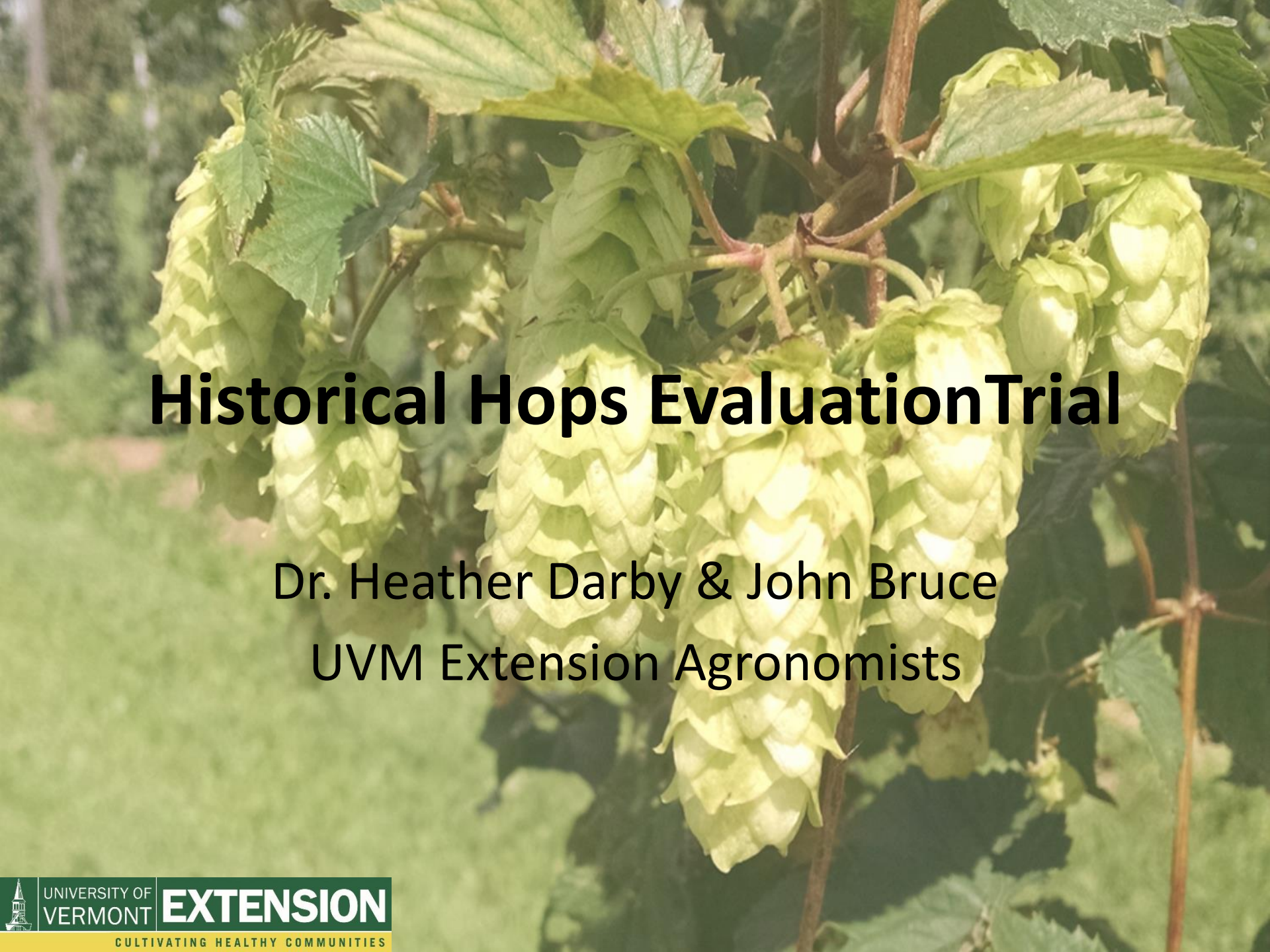




Historical Hops Evaluation Trial

Dr. Heather Darby & John Bruce
UVM Extension Agronomists

- **Earliest record is from Middlebury, VT, 1792.**
 - Jabez Rogers establishes a brewery known for Porter ale.
 - Locally sourcing enough hops.
- **1820 - Records show hops production increasing.**
 - Merino wool is still king cash crop.
 - 220 Distilleries
 - 6 (estimated) breweries
 - Peacham was noted that if it was not the land of oats and honey, it was the land of Gin and Whiskey.
 - Noticeable alcohol issues in the state regarding labor and home life.
- **1830 - Hops production is ramping up.**
 - Same time period distilleries crash and temperance movements kick in.
 - Merino wool crashes and new cash crop is needed.
 - VT County Hops Inspectors are state positions.
