MORPHOLOGICAL VARIATION IN WORLD COLLECTIONS OF VELVETLEAF. Lynn M. Sosnoskie* and John Cardina, The Ohio State University, and Sajal Sthapit, The College of Wooster, Wooster.

Our lab characterized the morphological and phenological variation present in 83 velvetleaf (*Abutilon theophrasti*) accessions collected in Asia, Japan, India, Europe, Eastern Africa and North America throughout the 20th century. Measurements taken to gauge the diversity in growth and development in the species included: initial seed weight, stem height at 3, 7 and 11 weeks, leaf size at 3, 7 and 11 weeks, stem and petiole color, time to flowering, time to first capsule maturity, stem height at flowering, height to first mature capsule, basal stem diameter, number of capsules, and capsule size and color. Significant differences between accessions were observed for most of the examined variables ($P<0.01$). Preliminary analyses indicate that accessions producing yellow capsules were taller and longer-lived than their brown-colored counterparts were ($P<0.01$). This finding supports a previous study's assertion that the yellow-colored varieties were originally selected for use as a fiber crop: i.e. increased stem yield resulted in longer lengths of lignified tissue. The accessions producing brown-colored capsules exhibited greater reproductive output, as measured by the number of capsules and the number of seed-containing valves per capsule, a desirable trait in weedy species. Using capsule color as the independent variable, Discriminant Analysis was able to correctly classify 96% of the observations by the remaining characters, further suggesting that the yellow- and brown capsuled accessions varied, significantly, with respect to their morphology and phenology. Current studies are examining the degree of genetic variation present in these populations.

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