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Experimental research on the grassland rodent control by a way of training the *vulpes fulva* return to a wild state

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Key words : *Vulpes fulva*, running wild training, rodent control, research, grassland

Abstract In this case, the healthy artificial fed *Vulpes fulva* were selected and trained indoors, outdoors, as well as the survival exercises in an imitated wild environment. Then these *Vulpes fulva* were released to the native grassland that had been damaged critically by the rodents for the rodent control. Based on the observation results, it showed that the effect was remarkable.

Trial materials and methods : During the year 2003 to 2006, Ningxia technicians selected some healthy artificial fed *Vulpes fulva* and trained for 3 stages of indoor selection exercises, outdoor suitability training, and survival exercises in an imitated wild environment. These trained *Vulpes fulva* were released then to the native grassland damaged critically by the rodents for the rodent control experiments and research.

Findings and results Running wild training results : After the three training stages, it displayed that the *Vulpes fulva* were sensitive to the roaring of the *Ochotona daurrica*, *Lepus capensis*, *Phasianus colchicus*, etc. They could bite into the throat or head of the prey at one beat and made the prey die in 5—10 seconds; Their burrowing capacity were improved when the third stage training completed. Each *Vulpes fulva* could burrow 5 holes in average and make 10 holes for temporary use with a max. depth of 1.75m; The reaction to the menace sounds or behavior made by human and other animals was sensitive. They have good consciousness to escape into the holes, tussocks or any blindage under a tree within 0.5 to 2 minutes; The wild vespertine behavior was evident that they rested during the time of being 10:00—18:30 or 22:00—1:30, and acted around 2:00—9:30 or 18:00—22:00; Their olfaction were ingenious and the ability of finding food and water was satisfying, they could find out the hidden *Ochotona daurrica* and water resource in a far place, they also could catch a *Lepus capensis* within 2 minute. It was found that they had powerful survival ability in a wild environment according to the observation results taken from the 14 experimental areas of Ningxia, Inner Mongolia and Shanxi provinces concerned on food seizing, water searching, burrowing, escaping the enemy, fighting to the hunger, thirsty, the disease and so on.

Rodent control effect according to the *Vulpes fulva* excremental groups collected from 5 release points, the average bones content occupied 26.49%, the mean rats (rabbits) hair content was 57.76%, the average bird feather content was 0.56%, the mean forage seeds and leaves content was 6.41%, and the indistinctioned odds and ends was 8.76%. The wild reproductive capacity and the ability of raising the young were normal. It was found by tracking observation that 18 *Vulpes fulva* released in Oct., 2003 and Oct., 2004 had given births to 19 young of 8 nests, of which 18 young were alive. The survey showed that the rats valid holes were 264/ha before the foxes released, and none of the rats valid holes founded after half a year; *Lepus capensis* (wild rabbits) density reduced from 1/ha to 0.3/ha; The ground rats density on the typical grassland dropped from 69/ha to 3/ha; the underground zokor density reduce from 14/ha to 8/ha. projection based on the *Vulpes fulva* movement radius, the effective rodent control area for each trained fox would be 1000—1200ha. With consideration of the expected life time of the foxes, controllable area and training cost, the cost for rodent control by using the trained foxes would be 0.3 Yuan /ha. It would play an active role of steadying the grassland ecological food cycle also.

Discussion Although the experiments has achieved a remarkable effect, the observe means are still not enough for the released fox ethnology research. It still needs promoting the observation and monitoring measures for rodent control.

Reference

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