- **1840 - Hops production soars.**
 - Cash flow for the state.
 - Gains national notoriety for quality.
 - Temperance gains more footing in state.
 - Production is more than all other New England states combined.
- **1850**
 - Big year for hops production.
 - Hop prices closely watched.
 - Documents show we have 3 varieties in the state. Pompey Hop considered the best, Grape Cluster “old fashioned”, and Canadian Red Vine fading out.
- **1860**
 - Hops production is at its’ peak.
 - Distant second to New York Production.
 - 1860’s is a terrible decade between Civil War and weather conditions.
 - Hops production absolutely crashes by end of decade and no longer viable due to Western States.

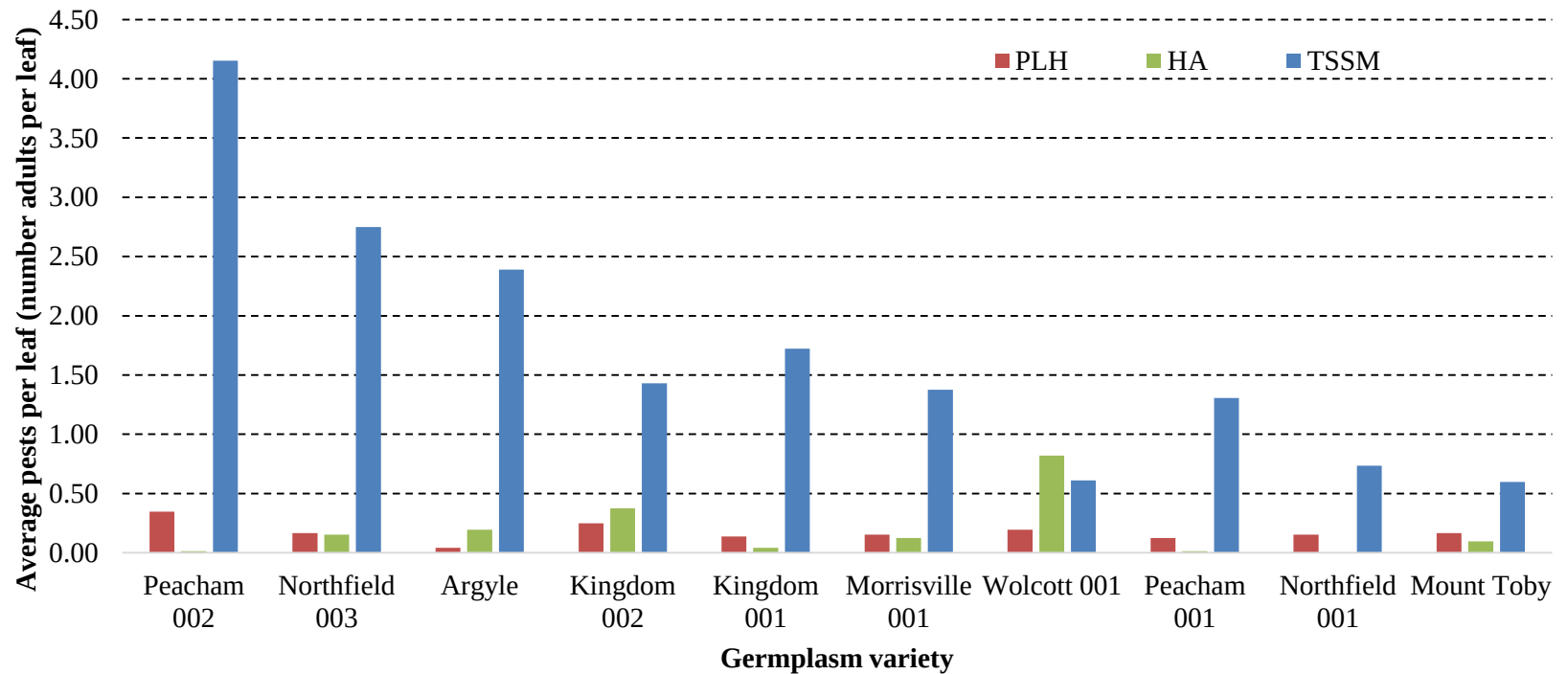
Thank You to Adam Krakowski for slide.

