

**PENGARUH KONSUMSI *COOKIES* GARUT (*Marantha arundinaceae*)  
DENGAN GLUKOMANAN PORANG TERHADAP INDEKS  
ATEROGENIK PLASMA PENYANDANG DIABETES MELITUS TIPE 2**

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**INTISARI**

**Latar Belakang:** Penyandang Diabetes melitus tipe 2 (DMT2) beresiko mengalami komplikasi seperti dislipidemia dan aterosklerosis jika tidak menjalankan terapi gizi dengan baik. Makanan tinggi serat dinilai mampu mencegah terjadinya komplikasi tersebut. *Cookies* garut dengan glukomanan porang terbuat dari tepung umbi garut dan glukomanan porang yang kaya serat diduga mampu menurunkan resiko aterosklerosis penyandang DMT2.

**Tujuan:** Mengetahui pengaruh konsumsi *cookies* garut dengan glukomanan porang selama 8 minggu terhadap indeks aterogenik plasma (IAP) penyandang DMT2.

**Metode:** Penelitian ini adalah penelitian quasi eksperimental dengan kelompok kontrol. Subjek adalah penyandang DMT2 yang rutin kontrol ke puskesmas di Kota Yogyakarta, berusia 35-60 tahun, tidak mengonsumsi obat penurun kolesterol. Kelompok kontrol (n=12) diberikan edukasi gizi, dan kelompok intervensi (n=12) diberikan edukasi gizi dan 65g atau 5 keping *cookies* garut dengan glukomanan porang sebagai makanan selingan selama 8 minggu. Nilai IAP [ $\log(\text{trigliserida}/\text{HDL-C})$ ] diukur sebelum (minggu 0) dan setelah (minggu 8) penelitian. Antropometri (berat badan, IMT, lingkaran pinggang, persentase lemak total, lemak visceral), asupan makan, dan aktivitas fisik juga diukur.

**Hasil:** Tidak terjadi perubahan aktivitas fisik dan antropometri pada kedua kelompok ( $p>0.05$ ). Terdapat peningkatan asupan serat pada kedua kelompok ( $p<0.05$ ), namun tidak berbeda signifikan antar kelompok ( $p>0,05$ ). Terjadi penurunan IAP pada kelompok intervensi meskipun tidak signifikan ( $p>0,05$ ). Tidak terdapat perbedaan yang signifikan pada perubahan IAP antara kelompok kontrol dan intervensi ( $p>0,05$ ).

**Kesimpulan:** Konsumsi 65g *cookies* garut dengan glukomanan porang selama 8 minggu tidak memberikan efek terhadap IAP penyandang DMT2.

**Kata Kunci:** Diabetes, indeks aterogenik plasma, serat, umbi garut, glukomanan porang.

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## THE EFFECT OF COOKIES FROM ARROWROOT TUBER (*Marantha arundinaceae*) WITH PORANG GLUCOMANNAN ADDITION ON ATHEROGENIC INDEX OF PLASMA IN TYPE 2 DIABETES

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### ABSTRACT

**Background:** type 2 diabetes (T2D) patients are at risk of developing dyslipidemia and atherosclerosis. High fiber foods are considered as a nutrition therapy to prevent the complications. Cookies from arrowroot tuber and porang glucomannan which are rich in fiber may be able to reduce atherosclerosis risk in T2D patients.

**Objective:** to determine the effect of cookies from arrowroot tuber and porang glucomannan consumption for 8 weeks on atherogenic index of plasma (AIP) of T2D patients.

**Methods:** this is a quasi-experimental study with control group. Subjects were T2D patients who controlled in health centers in Yogyakarta, aged 35-60, and didn't take cholesterol-lowering drugs. The control group (n=12) was given nutrition education, and intervention group (n=12) was given nutrition education and 65g or 5 pieces of arrowroot cookies with porang glucomannan as snacks for 8 weeks. AIP [ $\log(\text{TG}/\text{HDL-C})$ ] were measured before (week 0) and after (weeks 8) the study. Anthropometry, food intake, and physical activity were also measured.

**Results:** there was no change in anthropometry and physical activity in both groups ( $p>0.05$ ). There was a significant increase in fiber intake in both groups ( $p<0.05$ ), but not significantly different between groups ( $p>0.05$ ). There was a decrease on AIP in intervention group although it wasn't significant ( $p>0.05$ ). There was no significant difference in change of AIP between control and intervention group ( $p>0.05$ ).

**Conclusion:** Consumption of 65g cookies from arrowroot tuber and porang glucomannan for 8 weeks didn't affect AIP in T2D patients.

**Keywords:** Diabetes, atherogenic index of plasma, fiber, arrowroot tuber, porang glucomannan

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