Edible podded peas

Trait	Dry	Garden	Snow	Snap
Seed	Round	Wrinkled (few round)	Round	Wrinkled
Pod fiber	+	+	-	-
Wall thickness	Thin	Thin	Thin	Thick
Suture strings	+	+	+	+/-

Pea seed shape in relation to type

Snap Peas

Breeding Objective

Vigorous edible-pod type that produce in warmer summer months

Key Traits for Variety Selection

Days to germination and flowering, yield, aphid damage, continued pod setting as the summer turns warmer, disease ratings (PEMV, powdery mildew, fusarium wilt), flavor, overall quality

Pea germination LB Farm

Disease of Importance

Powdery Mildew

- Fusarium wilt

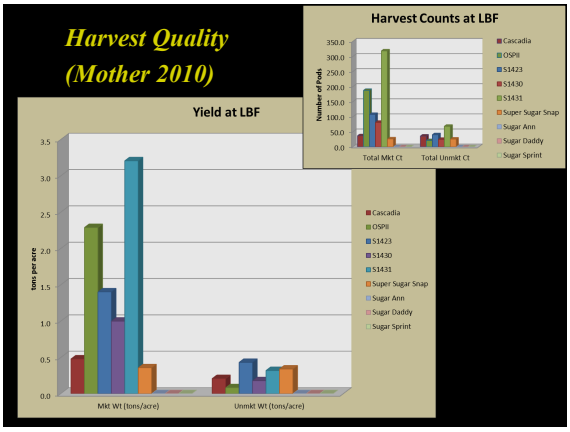
Pea enation mosaic virus

Methods: Snap Peas

- Pedigree selection: Manoa C x OSP II or S706
- Selection in conventional systems
  - Heat tolerance
  - Powdery mildew
  - Virus resistance
- 2009 – trialed advanced pea lines in organic production
  - S1423, S1430 & S1431 seemed well adapted
- 2010-2011 – Mother daughter trials w/ 6 commercial varieties

Mother Farm (LBF 2010)

Variety	% Germi-nation	Days to Harvest	Pod Length (inches)	String Length (inches)
Cascadia	12.2	63.0	2.8	2.7
OSPII	67.2	54.0	3.3	3.3
S1423	42.2	56.3	3.1	2.7
S1430	30.6	63.3	3.1	2.6
S1431	70.0	56.3	3.9	3.1
Sugar Ann	1.7	-	-	-
Sugar Daddy	6.1	-	-	-
Sugar Spring	6.1	-	-	-
Super Sugar Snap	33.9	60.7	3.2	2.9


Harvest Quality
(Mother 2010)
Yield at LBF
Tons per acre
Mkt Wt (tons/acre)
Unmkt Wt (tons/acre)
Harvest Counts at LBF
Number of Pods
Total Mkt Ct
Total Unmkt Ct
Cascadia
OSPII
S1423
S1430
S1431
Super Sugar Snap
Sugar Ann
Sugar Daddy
Sugar Sprint


423
9/2/11


9/2/11

Cornell Program

- Backcross-inbred program to widen the genetic base of the edible podded peas
- Identify germplasm w/ abiotic and biotic stress tolerance & adapted to NE
- July planting: high temperatures, powdery mildew, fusarium root rot, ascochyta blight
- Three breeding populations in snap & snow backgrounds created w/ input from market growers and chefs

Cornell Breeding materials

- Stringless selections tobe derived from 900 backcross F_1 plants in 2012
- A second set of populations being created incorporating top performing peas from 2011 stress tolerance screen