- Sunderland, MA
- Northfield, MA
- Argyle, NY
- Randolph Center, VT
- Tunbridge, VT
- Peacham, VT
- Wolcott, VT
- Morrisville, NY

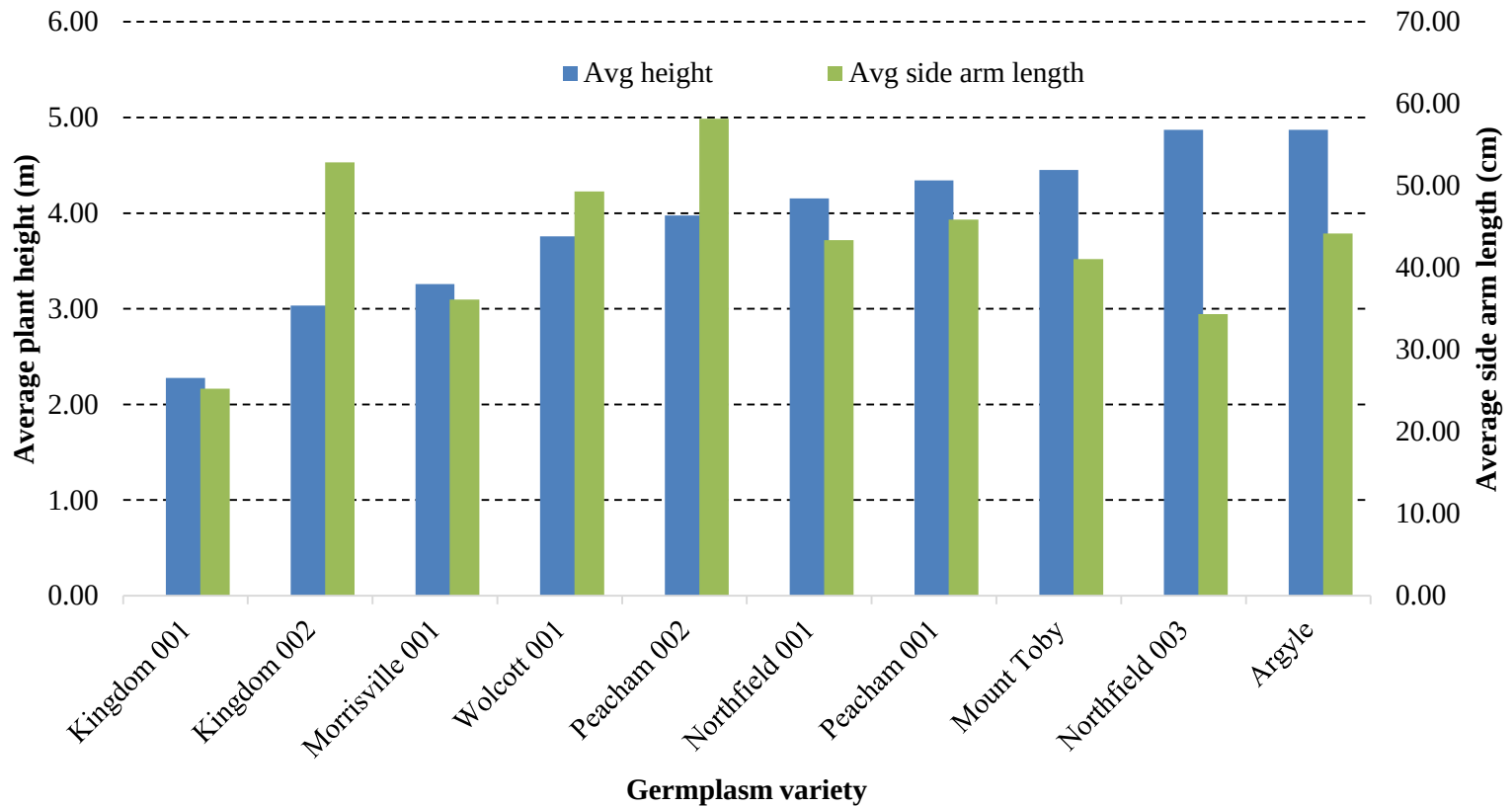


Plant	Town, State	Latitude	Longitude
Northfield 001	Northfield, MA	42.715015	-72.465087
Northfield 003	Northfield, MA	42.715015	-72.465087
Peacham 001	Peacham, VT	44.38361111	-72.18638889
Peacham 002	Peacham, VT	44.38361111	-72.18638889
Wolcott 001	Wolcott, VT	44.54416667	-72.41861111
Mount Toby	Sunderland, MA	42.503834	-72.531131
Argyle	Argyle, NY	43.237972	-73.495185
Kingdom 001	Tunbridge, VT	43.9218136	-72.5718315
Kingdom 002	Tunbridge, VT	43.9218136	-72.5718315
Morrisville 001	Morrisville, NY	42.832964	-75.567996

