

B-141

Evaluation of edamame yield and agronomic traits in soybean

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Edamame is a vegetable or specialty soybean (*Glycine max*) with high nutrition and market value. Edamame is grown in the same way as used for general purpose or grain-type soybeans, it is harvested when the pods and seeds are still green at R6 stage rather than after full maturity. In recent years, more people have become aware of the health and nutritional benefits of vegetable soybeans, and the market demand for vegetable soybeans has significantly increased in the United States. However, most of edamame varieties grown in the USA were originally developed in Asian countries or regions. To develop and select superior varieties and/or promising lines adaptable to the USA, in particular Virginia and similar environments, 89 and 130 soybean lines were evaluated for edamame yield related agronomic traits in 2015 and 2016, respectively. The results indicated that there were significant differences among the lines and cultivars in edamame yield and related traits, suggesting that selection for the traits will be effective. Most traits varied considerably between years or environments, and trait correlations showed mostly similar in the two years. Both fresh and mature 100-seed weights were relatively stable, and had no significant effects on fresh pod and fresh seed yields. Mature grain yield was slightly associated with fresh seed yield, while a positive correlation existed between edamame and mature seeds in both protein and oil.