

HPSI Mini-grant

Basil Downy Mildew (BDM) Trial – Jay Bost/GoFarm Hawaii

Summary:

Basil Downy Mildew is a serious impediment to basil growers in Hawaii, particularly to growers opting not to utilize fungicides. Thirteen breeding lines from Vitalis seed were grown in Waimanalo. First planting was seeded June 21, 2015 and transplanted into fields July 20, 2015. Two plantings in separate parts of UH Waimanalo Station were organized into 3 beds, with each of the 13 lines replicated 3 times in each of the two plantings. Plants were in 2 rows with 10" between plants. Plants were evaluated for occurrence of BDM on Sept 11, 2015.

Of the commercially available lines from Vitalis only 'Eleonora' proved somewhat tolerant of BDM. Varieties 'Emily', 'Kiera', and 'Elida' all proved highly susceptible. Of the commercially unavailable lines 108 and 111 both were slightly more tolerant than 'Eleonora'.

We did a tasting of all 13 varieties of raw, unprepared leaves. Perceptions of flavor were very subjective and not consistent. However, in general (at least in a raw state) 111 was rated as good, while 104 and 108 were rated as poor.

The two GoFarm AgIncubator students who took care of the plantings, harvested and sold basil from the plantings, both chose 108 as their preferred variety in agronomic terms.

A planting of only the 3 best lines (Eleonora, 108, and 111) was sown in nursery on Oct 13, 2015. This was transplanted in single planting, not replicated. The three varieties have been being harvested (1st for tips, and then for bunches) from late December, 2015 to late January, 2016. While BDM has been intermittently present, decent harvests have been obtained weekly for 1 month. After 1 month, BDM appears to be increasingly serious and plants are tending to flower. A third planting was sown in late December and transplanted into ground on January 15, 2016.

Eleonora, 108, and 111 have been harvested by GoFarm AgPro students and distributed through their CSAs, been sold to the Waimanalo Co-op, and used by Jay Bost and others for pesto. All have proven to be acceptable both in commercial and culinary terms.

Until lines 108 and 111 are commercially released by Vitalis, Eleonora appears to be a good, if not perfect, variety for growers affected by BDM in Hawaii.

Basil 2nd screening

Project / Country				Sowing		21/06/15		General Remarks (e.g. trial condition, diseases, defects, weather, irrigation, plant protection, fertilization)									
Location				Planting		21/07/15		Conclusion									
Grower Paulo				Evaluation		11/09/15											
Soil Molisol				Evaluated by		Jay Bost											
Coverage (e.g. indoor tunnel, outdoor+fleece)				Growing Days		52											
Field variety				Spacing/density/cut		2 rows, 10inches rows/plants											
Cultivation (e.g. pot+size, industry)				Storage													
No	Variety	Plant length cm (earliness)	Weight g / m²	Uniformity 1-9	Leaf colour 1-9	Leaf size 1-9	Cupping 1-9	Downy mildew 1-9	Other diseases 1-9					Market value 1-9	Remarks (e.g. taste, blistering, discolouring, diseases, shelf life, what's good/bad)		
	103			7	7	5	7	2.5							mild lodging, "poor(1)" flavor		
	509			7	5	6	5	2							tall, "very poor (0)" flavor		
	511			7	5	7	7	2.5							"very poor (0) flavor"		
	111			7	8	4	5	7.75							flowering, "very good (3)" flavor		
	101			7	8	6	5	4.25							"poor (1)" flavor		
	104			6	6	5	5	7							lodging, "poor (1)" flavor		
	112			9	7	5	5	2.5							flowering, "poor (1) flavor		
	102			8	8	7	7	3							leaf folding upwards, "good (2)" flavor		
	510			8	5	8	4	2.5							"lettuce leaf", mild lodging, nice until infected, "very poor (0)" flavor		
	512			8	7	4	5	4.5							flowering, "poor (1)" flavor		
	113			6	6	6	7	5.5							flowering, "poor (1) flavor		
	508			8	7	7	6	4.25							"very poor (0) flavor"		
	108			5	7	6	6	7							"poor (1)" flavor, Farmers' Choice (Paulo)		