

Agriculture & Food Chemistry

July 23-24, 2018
Rome, Italy

Nacer Bellaloui, J Food Nutr Popul Health 2018, Volume 2
DOI: 10.21767/2577-0586-C2-004

SOYBEAN SEED QUALITY AND NUTRITION: EFFECTS OF ENVIRONMENT AND GENETICS

Nacer Bellaloui

US Agricultural Research Services, USA

Soybean seed is a major source of nutrients that are essential for human health and livestock nutrition. Seeds of soybean contain protein (42%), oil (20%), fatty acids, carbohydrates (33%) and mineral nutrients. Although these nutrients are genetically controlled, the environment plays a major role in the content and accumulation of these nutrients in seeds, creating a major challenge for growers and breeders. Our research showed that environment and genetic traits are among the major contributors to the variability of seed nutrients. Drought and high heat are considered among the most common environmental stress factors leading to yield loss and poor seed quality affecting the nutritional values of seeds. Our research showed that both drought and heat altered seed nutrients (protein, oil, fatty acids, sugars, and minerals) and this alteration can reach up to about 40-70% for some nutrients such as seed protein, oil and mineral nutrients. This presentation, using field experiments in the Midsouth USA, will highlight the effects of drought and high heat on seed quality and chemical composition of soybeans differ in their genetic traits of quality and nutrition. This presentation will also highlight challenges and opportunities for soybean

selection for high quality and mineral nutrition under drought and high heat.

Biography

Nacer Bellaloui received his PhD in Plant Nutrition from the Department of Pure and Applied Biology, University of Leeds, UK in 1989. He joined USDA-ARS in 2004 as a Research Plant Physiologist and is currently working on identifying the physiological and genetic mechanisms controlling soybean seed composition constituents like protein, oil, fatty acids, sugars, phyto hormones and mineral nutrition under drought, heat and disease pressure. He is internationally recognized in the area of Grain Nutrition. He authored and co-authored over 100 peer reviewed articles and invited book chapters in well-respected international journals. Also, he has served as an Associate Editor, Advisory Board Member and Editorial Board Member of well-respected international peer reviewed journals and served as a Member of Crop Science Research Award Committee and Seed Science Award Committee. He is currently serving as a Member of the Mississippi Academy of Sciences Board and a Chair for Advances in Agricultural Research in Mississippi Academy of Sciences.

nacer.bellaloui@ars.usda.gov

