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**Survey of oncomelanid snails
(English Translation)**

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Foreword

This standard is formulated in accordance with the "Law of the People's Republic of China on the Prevention and Control of Infectious Diseases" and the "Regulations on the Prevention and Control of Schistosomiasis." this standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Drafting organizations of this standard. Chinese Center for Disease Control and Prevention, Institute of Parasitic Disease Control, Anhui Institute of Schistosomiasis Control, Hubei Provincial Center for Disease Control and Prevention, Jiangxi Provincial Institute of Parasitic Disease Control, Sichuan Provincial Center for Disease Control and Prevention, Jiangsu Provincial Institute of Schistosomiasis Control Research Institute, Guangdong Provincial Center for Disease Control and Prevention.

1 Scope

This standard specifies the methods and requirements for oncomelania investigation.

This standard applies to disease prevention and control institutions at all levels to organize oncomelania surveys.

2 Terms and definitions

The following terms and definitions apply to this document.

Oncomelania hupensis *Oncomelania hupensis* is the only intermediate host of *Schistosoma japonicum*, belonging to the phylum Mollusca, Gastropoda, Mesogastropod, Snail family, and genus *Oncomelania*.

It is a dioecious, oviparous, amphibious freshwater snail, usually referred to as *Oncomelania* snails in my country.

Infectious Oncomelania *Oncomelania* containing *Schistosoma japonicum* larvae and cercariae.

Systematic sampling survey A survey frame is set at a certain distance, and the area of each frame is about 0.1m² (0.33m×0.33m), and the snails in the frame are investigated.

Environmental Sampling Investigation Method Set up a survey frame in the environment where snails may breed, and investigate the snails in the frame.

Full inspection

There is no investigation frame, and a comprehensive investigation of the oncomelania situation in the environment.

Snail attraction

Carriers such as straw curtains are placed equidistantly in the survey environment to induce the snails to attach to the carriers to understand the distribution of the snails.

3 Investigation method

3.1

On-site investigation

4.1.1 Method selection

According to the purpose of the survey and the environment, choose appropriate methods to carry out the Oncomelania snail survey, including systematic sampling survey method, environmental sampling survey method, and the integrated sampling combined with the environmental random inspection method, the comprehensive detailed inspection method and the snail attraction method, etc., see Appendix A.

4.1.2 Oncomelania identification

According to the morphological characteristics, that is, the number of turns, length, direction of rotation, color of the snail shell, and the presence or absence of lip ridges and sanitary conditions, identify whether the seized snails are snails, see Appendix B.

4.1.3 Investigation records

All the snails in the frame are seized, and packed into snail bags on a frame basis. The name of the survey environment, type, frame number and survey date are marked outside the snail bag.

And use the global positioning system to locate the environment.

3.2 Laboratory testing

4.2.1 Identification of Oncomelania Survival Status

Use crawling method, percussion method, crushing method or warm water method to identify the survival status of the captured Oncomelania, see Appendix C.

4.2.2 Detection of Infectious Oncomelania

Use crushed microscopy or escape larval method to detect whether there are Schistosoma japonicum larvae and cercariae in Oncomelania snails, see Appendix C.

3.3 Survey results statistics According to on-site investigation and laboratory test results, statistics on live snail density, infectious snail density, live snail frame occurrence rate, oncomel snail infection rate, Indicators such as the area of snails and the area of infectious snails.

Appendix A

(Normative appendix) Oncomelania field investigation method A.1 Systematic sampling survey method the setting of the survey frame and the survey line and frame distance should be determined according to the type of survey environment and the size of the area. For rivers, ditches, ponds, depressions for the environment such as land, set a frame at an equal distance of 5m or 10m along rivers, ditches, ponds, and depressions along the perennial water level;

For beach and field environment, set up a number of parallel survey lines on the beach and fields, and then set a frame along the survey line at equal distances. Line distance and frame distance can be based on continent the size of beaches and fields is determined, generally 5m to 20m. When the beach area is large, the line distance and frame distance can be increased appropriately, but the maximum should not exceed 50m; The rivers and lakes and beaches with a particularly large area can be divided into several blocks, and then a systematic sampling survey is carried out in each environment. Systematic sampling the results of the investigation can be used to calculate the density of live snails, the density of infectious snails, and the occurrence rate of live snails.

A.2 Environmental spot check investigation method Establish a frame survey in the environment where snails may breed. For special environments such as mountains, graves, bamboo forests, etc., environmental spot checks can be used to investigate.

A.3 Systematic sampling combined with environmental spot check survey method when the systematic sampling survey method fails to find the oncomelania snails, a framed spot check will be conducted on some suspicious oncomelania breeding environments. Or in the systematic sampling process, the environment suitable for Oncomelania snail breeding should be framed and spot-checked, and the number of survey frames should be enough to make up for the missing-check errors caused by systematic sampling. Systematic sampling combined with environmental spot check the survey results can be used to calculate the

area of oncomelania and infectious snails.

A.4 Comprehensive inspection method no frame was set during the investigation, and all the suspicious oncomelania breeding environments were carefully checked. After the snails were found, a systematic sampling survey method was used for investigation. Generally used Identify areas where snails are close to extinction in endemic areas of schistosomiasis in Japan and small complex environments that are difficult to systematically sample.

A.5 Snail attracting method Straws are woven into square curtains with a size of 0.1m², and they are placed equidistantly on the nearshore water surface of river ditches or beach water surfaces according to the method of systematic sampling method.

Take it back after 3-7 days and check the snails and juveniles. This method is suitable for investigating the snail situation in beaches or rivers during the flood period, and can also be used to compare snail extermination the density of snails and young snails captured by the straw curtain before and after to observe the effect of snail control.

Appendix B

(Informative appendix) Identification of Oncomelania Certain snails that breed in the natural environment are similar in appearance to Oncomelania snails, and are easily confused with Oncomelania snails. Oncomelania should be to be identified (see Table B.1). Common snails similar to Oncomelania include. *Semisulcospira cancellata* Bonson (*Semisulcospira cancellata* Bonson, Commonly known as sea snails), true pipe snails (*Euphaedusa*, commonly known as smoke pipe snails), fine diamond snails (*Opeas gracile*, commonly known as cabbage snails), *Tricula*, Commonly known as the small black snail) and so on.

Appendix C

(Normative appendix) Laboratory testing of snails C.1 Identification of the survival status of Oncomelania

C.1.1 Crawling method Lay the straw paper on the bottom of the flat-bottomed porcelain plate, draw a circle with a diameter of 5 cm on the center of the straw paper, and add a little dechlorinated water to the porcelain plate to moisten the straw paper.

Place the snails in a circle on the straw paper, and place them at room temperature (20°C~25°C) for 24 hours, then observe the snails' crawling. If the snails are open Move or climb outside the circle, it is a live snail. Oncomelania snails that do not move in situ, use crushing or percussion methods to identify whether the snails are alive.

C.1.2 Percussion method Place the Oncomelania snail on a flat glass or hard object, and use a small hammer to lightly break it. If the soft tissue of the Oncomelania shrinks, it is a live snail.

It is a dead snail.

C.1.3 Crushing method Place the snails on the flat glass, put several snails on each slide,