Glycemic Index of Corn and Athletic Performance

Panlasigui, Leonora N1., Sales, Merridette S,  Bercades, Luigi T, Barrios, Erniel B 4, Dizon, Janine Margarita R.5

1 Dean, School of Nutrition, PWU and former Professor, UP Diliman, Philippines
2 Former Research Associate, UP-CHE
3. Former Professor, UAP
4. Dean School of Statistics, UP Diliman
5 Director College of Rehabilitation Sciences, UST

Corn a major staple for Filipinos, is a good source of carbohydrates, amylose and fiber. These compounds affect the rate of digestion and absorption of foods and can modulate metabolic response. Carbohydrate foods have varying rates of digestion and absorption. Thus, the glycemic index (GI) has been developed to classify foods based on the rate of carbohydrate absorption. Low glycemic foods have been shown to be beneficial for diabetics and provide consistent supply of energy to athletes and active individuals, thus helps boost endurance.

Using a randomized clinical trial, the GI of corn grits, milled rice and mixture of these two food items were determined. The GI of the test foods ranged from 48.13.12 to 117.35+21.63. From this study three test foods of varying GI were tested for their effects on aerobic capacity of elite athletes. The blood transition threshold cycling protocol was used to exhaust the subjects until VO2 max. The results showed a significantly higher VO2 max (71.38+1.44 ml O2 kg min) and significantly lower RER (1.04250) for LGI as compared to HGI and C (p<0.0489, p<0.0075). No significant differences were seen in blood lactate, anaerobic threshold (AT), blood glucose and other respiratory parameters. Heart rate (HR) at termination was only affected by test food sequence (p<0.0598), time of exhaustion was only affected by discipline (p<0.002) and Borg’s rate of perceived exertion (RPE) was affected by discipline (p<0.0021). The results imply that LGI is able to significantly improve endurance capacity cyclists and may be a potential pre-event food.