Effects of environmental factors on isoflavone amount and composition in soybean seeds. (C01-nelson163821-Poster)

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Abstract:

Environmental conditions can impact isoflavones in soybean seeds, but the specific factors causing change are not known. The objective of this research was to measure the impact of temperature and soil moisture on isoflavones in soybean seeds. Five entries selected for differences in isoflavone concentration were grown in the greenhouse under optimal conditions. At the R6 growth stage the plants were subjected to one of six treatments: different night/day temperature regimes (13/23 C (low), 18/28 C (optimal), and 23/33 C (high)) combined with optimal or 30% optimal water supply. Seed samples from each plant were analyzed for isoflavones using HPLC. Cultivar mean isoflavone concentrations, but there were significant cultivar by treatment interactions. Despite these interactions the rankings of the cultivars based on isoflavone concentration were identical within all treatment main effects except for slight changes under the high temperature regime. Temperature and soil moisture do affect isoflavone levels in soybean seeds but genetic differences are still more important in determining final concentration.

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