

# Camelina Breeding: Objectives

1. Release high yield/oil herbicide tolerant (HT) variety.
2. Develop edible HT variety for market development.
3. Develop larger-seeded HT variety with good yield and oil content
4. Explore additional germplasm collections and determine the genetics control of important traits (Wilson)



# HT cultivar performance averages

	<u>2014 Wilke</u>		<u>2015 Pullman</u>		<u>2016 Pullman</u>	
	Yield	Oil	Yield	Oil	Yield	Oil
HT427	304	33.1%	349	34.1%	506	35.1%
HT494	280	33.6%	335	35.1%	608	34.5%
<b>HT554= WA-HT1</b>	<b>318</b>	<b>33.7%</b>	<b>364</b>	<b>34.8%</b>	<b>723</b>	<b>35.3%</b>
HT556	293	33.0%	384	33.6%	602	34.4%
Blaine Creek	191	31.2%	289	34.6%	447	35.3%
Calina	362	34.5%	311	35.2%	719	36.0%
Suneson	255	32.3%	320	36.0%	469	35.2%
Midas	-	-	299	33.7%	460	34.8%
Acc-19	347	34.1%	378	35.3%	453	35.3%
Acc-31	380	33.7%	308	34.8%	548	35.0%

# Low Erucic Camelina Lines

<b>Fatty Acid</b>	50-26-1	50-26-18	50-26-26	Calina	Blaine Cr.	Midas	Suneson
Palmitic Acid 16:0	6.0	5.9	6.1	5.5	5.4	5.5	5.4
Stearic Acid 18:0	3.6	3.4	3.7	2.6	2.5	2.3	2.7
Oleic Acid 18:1	27.5	23.3	25.1	19.9	19.9	18.8	20.0
Linoleic Acid 18:2	23.9	23.4	23.5	20.6	20.3	20.4	22.6
Linolenic Acid 18:3	28.1	33.6	30.8	26.0	28.4	29.7	25.0
Eicosenoic Acid 20:1	7.2	6.7	6.9	14.8	14.4	13.5	14.6
Erucic Acid 22:1	0.40	0.45	0.40	3.40	2.90	2.90	2.70

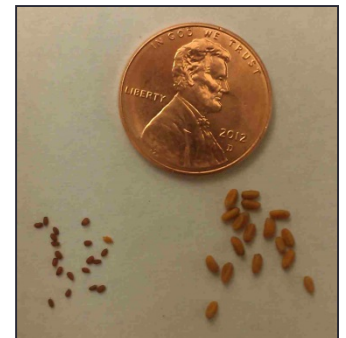
- One line *released* in 2017
- Advanced lines (#?) under evaluation this season
- Two seasons evaluation before release



# Larger seeded lines

- Large seeded line with poor yields and oil content identified
- Intercrossed with HT line and other semi-large seeded lines for several cycles of selection
- 26 advanced lines under evaluation this season
- Two seasons evaluation before release

Seed size variation



# Potential Biofuel Market

- Airline/Oil company consortium building a seed-oil refinery in Ohio
- Second site proposed in PNW
- Food vs Fuel issue important to airlines
- Interest in funding breeding program

## Potential of True Winter Types in Fall Plantings

<u>Spring Types</u>	<u>Yield (g/plot)</u>
WA-HT1	536
Blaine Creek	442
Calena	612
Suneson	411
Midas	458
Cheyne	417
<u>Winter Types</u>	
Joelle	633
Bison	656