Development and reproductive potential of diamondback moth 
Plutella xylostella (Lepidoptera: Plutellidae) on cultivated and wild 
crucifer species in Kenya


The development, survival and reproductive potential of diamondback moth Plutella xylostella (Linnaeus) were studied at 25 ± 1 8C in the laboratory in response to two cultivated Brassica oleracea cultivars (cabbage B. oleracea var. capitata and kale B. oleracea var. acephala) and four wild crucifer species Erucastrum arabicum, Raphanus raphanistrum, Rorippa nudiuscula and Rorippa micrantha. Rorippa micrantha was the most preferred species in oviposition choice tests, while cabbage and kale were least preferred. First instar larval mining period differed significantly between plant species with the longest period recorded on cabbage (3.0 days) and the shortest on R. micrantha (0.4 days). Pupal weight was significantly lower for larvae reared on R. nudiuscula, while those of the others were similar. The developmental period from first instar to adult was the shortest on R. micrantha (14.1 days) and the longest on R. raphanistrum (15.6 days). Survival to adult was not statistically affected by the host plant species. Adult longevity ranged between 18.2 days on R. raphanistrum and 24.7 days on R. nudiuscula. The females were significantly heavier than the males on all plant species. However, males lived longer than females. Moths reared on R. nudiuscula recorded the highest fecundity (326 eggs), while moths reared on cabbage had the lowest fecundity (262 eggs). Kale and R. nudiuscula recorded the longest generation time of 31.7 days, while E. arabicum had the highest net reproductive rate (126.4 eggs per day). The highest intrinsic rate of increase was calculated for R. micrantha (0.179) and the lowest for kale (0.147). This study shows the suitability of wild crucifers as hosts for P. xylostella and indicates that they may play a major role as reservoir for the pest during the absence of cultivated host plants.