Sumana Worawong, 2008: The Effects of Royal Jelly on the Aerobic Performance of Football Players. Master of Science (Sports Science), Major Field: Sports Science, Interdisciplinary Graduate Program. Thesis Advisor: Miss Apasara Arkarapanthu, Ph.D. 138 pages.

The objective of this research was to study the effects of royal jelly on the aerobic performance of football players. The sample population was 24 male volunteers aged from 13 to 14 years who were football players at Suphanburee sports school. The volunteers were randomly assigned into three experimental groups. The PLACEBO group practised using a football training program and received polyethylene glycol 4000 as a placebo. The RJ500 group received royal jelly (500 mg per day) and practised using the football training program. The RJ1000 group received royal jelly (1,000 mg per day) and practised using the football training program. Either the placebo or the royal jelly was taken after breakfast and dinner for eight weeks. The study was conducted using a randomized, triple blind, placebo-controlled design. The differences between groups and the changes within groups of the maximal oxygen consumption ($\dot{V}O_2max$) and anaerobic threshold (AT) were analysed using both a two-way and one-way ANOVA with repeated measures and also a one-way ANOVA. Multiple comparisons were performed using the Tukey method at the 0.05 level of significance.

The major findings were: 1) after both the 4 and 8 week treatment periods regardless of whether the treatment was the placebo or royal jelly, $\dot{V}O_2max$ and AT for all three groups were significantly higher than before receiving the treatment; 2) between groups, $\dot{V}O_2max$ and AT of the RJ1000 group tended to be higher than for the RJ500 group and the RJ500 group tended to be higher than for the PLACEBO group, indicating a dose-response relationship; 3) moreover, after receiving the treatment for four weeks, there was almost a significant difference between the three groups (p=0.08 and 0.06 respectively) when $\dot{V}O_2max$ and AT were expressed per kg of body weight; 4) in addition, the body weight and fat-free mass of the RJ1000 group showed a significant increase from the base line after receiving 1,000 mg/d of royal jelly for four weeks.

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