then be used as to whether or not these persons should be subjected to certain restrictions or suspended from animal and/or milk handling duties. Questions often arise which medical conditions normally disqualify a person temporarily from milk handling as well as regarding the length of time for

exclusion from work after illness that must be applied.

The following conditions disqualify a person temporarily:

- Infection of the eyes or eyelids.
- Inflammation and/or discharge from the ears.
- Oral sepsis.
- Staphylococcal conditions, e.g. recurrent boils or open sores.
- Recent history of gastrointestinal infection.

The following rules with regard to the length of exclusion from work after illnesses should be applied:

- Hepatitis A: six weeks from onset of jaundice.
- *Salmonella* food poisoning, cholera, dysentery, typhoid and paratyphoid: three consecutive negative stool specimens taken forty-eight (48) hours apart.
- Parasite worms and other parasitic conditions: until successfully treated.
- Staphylococcal and streptococcal: until successfully treated.
- All other gastrointestinal illnesses, bacterial or viral: until symptom-free.
- TB: seven days from onset of effective treatment.

(Return to work in these cases, should however, only take place after consultation with and consent of a medical doctor).

These measures are aimed at protecting co-workers as well as the public from becoming infected through direct contact with an infected milk handler or by means of contaminated milk handled by such person. The transmission of diseases such as TB, sexually transmitted diseases (STDs) and human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (Aids) is practically of very

little consequence with regard to the handling of milk, but steps should be aimed mainly at protecting co-workers and community members from becoming infected.

Basic personal hygiene practices

Producers and managers should ensure that all milk handlers adhere to aspects such as the washing of hands with antibacterial soap after eating, visiting the toilet, smoking, handling waste or soiled objects at all times. The daily provision of clean clothing and disinfecting of aprons during and after each milking session are essential.

Routine medical examinations of milk handlers may also lead to a false sense of safety, which can cause negligence with regard to general hygienic practices and personal hygiene.

The identification and control of potential pathogenic risks at farm level are of utmost importance in terms of biosecurity for animal and human health. Prevention of transmittable diseases and the fact that most milk in South Africa is heat-treated should not provide a false sense of security.

Integrated chain management for food safety in the dairy value chain starts at farm level, in which the medical condition of food handlers plays a critical role. The entry of food-borne pathogens via contaminated raw milk into dairy processing plants and the persistence of these pathogens in biofilms – with subsequent recontamination of heat-treated milk and milk products – present a severe threat to the processing/manufacturing environment and the consumer.



The Dairy Standard Agency (DSA) is an independent, expert and objective body funded by Milk SA and related non-statutory income. Its vision is to promote the maintenance and improvement of the quality and safety of dairy products in the interest of the industry and consumer. Contact them on 012 665 4250 or email info@dairystandard.co.za for more information. Visit www.dairystandard.co.za.