Arthropod susceptibility



Plant growth



Essential Oils

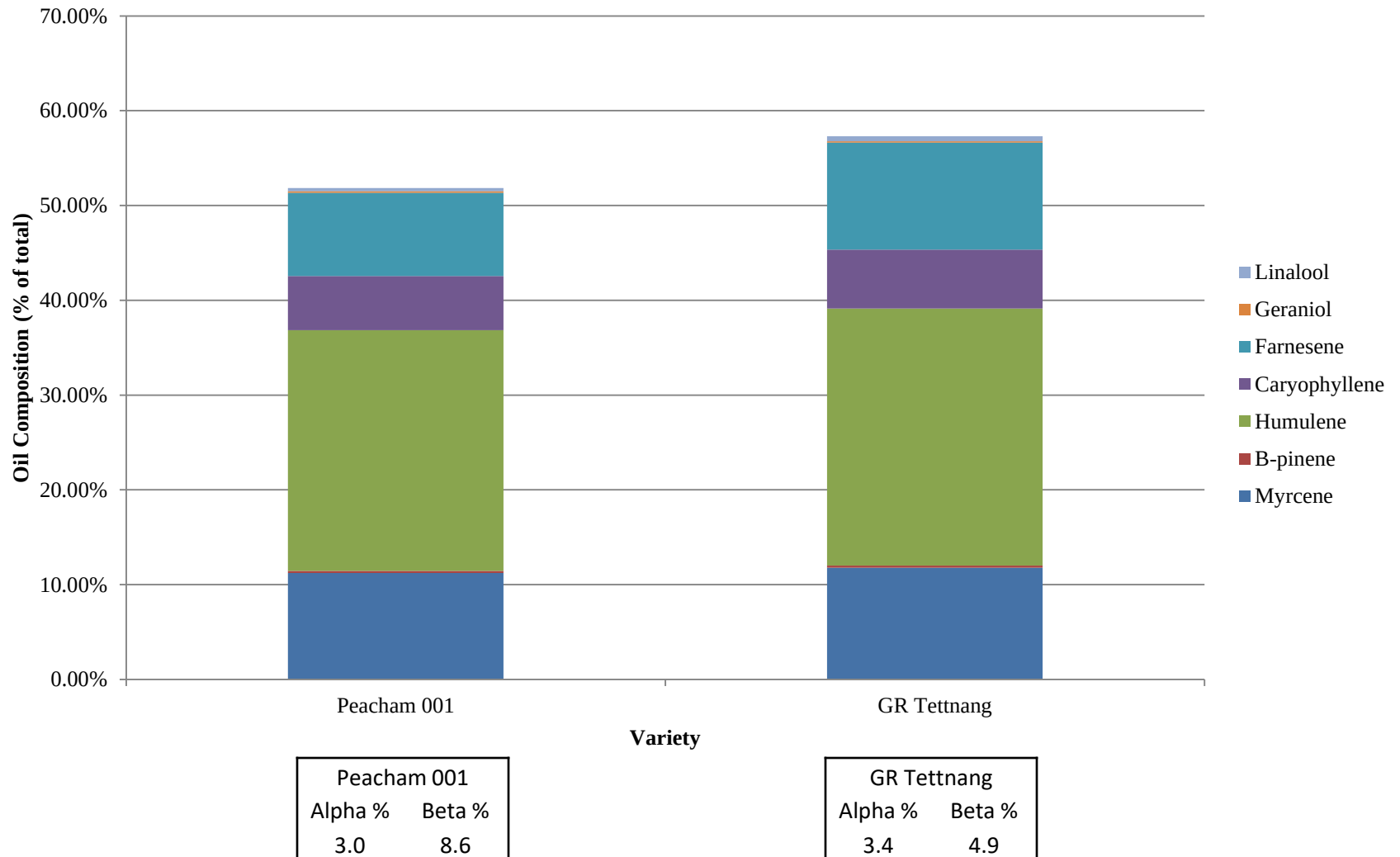
- Myrcene - green, resinous
- Beta-pinene - spicy, piney
- Humulene - piney, woody
- Caryophyllene - woody
- Farnesene - floral
- Geraniol - floral, sweet, rose
- Linalool - floral, citrus

