

ABSTRACT

The main purpose was describe the issue of shooting success rate at high altitude (1 500 - 3 000m a. s. l.).

Shooting success rate of elite racers was evaluated using analysation of results from individual races at high altitude in the period 1990/1991 - 2013/2014. High altitude had no statistical effect ($p<0,05$) on shooting success rate of women and men biathletes in the comparision with lowland but it had more negative effect to women shooting success rate than men shooting success rate.

Ten national level biathletes were tested in three tests in lowland, four tests at high altitude and five tests in lowland after the return from high altitude. The test included rest shooting in the prone and standing positions and load shooting in both positions which took part of three kilometers running. Twelve days training camp at high altitude did not improve shooting success rate, shooting velocity and running time in the determinated heart rate. Rest shooting and shooting in the prone position did not change statistically during the whole testing period. At high altitude critical days were registered in load shooting in standing position (6th day, $p<0,05$) and average running time (9th day, $p<0,05$).

Rifle manipulation and shooting are automate motions which are not influenced by high altitude. Most probably high altitude has minimal effect to fine motor because rest shooting did not change statistically during the testing time. Apparently performance level has an influence to shooting success rate at high altitude. The best trained biathletes are rapidly adapt to conditions of high altitude and exahustion starts later. It is the reason why they have more stable portural stability which is important especially in the standing shooting position. High trained biathletes are able to decrease faster their heart rate before the shooting. It is important precondition for success shooting especially in standing position.

Key words: Rifle, shooting in prone position, shooting in standing position, rest shooting, load shooting, performance