

## The Comparative Efficacy of Two Rodenticides Against *Rattus norvegicus* Barkenhout and *Nesokia indica* Gray

AMIR SHAHPOUR VAZIRI & AHMAD FARID

Tehran Plant Pests and Diseases Research Inst. Djiroft, Kerman Agricultural Research Centre

### ABSTRACT

The efficacy of the two rodenticides, bromadiolone (0.005%) and chlorophacinone (0.006%) plus sulfaquinoxaline (0.019%) were compared with brodifacoum (0.005%), a chronic anticoagulant, and zinc-phosphide (2%) an acute toxicant, against *Rattus norvegicus* Barkenhout and *Nesokia indica* Gray under laboratory and field conditions.

The tests were conducted using 8 males and 8 females of both species for each treatment, which resulted in the death of all *R. norvegicus* between 1 to 11 days while *N. indica* perished within 1 to 10 days.

The trials were conducted in complete random blocks in five treatments and four replications in the cities of Karaj and Djiroft.

The laboratory and field trials show that the efficacy of both the newly tested rodenticides to control urban and field rodents were fairly satisfactory. The effect of bromadiolone on *N. indica* in the field was recorded 88.4% in Karaj and 90.13% in Djiroft while that of chlorophacinone plus sulfa-quinoxaline was 86% and 85.15% respectively in these areas.

### References

BUCKLE, A. P. R. and SMITH, 1994 Rodent pest and their control. C A B Inter.,

- 416 pp.
- BUSCHHAUS, H. B., 1984. Technical information on chlorophacinon plus sulfa-quinoxaline schering rodenticides 10 pp.
- CHITTY, D., 1954, Control of rat and mice. vol. I and II, Clarendon Press Oxford 532 pp.
- FITZWATER, W. D. I. and PRAKASH, 1989. Handbook of vertebrate pest control. Indian. Coun. Agri. Res. Publ, 103 pp.
- JENSON, A. G., 1979. Proofing of buildings against rats, mice and other pests. AD AS. Min. Agric. Fish. Food, HMso, London, 282 pp.
- GRAND, M. 1976. Experimental results on a new anticoagulant rodenticide bromadiolone. *J. Phytopharm*, 25: 152-156.
- GREAVES, J. H., M. A. CHOUDEY, and KHAN, 1977. Pilot rodent control studies in rice field in Sind, using five rodenticides. *J. Agro-Ecosystem*, 3: 119-130, 253-254.
- GREAVES, J. H., 1989. Rodent pest and their control in the Near East. *Bull. Food Agri. Organ., United Nations*, 112 pp.
- GIRISH, C. K. P. K., SRIVASTAVA, and K. KRISHNAMORTHY., 1972. Studies on rodents and their cont. VIII suceptibility of *Rattus rattus* to different anticoagulants. *Bull. Grain Tech.*, 10: 133-115.
- HOPPE, A. H. and KRAMBIAS, 1984. Efficacy of three new anticoagulants against *Rattus rattus* L. In: Proc. Conf. Practice Vert. Pest Cont., Dubock, A. C. (ed.), Hampshire, England, pp. 335-339.
- KHAN, A. A. S. AHMED, and M. A. CHOUDRY, 1984. Comparative evaluation of brodifacoum and bromadiolone against field rats in wheat and paddy crops. In: Proc. Conf. Practice Vert. Pest Cont. Dubock, A. C., Hampshire England, pp. 363-379.
- MARSH, R. E., 1976. Bromadiolone a new anticoagulant rodenticide. Joint FAO/WHO/EPPO conf. on rodent of Agric. and Public Health Conc. Geneva, (June 15-18)pp. 109-212.
- MARSH, R. E. W., HOWARD, ABD W. B. JACKSON, 1980. Bromadiolone a new

toxicant for rodent. control. *J. Pest Control*, 48: 22-26.

MEEHAN, A. P., 1984. Rat and Mice: Their Biology and control. Rentokil Library Publ., 383 pp.

PRAKASH, I. P. and R. P. MATHUR, 1987. Management of rodent pests. *Indian Coun. Agric. Res. Publ. Div.*, 133 pp.

REDFERN, R. and J. E., GILL, 1980. Laboratory evaluation of bromadiolone as a rodenticide against warfarin-resistant and non-resistant rats and mice *J. of hygiene* 84: 263-262.

RICHARDS, C. G. J., 1981. Field trials of bromadiolone against infestations of warfarin resistant *Rattus norvegicus* *J. Hygiene*, 86: 361-363.

TAGHIZADEH, F., 1982. Identification of harmful rodents and their control in Iran. *Minst. of Agric. Publ.*, 82 pp.

TONGTAVEE, K., 1984. Experience with brodifacoum in laboratory and field conditions in Thailand. In: prov. Conf. Practice Vert. Pest Cont. Dubock, A. C. (ed.) Hampshire England, 357-362.

VAZIRI, A. S., 1983. A study on biology and economic importance of *Nesokia indica* in Iran. *Ann. Sci. Rep., Deptt. Agric. Zoology.*, Plant Pests and Diseases Res. Inst.

---

Address of the authors: Eng. A. S. VAZIRI. Research Department of Agricultural Zoology, Plant Pests and Diseases Research Institute P. O. Box 19395, tehran 1454, Iran.

Eng. A. FARID. Kerman Agricultural Research Centre, Djiroft, Iran.