

**【P2-8】****The Effects of Grain-based meal on Insulin Sensitivity in Obese Adults**Suk-Hee Jung<sup>1</sup>, Jung-In Kim<sup>2</sup>, Hee-Young Kim<sup>2</sup>*<sup>1</sup>Department. of Food and Nutrition, Changwon College, Changwon, <sup>2</sup>School of Life and Food Science, Inje University, Gimhae*

Insulin resistance syndrome(IRS, metabolic syndrome, MS) is defined as clustering of obesity, insulin resistance, hypertension and dyslipidemia. Since IRS increases the likelihood of diabetes mellitus and cardiovascular diseases, it is very important to screen IRS subjects to delay or derail diabetes mellitus and cardiovascular diseases by aggressive lifestyle modification such as diet and exercise therapy. Assessment of insulin resistance relies on the measurement of fasting plasma glucose and insulin levels, blood pressure and homeostasis model assessment - insulin resistance(HOMA-IR. Plasma insulin( $\mu$ U/mL)  $\times$  plasma glucose(mmol/L) / 22.5). HOMA-IR is known as simple and reasonable index of insulin sensitivity. We investigated the efficacy of roasted grain-base meal replacement program for improvement of insulin sensitivity in obese adults. Barley, brown rice and buckwheat were soaked in water, cooked by steaming, roasted and milled. grain-based meal replacement was prepared by mixing milled barley, brown rice and buckwheat in the ratio of 1.3:1:1. Thirty two obese volunteers(mean age 42.3 $\pm$ 8.9 yr, BMI 28.5 $\pm$ 3.2 kg/m<sup>2</sup>, body fat 38.0 $\pm$ 7.0%) were divided into two groups. Experimental group consumed 70g grain-based meal with 200ml milk as breakfast and control group consumed regular breakfast for 13 weeks. The amounts of carbohydrate, fat, protein and dietary fiber contained in the grain-based meal replacement and the regular breakfast were similar. The subjects maintained their habitual lifestyle during the study. Biochemical characteristics were measured before and after the treatment period. Consumption of the grain-based meal significantly decreased HOMA - IR(19.6%), fasting plasma glucose(5.7%) and insulin level(15.3%, P<0.01, P<0.001). Systolic blood pressure(6.6%) and diastolic blood pressure(6.0%, P<0.05) significantly decreased by consumption of grain-based meal. Thus we could conclude that grain-based meal is effective in improving insulin resistance among obese individuals.