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Physico-biological characteristics of breeding habitats of *An. culicifacies* and *An. subpictus* in Sri Lanka

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Physico-biological characteristics of breeding habitats of *An. culicifacies* and *An. subpictus* were studied from May 2007- April 2008. Larval surveys were carried out in potential breeding habitats of anopheline species at 24 localities in 11 districts, using dipping technique (6 dips/ m^2 surface area of water). Larvae in each habitat were collected in separate containers, staged and identified at the 3rd and 4th larval stages. 1st and 2nd stage larvae were allowed to develop to 3rd and 4th stages and pupae to adults and identified. At the time of larval surveys, water temperature and pH were measured. Also the quality of water (clear or turbid, stagnant, slow flowing or moderate flowing), exposure to sunlight ("fully exposed" = exposed to sun, "partly shaded" = penetrated sun light or "fully shaded" = not exposed to sun), presence or absence of predatory fish and aquatic vegetation were noted by observation. *An. cullicifacies* preferred river beds (94.84%), temperature of 26-33 ^{0}C (98.75%), pH of 5 and 6 (84.95%), clear (86.63%), stagnant (91.23%), sun exposed (92.48%) habitats that were devoid of predatory fish (94.98%) and aquatic vegetation (93.11%). *An. subpictus* preferred ground pools, hoof prints and river bed pools (85.47%), temperature of 30-33 ^{0}C (75.68%), pH of 6 (74.65%), turbid (62,66%), stagnant (100.0%) and sun exposed (87.63%) habitats that were also devoid of predatory fish (88.14%) and aquatic vegetation (81.96%). Since *An. cullicifacies* and *An. subpictus* preferred river beds, larval control in the river beds is of utmost importance in malaria control. Both species also preferred sun lit and stagnant waters of pH of 5-7 where there were no predatory fish and aquatic vegetation. Thus, anopheline larval control in such habitats is necessary for malaria control in the country. However, a considerable percentage of *An. cullicifacies* and *An. subpictus* were found in habitats where both predatory fish and aquatic vegetation are found. As the fish cannot reach the larvae in such habitats, removal of vegetation is necessary for effective use of larvivorous fish for anopheline larval control.

Keywords: *An. cullicifacies, An. subpictus,* characteristics of breeding habitats

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