Gonometa postica Walker (Lepidoptera: Lasiocampidae) is currently being utilised for commercial wild silk production in Eastern Kenya. The oviposition preferences of female *G. postica* on four substrates in a net-sleeved cage was studied in the laboratory in the long and short rainy seasons in 2007 for two generations, i.e. early (late March to April) and late flights (late September to October) of the moth. The first generation moths laid the highest number of eggs on net sleeves followed by plastic pot, twigs and wooden plank, whereas the second generation moths preferred wooden plank and net sleeves over the plastic pot and twigs. The mean number of eggs, egg clusters laid and percentage egg viability were significantly higher, and the oviposition period was longer for the first than the second generation moths. The mean weight of cocoons was significantly heavier for the first than the second generation. A highly significant positive linear relationship existed between the total number of eggs laid and the cocoon weight. The slopes of the two regression lines for the number of eggs laid against the weight of cocoons were significantly different between the two generations. This information serves to optimise the production of eggs in net sleeved cages in an indoor environment for the semi-captive rearing of the larvae.