Method of Isolating Parasitic Helminth Larvae

HOW TO ISOLATE PARASITIC HELMINTH LARVAE?

Today, the co-culture method is mostly used by research institutions for the isolation of parasitic helminth larvae. This method utilises a bottle and a petri dish, where the faecal sample is placed into the bottle. The bottle is later filled with water to its capacity and covered by a petri dish having greater diameter compared to the diameter of the bottle. The bottle together with the petri dish is turned upside down with the bottle mouth facing downward towards the petri dish. Water is then added into the petri dish. The hatched larvae will swim in the water and are collected within the petri dish area.

Another method for the isolation of parasitic helminth larvae is by utilising a gradient solution such as sodium chloride or sugar. The faecal sample is ground and mixed with hyper saturated sodium chloride solution to float the parasitic helminth eggs to the surface of the mixture. The top layer of the mixture containing helminth eggs is harvested. The helminth eggs are collected using salt solution centrifugation having different concentration gradients. After centrifugation, the eggs are harvested at a specific concentration gradient. The helminth eggs collected are subjected to cleaning to remove the salt and kept for hatching and larvae collection.

The mentioned methods are however tedious and require relevant skills to conduct the isolation. Moreover, both the above-mentioned methods produce unsatisfactory level of larvae cleanliness, for example, contamination in the first method and the presence of residual salt or sugar used for the isolation in the second method. The difficulties in obtaining clean larvae isolates have been a continuous problem in research laboratories. The present research has come up with a method and apparatus to overcome these problems that no special skills are needed and without contamination.

MARKET POTENTIAL

Helminthiasis (hookworm) is a worldwide problem in sheep and goats. The current treatment is by using chemical drugs rotation. However, the emergence of resistance is very high despite drug rotation and there is a need to search for new methods to overcome the problem. The introduction of the current methodology and apparatus has a high potential for local and global markets, which is generally used by research laboratories and drug companies.