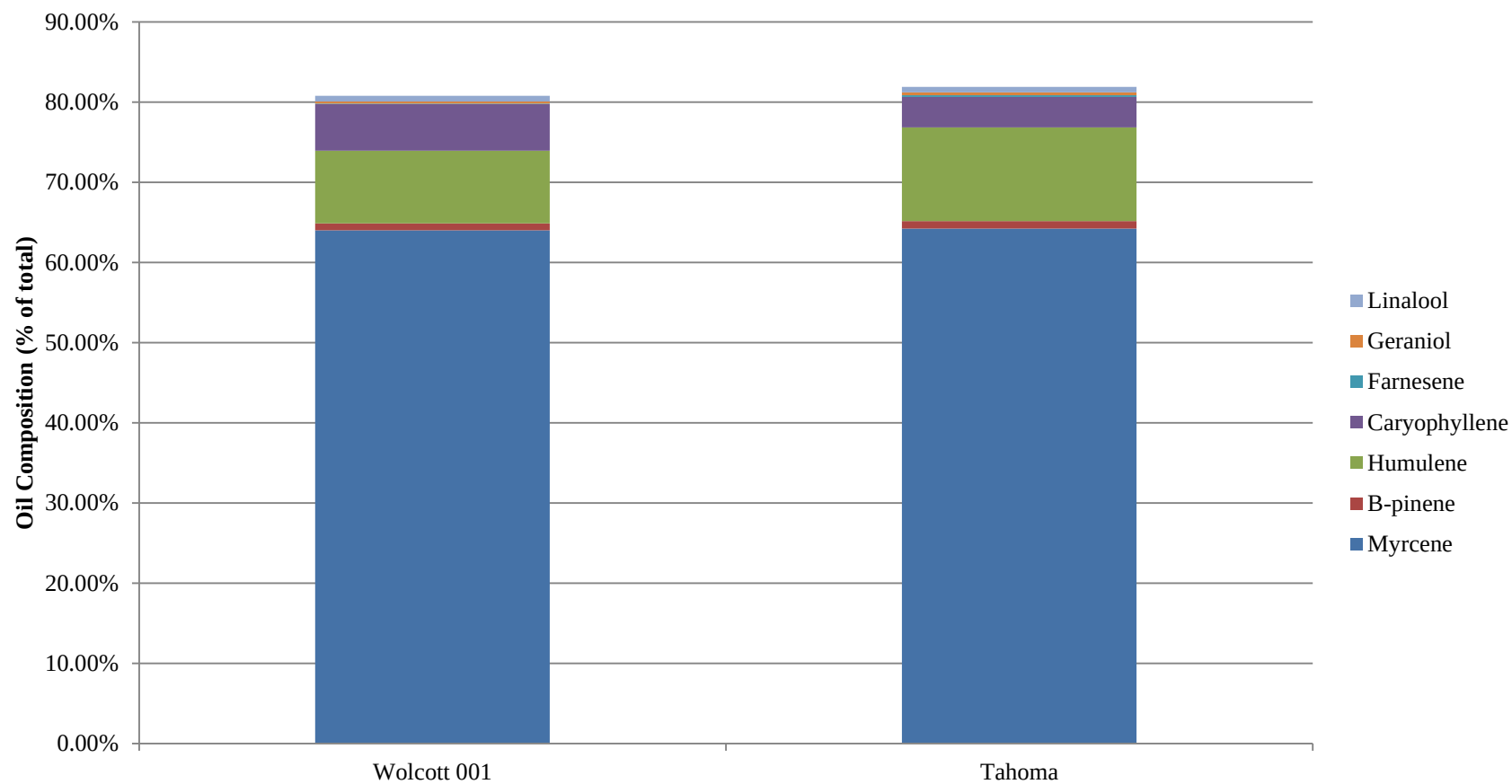
Germplasm essential oils and resins

Variety	b-pinene %	Myrcene %	Linalool %	Caryophyllene %	Farnesene %	Humulene %	Geraniol %
Wolcott 001	0.83	64.02	0.71	5.82	0.07	9.07	0.24
Northfield 001	0.43	41.05	0.46	5.55	0.05	18.09	0.15
Morrisville	0.58	46.21	0.34	5.37	0.17	15.44	0.39
Peacham 001	0.21	11.24	0.33	5.7	8.77	25.41	0.18
Argyle	0.68	52.87	0.25	4.23	0.08	12.45	0.41

