

Breeding basil (*Ocimum basilicum* L.) for improved cold tolerance and aroma

Ms. Lara Brindisi, Mr. Robert Mattera III, and Dr. James Simon

Rutgers University

Abstract

Basil (*Ocimum* spp.) is a popular culinary herb in the mint family (Lamiaceae). There is incredible diversity within the *Ocimum* genus chemically and morphologically with some of the species native to sub-Saharan Africa. Sweet basils (*Ocimum basilicum*) for instance, traditionally have dark green, cupped leaves with a sweet, clove-like aroma whereas Thai basils (*O. basilicum* var. *thrysiflora*) have narrower leaves with purple stems and a licorice aroma. Basil is a desirable specialty herb that can procure a relatively high market price, especially from European and western consumers. Traditionally, distributors ship herbs under refrigerated conditions, however, basil is very susceptible to cold injury. Costly, separate shipping arrangements must be made for basil, otherwise a large percentage of the crop will be lost. Chilling resistant lines with licorice aroma have been crossed with chilling susceptible lines with a sweet clove-like aroma to obtain F2 populations for linkage mapping. Current breeding efforts will continue to explore new sources of chilling resistance, to breed chilling resistant lines with desired aromatic profiles and to identify putative alleles.