

[방 제]

4-1. Comparative Evaluations on the Rapid Knockdown and Lethal Effects of Commercial Aerosols against German Cockroaches

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The knockdown and lethal efficacies of six Korean commercial aerosols including Combat Speed[®], Raid Power[®], Home Keeper[®], Supper Killer[®], Perma Kill-K[®], and Knockdown Gold[®] against five strains of the German cockroach, *Blattella germanica* (L.) were assessed. The active ingredients (AIs) of Combat Speed[®] are 0.1% imiprothrin and 0.3% cyphenothrin [(1R)-trans-isomers]. The AIs of Raid Power[®] are 1.0% pyrethrin and 0.2% permethrin. The AIs of Home Keeper[®] are 0.2% tetramethrin and 0.3% permethrin. The AIs of Supper Killer[®] are 0.32% tetramethrin and 0.08% bioresmethrin. The AIs of Perma Kill-K[®] are 0.3% dichlorvos and 0.1% tetramethrin. Also, the AIs of Knockdown Gold[®] are 0.45% dichlorvos and 0.15% tetramethrin. The efficacies were performed using a 0.3 gram spray tower test on 3-5 replications of 10 male German cockroaches in each chemical aerosol. The required period (seconds) for knockdown of 50% (KT₅₀) and the 90% (KT₉₀) of the cockroaches, and for 50% (LT₅₀) and the 90% (LT₉₀) mortalities were recorded. The results show that KT₅₀ (mean 5.4) of Combat Speed[®] was 4.5 and 4.2 times less than those of Perma Kill-K[®] and Knockdown Gold[®], respectively. The KT₉₀ (mean 9.0) of Combat Speed[®] was 4.3 to 5.8 times less than Perma Kill-K[®], Supper Killer[®] and Knockdown Gold[®]. As rapid knockdown effects, the LT₅₀ (mean 17.3) of Combat Speed[®] was over 26 times less than Supper Killer[®] and Perma Kill-K[®]. The LT₉₀ (mean 32.9) of Combat Speed[®] was 37.4 and 15.1 times less than those of Supper Killer[®] and Perma Kill-K[®], respectively. As a result of this study, Combat Speed[®] was considered the insecticide aerosol with faster knockdown and lethal effects than Supper Killer[®], Perma Kill-K[®] and Knockdown Gold[®] against five strains of German cockroaches in Korea. Also, the knockdown and lethal effects of Supper Killer[®], Perma Kill-K[®] and Knockdown Gold[®] were highly variable depends on the strains.