Abstract
Introduction: Maca is consumed since ancient times as part of the diet. Its ability to reduce the effects of stress and fatigue is mentioned among its medical properties by Peruvian traditional medicine. Recent studies describe that administration of maca reduces glycemia in normoglycemic animals; however mechanisms remain unclear. Objectives: To determine hypoglycemic and antioxidant effects of yellow ecotype maca flour (Lepidium meyenii Walp) in diabetic rats. Design: Experimental. Setting: Biochemistry and Nutrition Research Center, Faculty of Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru. Biologic material: Yellow maca flour, male rats. Interventions: Yellow maca flour was administered to male rats divided into four groups: I, control group; II, maca flour 4 g/day; III, maca flour 6 g/day; and IV, glibenclamide 10 mg/kg. Glycemia and body weight were determined daily for 46 days. At the end of the experiment insulin and parameters of oxidative damage (vitamin C and MDA-TBARS) were determined. Main outcome measures: Glycemia, insulin, vitamin C levels modification and formation of MDA-TBARS complex. Results: Administration of maca flour in the diet (4-6 g/day) to diabetic animals decreased glycemia by 50%, increased insulin levels 22% and improved vitamin levels C compared to the control group. Administration of maca 4 g/day decreased oxidative damage 54% compared to control group as evaluated by formation of MDA-TBARS complex formation. Conclusions: Administration of yellow maca flour to diabetic animals improved glucose metabolism by regulating blood sugar, raising insulin levels, increasing antioxidant defenses and protecting against oxidative damage that occurs in diabetes.

Keywords
Diabetes, yellow maca, oxidative damage, reactive oxygen species, lipoperoxidation, insulin, malondialdehyde-thiobarbituric acid (MDA-TBARS).

Available in: http://www.redalyc.org/articulo.oa?id=37920884002