Growth and development of the Kunlun type of wild yak

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Summary
The observation of body height and weight of 10 captured wild yak shows the body height and weight of the wild yak at three and four months old were similar with that of domestic yak. At their 24 months old, the body height and weight were higher by 26.9% and 62.5% than that of the domestic ones. The results indicate that, once adapted to the half-shed and half-grazing conditions, the tamed Kunlun type of wild yak with superior genetics would growth and develop faster than the domestic yak at elder ages.
Keywords: Kunlun type, wild yak, taming, growth, development

Introduction

It is believed that the extant wild yak in China is the ancestor of domestic yak. Lu Zhonglin and Li Kongliang (1994) classified the wild yak in China into two ecological types of the Qilian and Kunlun ones. With big and strong body, a matured wild yak bull has a body height of 165-200 cm and a body weight of 500-600 kg. A maximum body weight of the Kunlun type of the wild yak was recorded by 1200 kg. The successful taming and utilization of the wild yak began in the 1980s.

Crossbreeds between the wild bulls and domestic cows showed a significant hybrid vigor and also normal reproductivity. The birth weight of F1 generation increased by 30.8% compared to that of domestic yak. They are tolerant to cold weather and harsh environments and can utilize pasture at higher altitudes in warm season. Crossbreeding wild yak with domestic yak is a simple and feasible way to improve the productivity of the domestic yak. In recent years, the demand for wild blood yak bulls has been increasing, therefore it's very important to tame and reproduce some pure wild yak.

A few of the Qilian type of the wild yak bulls were successively tamed in 1986 and have been used for more than 15 years. They are too old to produce qualified semen. In this case, to capture and tame a new generation of wild yak to provide frozen semen of pure blood wild yak are necessary. Ten Kunlun type of the wild yak were captured in Qumalai county of Yushu Prefecture of Qinghai Province and tamed on Datong Yak Breeding Farm since August 1999. This paper describes the observation of growth and development during the period of rearing of these animals.

Materials and methods

Ten Kunlun type of the wild yak were captured from Qumalai county of Yushu Prefecture in May 1999, and the observation and measurement were started at their three months age on the Datong farm. The animals were kept and tamed under half-shed and half-grazing conditions and managed by a specifically assigned person. They were immunized twice per year.

The body height, body length, heart girth, cannon bone circumference and body weight were recorded at their 3, 4, 8, 18, 20 and 24 months old. Data was analyzed by Excel statistics program.

[*] Biography: Li Jiye (1964-), male, senior veterinarian, transfer and breeding of embryo as the main study field.

Results and discussion

The breeding season of the wild yak is from July to September and calf is born from March to June the following year. The captured newborn yak calves were from a group of tracked down wild yak, so 1st May was regarded as the tentative birth date of these animals (**Table 1**).

Compared to the growth and development of domestic yak (Zhang Rongchang, 1989), we found that the body height of the wild yak at four months old was higher by 8.3% than that of domestic yak, however, the body weight was lower by -18.9%. At their 24 months old, the body height and weight were higher by 26.9% and 62.5% than that of the domestic ones. The results indicated that, once adapted to the half-shed and half-grazing conditions, the tamed Kunlun type of wild yak would growth and develop faster than the domestic yak at elder ages. This could be one of the reasons that the crossbreeds between the wild and domestic yak show a better productivity than the pure domestic yak.

Table 1. Measurements of the Kunlun type of wild yak.

Age (month)	No.	Height (cm)	Length (cm)	Heart girth (cm)	Cannon bone circumference (cm)	Weight (kg)
3	10	76.7 ± 7.8	71.8 ± 4.8	81.7 ± 4.5	10.4 ± 0.5	
4	10	80.6 ± 6.3	78.0 ± 9.8	86.8 ± 5.2	11.4 ± 0.4	39.1 ± 3.5
8	5	88.0 ± 2.3	92.1 ± 3.6	109.9 ± 7.5	12.6 ± 0.7	53.5 ± 15.9
18	4	102.5 ± 2.6	110.5 ± 2.6	131.0 ± 6.2	13.8 ± 0.5	133.9 ± 14.7
20	4	110.8 ± 3.3	116.5 ± 3.9	138.9 ± 8.6	14.4 ± 0.9	152.6 ± 26.8
24	3	140.0 ± 2.6	143.3 ± 2.5	187.3 ± 16.2	18.8 ± 1.0	399.0 ± 46.7

Death rate from three-month to twenty-four-month of age of the captured wild yak was 60% (6/10). The autopsy showed that two died from brain warming/heating, one from eating foreign bodies (plastic, rubber gloves etc.), two from dysentery and one from liver damage during capture.

It was very difficult for the young wild yak to adapt to the captive management. At the early feeding period (before six-month age), they grazed freely and were supplemented by 2.5 kg of milk daily. The wild yak which live at higher altitude of 3900 m where there is almost no human occupation have less chance to be infected by epidemic diseases. However, the captured calves seemed to have more chance to be challenged by epidemic diseases at the altitude of 2900 m of the Datong farm, possibly due to their limited access to the colostrum to help to mount an effective immune response and the significant change in environmental conditions. Also possibly because of insufficient amount of elements, the tamed calves took foreign bodies for either demand or curiosity. These factors should be taken into consideration of management of the captured calves of the wild yak in the future.

References

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