Polypropylene-based long-life insecticide-treated mosquito netting

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The World Health Organization (WHO) is promoting the use insecticide treated nets (ITN's) in order to "Roll Back Malaria". Members of the class of pyrethroids are suitable insecticides for this application. Long-life netting is preferred and can be achieved by incorporating the active in the fibre polymer as demonstrated by Sumitomo's OlysetTM high density polyethylene mono filament based netting. This study considered the use multifilament polypropylene yarn. The advantage of the PP multifilament yarn is that it provides for a fabric with a softer feel. Processing temperatures in polypropylene fibres production often exceed 200 C. This disqualifies many WHO approved insecticides owing to insufficient thermal stability. This study reports on pilot scale tests that highlight problems associated with the manufacture of fibres containing temperature sensitive additives. Even at low dosage levels these additives have a pronounced effect on fibre properties. We also report on the performance of PP netting containing pyrethroid insecticides in WHO-recommended testing protocols.