

**EFFICACY REVIEW
HARTZ REFERENCE 123**

DATE: 07/06/05

FILE SYMBOL: 2596-RLL

DP BARCODE: D318726

DECISION NUMBER: 358347

REGISTRANT: Hartz Mountain Corporation

GLP: Yes

CHEMICAL: Dinotefuran (14.85%)

CHEMICAL NUMBER: 044312

PURPOSE: Provide efficacy data for product registration.

MRID: 46581608. Young, D. (2005) In Vivo Activity of Flea Dermal Treatments Against the Cat Flea (*Ctenocephalides felis*) on Cats. Study Number: 1714. Unpublished study prepared by Young Veterinary Research Services. 39p

46581609. Young, D. (2005) In Vivo Activity of Flea Dermal Treatments Against the Cat Flea (*Ctenocephalides felis*) on Cats Weighing Over 9lbs. Study Number: 1780. Unpublished study prepared by Young Veterinary Research Services. 21p

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BACKGROUND:

Hartz Reference 123 is intended for the treatment and prevention of fleas on cats and kittens 12 weeks of age or older. The directions for use state to evenly apply one spot on the cat's back the contents of one applicator tube. Upon completion of application, the cat should be held in an upright position for two minutes to prevent the loss of material. The application rate

for this product is 1.2 ml for cats weighing 9 pounds or less and 2 ml for cats greater than 9 pounds. The product should be repeated monthly, and must never be used on other animals. Label claims include: "Kills fleas within 24 hours", "Kills fleas for up to 30 days", "Kills fleas before they lay eggs", "Immediate Protection", and "Quick Kill".

DATA REVIEW:

The following data review is comprised of explanations of materials and methods, and a summation of experimental results containing tables with reformatted data.

46581608. Young, D. (2005) In Vivo Activity of Flea Dermal Treatments Against the Cat Flea (*Ctenocephalides felis*) on Cats. Study Number: 1714. Unpublished study prepared by Young Veterinary Research Services. 39p

The objective of this study was to determine the efficacy of dermal flea treatments against the cat flea (*Ctenocephalides felis*) on cats weighing 9 lbs or less. All treatments were comprised of a 15% dinotefuran solution delivered at either 1.2 or 1.7 ml per animal (six cats per treatment). Prior to test initiation, the flea host ability was determined for each cat, and all animals exhibiting low flea holding capacities were replaced. Applications were made on day 0 and were administered as described on the label. On days 0, 8, 15, 22, and 29 each cat was infested with 100 unfed adult fleas. Fleas were removed by combing on days 1, 9, 16, 23, and 30, and the number of infesting fleas was recorded for each animal.

Reported Results:

Table One. Mean Flea Counts and Percent Control for Cats Weighing 9 lbs or Less Treated with 15% Dinotefuran Solutions (at 1.2 or 1.7 ml/animal).

Day	Control (1.2 ml)	Treatment A (1.2 ml)	Treatment B (1.2 ml)	Treatment C (1.2 ml)	Treatment C (1.7 ml)
1	41.5	0.0 ¹ (100%)	0.0 ¹ (100%)	0.0 ¹ (100%)	0.0 ¹ (100%)
9	67.0	0.0 ¹ (100%)	0.0 ¹ (100%)	0.3 ¹ (99%)	0.4 ¹ (99%)
16	65.4	2.6 ¹ (96%)	0.3 ¹ (99%)	2.2 ¹ (97%)	1.7 ¹ (97%)
23	79.0	13.5 ¹ (83%)	1.5 ¹ (98%)	3.5 ¹ (96%)	4.3 ¹ (95%)
30	75.0	14.8 (80%)	7.8 ¹ (90%)	9.3 ¹ (88%)	8.4 ¹ (89%)

¹ significantly fewer from control (100* (GMC-GMT)/GMC)

Minus the cats treated with treatment A after 30 days, all treatments resulted in cats having significantly fewer fleas as compared to controls at days 1, 9, 16, 23, and 30.

It should be noted that evidence of “pooling” was observed at the point of application for one cat in the control groups, three cats in Treatment C (1.2 ml) groups, and five cats in Treatment C (1.7 ml) groups. In addition, substantial run-off was recorded from five cats in Treatment C groups (1.2 and 1.7 ml).

It should also be noted that two cats within Treatment C groups using 1.2 ml showed signs of excessive salivation, while two other cats had excessive tearing and sneezing. Four cats within Treatment C groups using 1.7 ml had excessive salivation, while two additional cats were recorded sneezing and tearing.

46581609. Young, D. (2005) In Vivo Activity of Flea Dermal Treatments Against the Cat Flea (*Ctenocephalides felis*) on Cats Weighing Over 9lbs. Study Number: 1780. Unpublished study prepared by Young Veterinary Research Services. 21p

The objective of this study was to determine the efficacy of dermal flea treatments against the cat flea (*Ctenocephalides felis*) on cats weighing 9 lbs or more. All treatments were comprised of a 15% dinotefuran solution delivered at either 1.5, 1.8, or 2.0 ml per animal (six cats per treatment). Prior to test initiation, the flea host ability was determined for each cat, and all animals exhibiting low flea holding capacities were replaced. Applications were made on day 0 and were administered as described on the label. On days 1, 8, 15, 22, and 29 each cat was infested with 100 unfed adult fleas. Fleas were removed by combing on days 1, 9, 16, 23, and 30, and the number of infesting fleas was recorded for each animal.

Reported Results:

Table Two. Mean Flea Counts and Percent Efficacy for Cats Weighing 9 lbs or More Treated with 15% Dinotefuran Solutions (at 1.5, 1.8, and 2.0 ml/animal).

Day	Control	Treatment A (1.5 ml)	Treatment B (1.8 ml)	Treatment C (2.0 ml)
1	70.6	0.1 ¹ (99%)	0.0 ¹ (100%)	0.0 ¹ (100%)
9	78.6	0.0 ¹ (100%)	0.1 ¹ (99%)	0.0 ¹ (100%)
16	72.9	1.4 ¹ (98%)	0.7 ¹ (99%)	0.2 ¹ (100%)
23	78.4	4.2 ¹ (95%)	0.8 ¹ (99%)	0.7 ¹ (99%)
30	83.5 ¹	25.6 ¹ (69%)	5.6 ¹ (93%)	3.7 ¹ (96%)

¹ significantly fewer from control ($100 * (GMC - GMT) / GMC$)

2

Minus the cats treated with 1.5 ml after 30 days, all treatments resulted in a 95% or better reduction of fleas as compared to the controls.

It should be noted that loss of material due to problems with hair penetration was recorded in one cat each from the control and treatment A groups and three cats each from treatment B and C groups.

RECOMMENDATIONS:

The submitted data supports the use of Hartz Reference 123 on cats for the treatment and prevention of fleas. The following recommendations apply:

1. The following claims are not supported by the data and must be deleted from the label:
 - *"Kills fleas before they lay eggs"*
 - *"Immediate Protection"*
2. All label claims mentioning *"kittens"* must clarify kittens over the age of 12 weeks.