

## PERBEDAAN PENGARUH PEMBERIAN TABLET FE DAN BEEFE POWDER (INSTAN JUS BIT) PADA FASE LUTEAL DAN FASE MENSTRUASI TERHADAP KADAR HEMOGLOBIN ATLET REMAJA PUTRI

Nia Bactiar<sup>1</sup>, Mirza Hapsari S.T.P<sup>2</sup>, B.J. Istiti Kandarina<sup>3</sup>

### INTISARI

**Latar belakang:** Asupan zat besi yang tidak adekuat dapat menyebabkan defisiensi zat besi yang berakibat menurunnya kapasitas aktivitas fisik seseorang. Defisiensi zat besi dapat diidentifikasi dengan pengukuran kadar hemoglobin. Atlet wanita memiliki resiko defisiensi zat besi yang lebih tinggi. Suplementasi zat besi dilakukan sebagai upaya penanganan defisiensi zat besi. Bit (*Beta vulgaris L.*) diketahui sebagai salah satu sumber alami zat besi, namun kandungannya lebih rendah dibandingkan dengan tablet Fe. Oleh karena itu, dilakukan penelitian mengenai pengaruh minuman bit terfortifikasi dibandingkan dengan suplementasi tablet Fe terhadap kadar hemoglobin atlet remaja putri.

**Tujuan:** Mengetahui pengaruh dan perbedaan pengaruh pemberian minuman instan jus bit (*BeeFe powder*) dan suplementasi tablet Fe pada fase luteal dan fase menstruasi terhadap kadar hemoglobin atlet remaja putri.

**Metode:** Penelitian ini merupakan uji *quasi experimental* dengan rancangan *control trial with pre-post test design* terhadap 29 atlet remaja putri di Yogyakarta. Pemberian intervensi dilakukan selama 14 hari, yaitu 7 hari fase luteal dan 7 hari fase menstruasi subjek. Pengukuran kadar hemoglobin dilakukan sebanyak dua kali, yaitu sebelum dan setelah intervensi. Selain itu juga dilakukan penggalan riwayat konsumsi makanan dan *inhibitor* zat besi menggunakan *Semi Quantitative Food Frequency Questionnaire (SQ-FFQ)*, serta penggalan aktivitas fisik dengan *International Physical Activity Questionnaire (IPAQ)*.

**Hasil:** Kadar hemoglobin pada kelompok pemberian instan jus bit (*BeeFe powder*) tetap/tidak meningkat maupun menurun ( $13,38 \pm 0,82$  gr/dL), sedangkan kadar hemoglobin pada kelompok pemberian tablet Fe justru mengalami penurunan ( $13,17 \pm 1,07$  gr/dL). Meskipun demikian, hasil uji statistic tidak menunjukkan adanya perbedaan yang signifikan pada kedua kelompok perlakuan ( $p > 0,05$ ).

**Kesimpulan:** Tidak terdapat pengaruh dan perbedaan pengaruh yang signifikan pada pemberian instan jus bit (*BeeFe powder*) dan tablet Fe terhadap kadar hemoglobin atlet remaja putri.

**Kata kunci:** Instan Jus Bit (*BeeFe powder*), Tablet Fe, Kadar Hemoglobin, Atlet Remaja Putri

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<sup>1</sup>Mahasiswa Program Studi Gizi Kesehatan FK-KMK Universitas Gadjah Mada

<sup>2</sup>Dosen Program Studi Gizi Kesehatan FK-KMK Universitas Gadjah Mada

<sup>3</sup>Departemen Biostatistik, Epidemiologi, dan Kesehatan Populasi

## DIFFERENCE EFFECT OF IRON TABLET AND *BEEFE POWDER* (BEETROOT INSTANT JUICE) SUPPLEMENTATION IN LUTEAL AND MENSTRUAL PHASE ON HEMOGLOBIN LEVELS OF FEMALE ADOLESCENT ATHLETE

Nia Bactiar<sup>1</sup>, Mirza Hapsari S.T.P<sup>2</sup>, B.J. Istiti Kandarina<sup>3</sup>

### ABSTRACT

**Background:** Inadequate iron intake can cause iron deficiency which can decrease physical activity capacity. Iron deficiency can be identified by measuring hemoglobin levels. Female athletes have a higher risk of iron deficiency. Iron supplementation used as an effort to treat iron deficiency. Beetroot (*Beta vulgaris L.*) is known as one of the natural sources of iron, but its content is lower than commercial iron tablets. Therefore, a study was conducted on the effect of fortified beetroot drinks compared to supplementation of commercial iron tablets on the hemoglobin levels of female adolescent athletes.

**Objective:** To determine the effect and difference in effect of beetroot instant juice (*BeeFe powder*) and iron tablet supplementation in luteal and menstrual phase on hemoglobin levels of female adolescent athlete.

**Methods:** This study is a quasi-experimental test using control trial with pre-post test design for 29 female adolescent athletes in Yogyakarta. The intervention was carried out for 14 days, 7 days luteal phase and 7 days menstrual phase of the subject. Blood sampling were withdrawn before and after intervention. In addition, a history of food intake and iron inhibitors was carried out using Semi Quantitative Food Frequency Questionnaire (SQ-FFQ), and physical activity with International Physical Activity Questionnaire (IPAQ).

**Results:** The hemoglobin level in the group of beetroot instant juice (*BeeFe powder*) remained/did not increase or decrease ( $13.38 \pm 0.82$  mg / dL), while the hemoglobin level in the group iron tablets supplementation actually decreased ( $13.17 \pm 1.07$  mg / dL). Nevertheless, the results of the statistical tests did not show any significant differences in the two treatment groups ( $p > 0.05$ ).

**Conclusion:** There was no significant effect and difference effect of beetroot instant juice (*BeeFe powder*) and iron tablets supplementation on hemoglobin level of female adolescent athletes.

**Keywords:** Beetroot Instant Juice (*BeeFe powder*), Iron Tablets, Hemoglobin, Female Adolescent Athlete

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<sup>1</sup>Undergraduate student of Health Nutrition Dept. FK-KMK Universitas Gadjah Mada

<sup>2</sup>Lecturer of Health Nutrition Dept. FK-KMK Universitas Gadjah Mada

<sup>3</sup>Department of Biostatistics, Epidemiology and Population Health