Variety	Alpha %	Beta %	HSI
Northfield 001	3.60	6.70	0.249
Wolcott 001	3.80	5.00	0.280
Morrisville	6.00	3.40	0.241
Argyle	5.00	3.90	0.271
Peacham 001	3.00	8.60	0.264

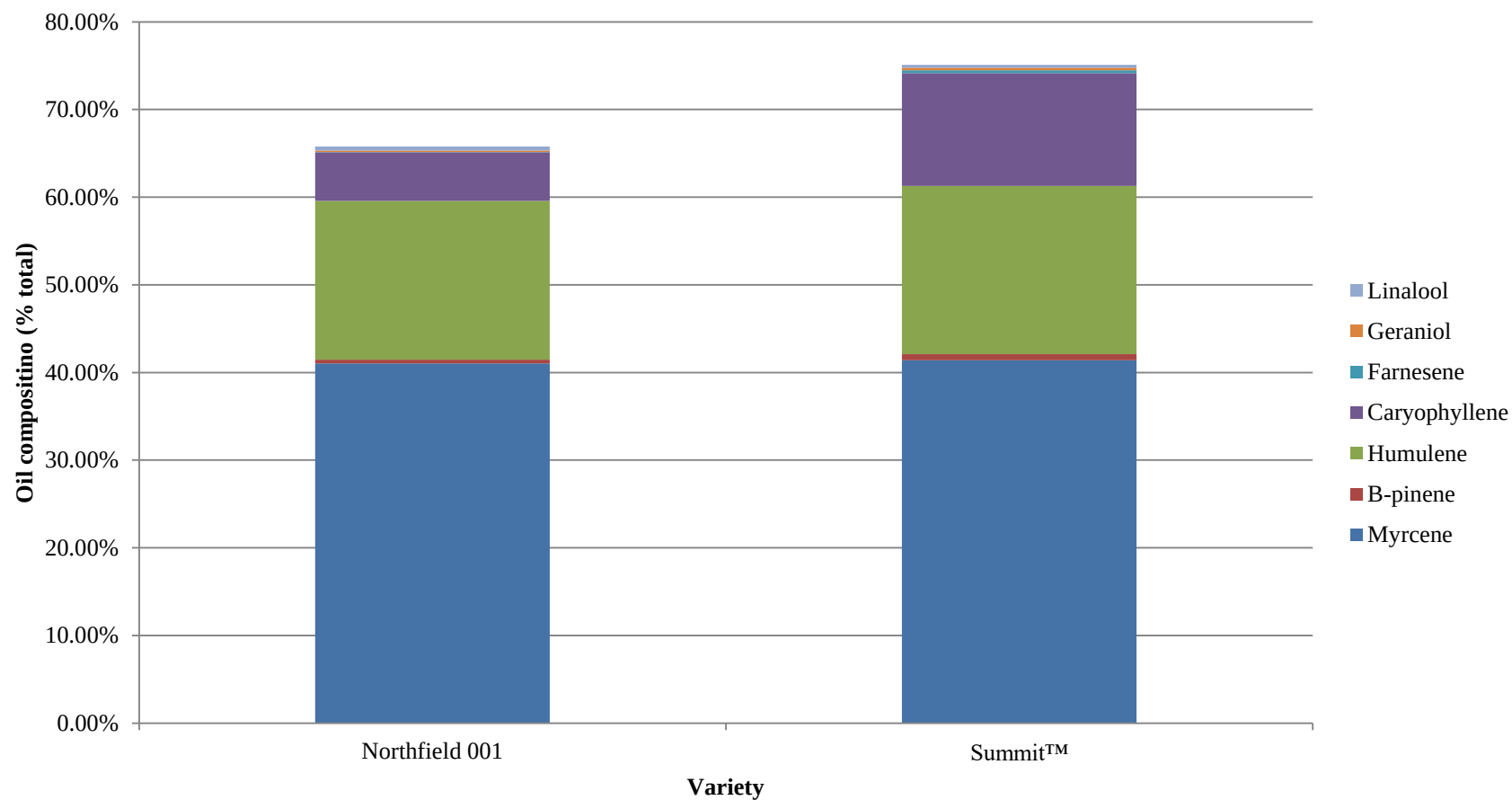
Oil comparisons





Wolcott 001	
Alpha %	Beta %
3.8	5

Tahoma	
Alpha %	Beta %
6.8	7.7



Northfield 001	
Alpha %	Beta %
3.6	6.7

Summit	
Alpha %	Beta %
17.1	5.3