

**PENGARUH PEMBERIAN SARI BENGKUANG (*Pachirhyus erosus*) DAN KEFIR GRAINS SEBAGAI MINUMAN SINBIOTIK TERHADAP KADAR MALONDIALDEHYDE (MDA) DAN SUPEROXIDE DISMUTASE (SOD) HEPAR TIKUS YANG DIINDUKSI HIPERLIPIDEMIA**

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**INTISARI**

**Latar Belakang:** Keadaan hiperlipidemia memberikan dampak yang buruk bagi organ hepar. Keadaan hiperlipidemia dapat menyebabkan peningkatan kadar radikal bebas dan berefek terhadap kerusakan jaringan hepar. Salah satu penatalaksanaan yang dapat dikembangkan adalah dengan memanfaatkan produk sinbiotik. Sinbiotik adalah produk kombinasi prebiotik dan probiotik yang telah terbukti dapat menurunkan kadar profil lipid. Salah satu contoh prebiotik adalah inulin yang berasal dari sari bengkuang (*Pachirhyus erosus*) dan probiotik adalah kefir grains. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian sari bengkuang dan kefir grains sebagai minuman sinbiotik terhadap kadar Malondialdehyde (MDA) dan Superoxide dismutase (SOD) Hepar Tikus Hiperlipidemia.

**Metode:** Metode penelitian yang digunakan berupa eksperimental dengan *post-test only with control group design*. Terdapat 25 ekor tikus Wistar jantan yang dibagi ke dalam 5 kelompok yakni kontrol positif (K+), kontrol negatif (K-), P1, P2 dan P3. Kelompok K+, P1, P2 dan P3 diinduksi kuning telur puyuh dengan dosis 5ml/200grBB selama 4 minggu. Setelah itu, kelompok intervensi diberi minuman sinbiotik dengan dosis 5ml/200grBB selama 4 minggu dengan formulasi P1: 85% susu kefir (S) 15% sari bengkuang (B), P2: 75% S 25% B, P3: 65% S 35% B. Kadar MDA dan aktifitas SOD organ hepar tikus semua kelompok di cek pada akhir penelitian dan data yang didapatkan dianalisis dengan aplikasi statistik.

**Hasil:** Hasil penelitian menunjukkan rata-rata kadar MDA hepar (nmol/ml) 11,8±0,17 (K+), 2,5±0,12 (K-), 7,7±0,18 (P1), 5,7±0,10 (P2), 4,1±0,09 (P3) dan rata-rata aktifitas SOD hepar (%) 21,43±2,52 (K+), 71,43±3,91 (K-), 30,71±1,53 (P1), 50,35±2,84 (P2), 63,93±1,53 (P3). Hasil analisis *one-way ANOVA* menunjukkan terdapat perbedaan yang signifikan antar semua kelompok untuk kadar MDA ( $p < 0,001$ ). Sedangkan pada aktifitas SOD terdapat perbedaan antar semua kelompok kecuali antara K+ dan P1 serta K- dan P3 ( $p > 0,05$ ).

**Kesimpulan:** Pemberian kombinasi sari bengkuang dan kefir sebagai minuman sinbiotik berpengaruh terhadap kadar MDA dan aktifitas SOD hepar tikus hiperlipidemia.

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**Kata Kunci:** Bengkuang, Kefir, Hiperlipidemia, Malondialdehid, Superoksida dismutase

**THE EFFECT OF JICAMA CONCENTRATE (*Pachirhyus erosus*) AND KEFIR GRAINS AS A SYNBIOTIC DRINK ON MALONDIALDEHYDE (MDA) LEVEL DAN SUPEROXIDE DISMUTASE (SOD) IN LIVER OF HYPERLIPIDEMIC RATS**

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**ABSTRACT**

**Background:** The condition of hyperlipidemia has a bad impact on the liver organs. The condition of hyperlipidemia can lead to increasing the levels of free radicals and have an effect on damage to the liver tissue. One of the management that can be developed is by utilizing synbiotic products. Synbiotics are a combination product of prebiotics and probiotics that have been shown to reduce levels of lipid profiles. One example of prebiotics is inulin derived from jicama (*Pachirhyus erosus*) and probiotics are kefir grains. The aims of this research is to know the effect of jicama concentrate and kefir grains as a synbiotic drink on malondialdehyde (MDA) level and superoxide dismutase (SOD) in liver of hyperlipidemic rats.

**Method:** The research method was used experimental with post-test only with control group design. There were 25 male Wistar rats divided into 5 groups; positive control (K +), negative control (K-), P1, P2 and P3. Groups of K +, P1, P2 and P3 were given quail egg yolk with a dose of 5ml/200grBB for 4 weeks. After that, the intervention group was given a synbiotic drink with a dose of 5ml/200grBB for 4 weeks with formulation P1: 85% kefir milk (S) 15% yam juice (B), P2: 75% S 25% B, P3: 65% S 35 % B. The level of MDA and SOD activity in all groups were checked at the end of the research and the data obtained were analyzed by statistical applications.

**Result:** The results showed the mean of MDA levels (nmol / ml) were  $11.8 \pm 0.17$  (K +),  $2.5 \pm 0.12$  (K-),  $7.7 \pm 0.18$  (P1),  $5, 7 \pm 0.10$  (P2),  $4.1 \pm 0.09$  (P3) and mean of SOD activity (%)  $21.43 \pm 2.52$  (K +),  $71.43 \pm 3.91$  (K- ),  $30.71 \pm 1.53$  (P1),  $50.35 \pm 2.84$  (P2),  $63.93 \pm 1.53$  (P3). The results of one-way ANOVA analysis showed that there were significant differences between all groups for MDA levels ( $p < 0.001$ ). Whereas in SOD activity there were differences between all groups except between K + and P1 and K- and P3 ( $p > 0.05$ ).

**Conclusion:** intervention of jicama concentrate and kefir grains as a synbiotic drink has an effect on MDA levels and SOD activity in liver of hyperlipidemic rats.

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**Keywords:** *Pachyrhizus erosus*, Kefir, Hyperlipidemia, Malondialdehyde, Superoxide Dismutase