

## Investigating fasciolosis in Cambodia and Laos

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Tropical fasciolosis caused by *Fasciola gigantica* occurs in most humid tropical regions of the world, particularly along the Mekong River in Southeast Asia. It is well known in Cambodia and has recently been diagnosed in upland buffalo in Laos (unpublished observations). Principal hosts are cattle and buffalo, although other domestic species and humans are also susceptible. The disease is important in Cambodia and potentially important in Laos, as in both countries, cattle and buffalo are used for draft power for the production of rice and other crops, manure as fertiliser and as a 'bank' for cash as required. Fasciolosis negatively impacts on productivity with affected animals having decreased weight and strength for draft, lower pregnancy rates and losses from carcass and liver condemnation in abattoirs.

The intermediate host of *F. gigantica* is the snail *Lymnaea acuminata*. This snail is commonly found in stagnant pools and swampy areas, including rice paddies as shallow slow-moving water promotes the propagation of snails and dissemination of the infection. Snails become infected from cattle manure deposited as fertiliser or when draught animals are preparing fields for planting. Cattle become infected by ingesting metacercariae on grass, water plants, rice stalks and straw or by drinking contaminated water. Recent studies on the prevalence of the disease in Cambodia has shown variation between provinces depending on their geographical location and farming practices, with clustering in central and southern Cambodia, particularly in the provinces of Kandal, Takeo and Krachech. Such data is not available for Laos. The major risk factor for infection is related to the number and distribution of cattle, presence of infected lymnaeid snails and grazing management practices. Other risk factors include inundation, proximity to rivers, agricultural land use, slope, elevation and density of cattle. Upland areas far from rivers are considered to be at lesser risk of infection as habitats are less suitable to snails.

Control depends on breaking the infection cycle where cattle are exposed to metecercarie from snails in dams and canals along riverbanks, as they move to the riverbank in May to prepare fields to plant rice and by using manure as fertiliser. Shedding of the metecercarie occurs two months later and infection in cattle resumes in August from consuming infected herbage and water from the canals. Rice stubbles fed to cattle after the harvest are also a source of infection from December to April. These studies suggest controlling fasciolosis in riverbank villages by using a single dose of triclabendazole in May when cattle are moved to the riverbank, as the drug is effective against immature and adult flukes. Alternatively, a drug that is only adulticidal could be dispensed in May and July. All animals sharing common grazing areas should be treated to reduce the number of eggs shed. The effectiveness of this disease control strategy is currently being tested in both Cambodia and Laos.