

Gene found that shows which malarial mosquitos will be killed by insecticides

UK scientists have identified genetic differences in malarial mosquitoes which may reveal their level of resistance to insecticides.

The findings may help to determine which malarial areas will and will not be helped by using insecticides.

The study, published in *Genome Research*, is by a group from the Liverpool School of Tropical Medicine. The team linked two genes for insecticide resistance in one type of malarial mosquito in Africa.

Those working at the front-line of malaria prevention in Africa and elsewhere have long relied on the pyrethroid insecticides, which are sprayed inside homes and on bed netting designed to keep mosquitoes at bay.

However, the rise of resistance in recent years has meant that pyrethroids are not as effective as they used to be.

Alternative insecticides are available, but it currently requires time-consuming testing to work out whether they are needed to tackle resistant mosquitoes in a particular area.

This research could make that decision easier by allowing a simple genetic test on small numbers of mosquitoes.

The study was carried out on the *Anopheles funestus* mosquito, one of the major carriers of the malaria parasite in large parts of Africa.

By studying strains of *A. funestus* known to be resistant to pyrethroids, and comparing their genetic code to those which have no resistance, they narrowed down the genetic differences to two that are involved in getting rid of toxins.

This is the first time these genes have been precisely pinned down.