

## PENGARUH KONSUMSI MADU SELAMA PROGRAM LATIHAN AEROBIK TERHADAP PERFORMA LATIHAN SUBJEK PEMULA

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### INTISARI

**Latar belakang:** performa latihan dapat dinilai berdasarkan  $VO_{2,max}$  dan denyut jantung saat melakukan latihan (Levitzky, 2007). Madu merupakan sumber energi dan vitamin yang dapat membentuk energi cepat dalam tubuh saat latihan jangka panjang tanpa memberikan efek samping (Yosef dan Shalaby, 2010). Konsumsi madu dengan dosis 1,5 mg/kg berat badan/hari dapat memelihara kekuatan otot, stamina dan mencegah kelelahan lebih dini pada saat pertandingan (Yosef dan Shalaby, 2010).

**Tujuan:** mengetahui pengaruh konsumsi madu selama program latihan aerobik terhadap performa subjek pemula dengan ditunjukkan nilai frekuensi denyut jantung pada saat uji performa, nilai  $VO_{2,max}$  serta waktu pencapaian *anaerobic threshold*.

**Metode:** penelitian quasi-eksperimental *pretest-posttest control group design*. Subjek adalah 16 mahasiswa STIKes Madani Yogyakarta, kemudian dibagi menjadi 2 kelompok yaitu kelompok madu (kelompok perlakuan) dan kelompok isotonis. Kedua kelompok melakukan latihan aerobik lari selama 30 menit, 2 hari sekali selama 27 hari. Uji performa dilakukan untuk mengukur  $VO_{2,max}$ , denyut jantung dan waktu pencapaian *anaerobic threshold*. Analisis data yang dipakai adalah *Repeated anova*.

**Hasil Penelitian:** hasil analisis *Repeated annova* nilai  $VO_{2,max}$  madu  $p=0,04$  dan kelompok kontrol  $p=0,103$ . Frekuensi denyut jantung kelompok madu  $p=0,03$  sedangkan kelompok kontrol  $p=0,18$ . Rerata waktu pencapaian *anaerobic threshold* kelompok madu berada pada menit ke-8 sedangkan kelompok kontrol pada menit ke 5.

**Kesimpulan:** konsumsi madu selama program latihan dapat meningkatkan  $VO_{2,max}$ , menurunkan frekuensi denyut jantung pada beban maksimal yang sama serta meningkatkan waktu pencapaian *anaerobic threshold*.

**Kata kunci:** Madu, Performa latihan,  $VO_{2,max}$ , waktu pencapaian *anaerobic threshold*, frekuensi denyut jantung.

## THE EFFECTS OF HONEY CONSUMPTION ON PERFORMANCE DURING AEROBIC EXERCISE FOR THE BEGINNER

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### ABSTRACT

**Background:** performance of aerobic exercise can be assessed based  $VO_2$ .max and heart rate during a workout (Levitzky, 2007). Honey is a source of energy and vitamins that can form quickly in the body's energy on a long-term exercise without side effects (Joseph and Shalaby, 2010). Consumption of honey every day with a dose of 1.5 g/Kg body weight can maintain muscle strength, stamina and prevents early fatigue during exercise (Yosef and Shalaby, 2010).

**Research methods:** the design research is quasi-experimental pre-post test control group. The subjects of the research are 16 students of STIKes Madani Yogyakarta, who are divided into 2 groups which are the honey and isotonic group. Both groups perform aerobic exercise of 30-minute run every other day for 27 days. The performance test done to measure  $VO_2$ .max, heart rate of maximum load and Onset blood lactate accumulation (anaerobic threshold). Repeated ANOVA test are used for data analysis.

**Results:** based on the results of repeated ANOVA analysis showed that the  $VO_2$ .max value in the honey group is  $p = 0.04$  and the control group is  $p = 0.10$ . Heart rate of honey group is  $p = 0.03$  while the control group is  $p = 0.18$ . Average of onset blood lactate anaerobic threshold in the honey group at the 8<sup>th</sup> minute, while the control group at the 5<sup>th</sup> minute.

**Conclusion :** from this research, it is concluded that honey consumption during exercise program can improve  $VO_2$ .max, lowering the heart rate of maximum load and improve onset blood lactate anaerobic threshold.

**Keywords:** honey, performance of aerobic exercise,  $VO_2$ .max, heart rate of maximum load, onset blood lactate accumulation (anaerobic threshold).