NOTE

Spot-on Treatments of Diflubenzuron and Permethrin to Control a Guinea Pig Louse, *Gliricola porcelli* (Phthiraptera: Gyropidae)[1]

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Guinea pigs, *Cavia porcellus* (L.) (Rodentia: Caviidae), are common pets and laboratory animals. They can be infested by a chewing louse, *Gliricola porcelli* (Schrank) (Phthiraptera: Gyropidae), which is fairly common in some animal rearing facilities, pet stores, and on wild guinea pigs (Sparrow 1976, Laboratory. Animals 10: 365 - 373; Dittmar 2002, J. Parasitol. 88: 409 - 411; Reeves et al. 2004, Zootaxa 647: 1 - 20). Lice are wingless ectoparasitic insects that can irritate and injure their hosts and transmit agents of diseases. Infestation with *G. porcelli* can lead to scratching, partial alopecia, and scabs around the ears (Diaz 2004, Laboratory. Animals 39: 331 - 335). In addition to irritating their hosts, some lice of rodents have been associated with pathogens (Reeves et al. 2006, J. Parasitol. 92: 313 - 318). Guinea pigs in a Missouri-based breeding facility were reportedly suffering from continuous severe infestations of *G. porcelli.* Facility managers used ivermectin to control the lice but were unable to achieve lasting control. Ivermectin is a macrocyclic lactone, and these insecticides have shown poor efficacy in controlling other chewing lice (Cleale et al. 2004, Vet. Parasitol. 120: 215 - 227). Chemical control of lice on laboratory rodents has been accomplished with a variety of insecticides including fipronil (Diaz 2004) and imidacloprid with moxidectin (Kim et al. 2008, Vet. Dermatol. 19: 187 - 188).

Insecticides in the class of benzoylphenylureas, such as diflubenzuron (Dimilin™) and triflumuron, are chitin synthesis inhibitors and are effective in controlling chewing lice. For example, Dimilin is effective in controlling *Bovicola bovis* L. on cattle (Campbell et al. 2001, Vet. Parasitol. 96: 155 - 164). We report on the insecticidal activity of Clean-Up™ (KMG Chemicals, Houston, TX), applied as a spot-on insecticide containing 5% Dimilin mixed with 5% permethrin in an oil-based solution, for the control of *G. porcelli* on naturally-infested guinea pigs. Clean-Up is specifically labeled for louse control in the USA but is not labeled for guinea pigs.

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We received 4 guinea pigs from the breeding facility. The hairs of the head and back of the guinea pigs were separated by hand, and lice were noted on all animals. Two of the animals were immediately euthanized, and lice were counted using a dissecting microscope. The animals were naturally infested with *G. porcelli* and a fur mite *Chirodiscoides caviae* Hirst (Acari: Atopomelidae). *Chirodiscoides caviae* is not considered a harmful ectoparasite of guinea pigs (Hirsjarvi and Phyala 1994, Laboratory. Animals 29: 200 - 203). Louse infestations were measured on each animal by counting all lice in a known area.

Both animals were treated with 0.15 ml of Clean-Up as a spot-on at the base of the neck and along the back-midline, and animals remaining in the facility were untreated as controls. Animals were observed 24 h post application to check for irritation. After 4 wks, a second louse count was made with a magnifying glass and lights. The hairs of the guinea pigs were separated by hand, and all lice were counted on the back and sides of the animal. This is similar to the methods used by Cleale et al. (2004) to count lice on cattle, but we reduced the method to a micro scale because the entire back and sides of a guinea pig can be examined.

The average louse infestation for the pretreatment guinea pigs was 3 lice per 2 cm^2 (range of 1 - 4 lice per 2 cm^2). The fur mite, *C. caviae,* was not enumerated. There were no lice found post treatment but, untreated animals in the breeding facility (untreated control) remained infested. Based upon our data, a spot-on application of a mixture of 5% Dimilin with 5% permethrin in an oil-based solution will control *G. porcelli* on guinea pigs.

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