Products of Lepidium meyenii (maca) are consumed worldwide as an alimentary supplement to enhance fertility and restore hormonal balance, despite a lack of rigorous scientific evidence for their efficacy. The aim of this study was to evaluate its effect on semen quality and reproductive hormones level in healthy adult men. Enhancing properties of maca on semen quality in animals was previously reported by various authors, but we represent to the best of our knowledge the first double-blind, randomized, placebo-controlled trial in men. A group of 20 volunteers aged from 20 to 40 years were supplied by milled hypocotyl of maca or placebo with a daily dose of 1.75 g for three months. Negative controls of semen were compared to the samples after 6 and 12 weeks of maca administration and negative blood controls were compared to the samples after 12 weeks of treatment. Levels of reproductive hormones and sperm volume did not change significantly after 3 months of maca administration, but sperm count and motility showed rising trends compared to placebo. Quality of semen was enhanced independently on reproductive hormones level. The design of a further study considering the effect of maca on Assisted Reproduction Center’s clients is currently being developed.