

OBSERVATION ON THE INACTIVATION EFFECT ON EGGS OF *ASCARIS SUUM* IN URINE DIVERTING TOILETS

Yang Lan Li Xueming Wu Qinhua Xu Hongbo Nong Caiyun Nong Lianghong
Guangxi Center of Disease Prevention & Control (Nanning, 530021)

Key words urine directing toilet eggs of *Ascaris suum* survival rate

Objective

To observe the inactivation effect of urine diverting toilets, a new type of toilets with inactivation effect on eggs of *Ascaris suum*, and to explore a new way of parasitic disease control which is cheap, effective and acceptable by farmers.

Methods

1. To observe the survival rate of eggs rationally and regularly in 10 household toilets, collecting samples once a month with the 'tea bag method'.
2. The survival rate of eggs collected was examined after cultured with 1% formaldehyde solution for three weeks and in room temperature of 10-30C ° . About 300 eggs were counted each time in every toilet and the number of eggs, dead and alive, was recorded respectively.
3. Parts of eggs were cultured in 1% formaldehyde solution as control group while observing the toilets with the tea bag methods. Each time the eggs in the tea bags were examined, one part of cultured eggs was used as control group.
4. The pH value in faeces was measured with the pH electrode method.
5. The water contents in faeces were measured with the dry weight method.

Results

1. The survival rates of *Ascaris suum* eggs buried with ashes in monitored manure pits were as follows: 96.66% (after 30 days), 51.35% (after 60 days), 10.62% (after 90 days), 6.18% (after 120 days) and 1.67% (after 180 days). No eggs survived after 90 days in five toilets. No living eggs were found after 120 days in two toilets and after 210 days in one toilet. Living eggs were still found in two toilets after buried for 300 days, but the number was very small.
2. The survival rates in control groups are as follows: 100% of the eggs developed as eggs in infection period after cultured for 30 days. The survival rate was 99.69% after 60 days, 96.62% after 180 days and 82.57% after 330 days (eleven months). The larvae are very active within the shells.
3. The relationship between egg survival and pH value and water contents: The survival rate in different toilets has direct relationship with the pH value and water contents, that is, the greater the pH value, the more effective the inactivation. The higher the water contents, the less the inactivation effect. The pH value was less than 8 and water contents was high in three toilets which still had living eggs after monitored for 180 days. This experimental observation has been carried out as the period is scheduled for one year.

Conclusion

The urine directing toilets have a good inactivation effect on parasitic eggs and protect the environment.