

# Winter Canola

## Comparison of Winter Canola Cultivars in Middle Tennessee







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Winter canola (*Brassica napus* L.) is related to rapeseed but has low erucic acid and glucosinolate contents which are beneficial for human and animal consumption. Little research on varieties is available in the Southeast U.S. This variety trial focused on 23 different varieties of winter canola over 2 years.

### Benefits of winter canola

<p>Oil</p> 	<p>Protein</p> 	<p>Biofuel</p> 
<p>Cover crop</p> 	<p>Crop rotation Increases wheat yield by 10-21%</p> 	<p>Forage for ruminants</p> 

### Description of study trial

23 varieties in four replications

**Soil:** Silt loam

**Seed treatment:** Helix

#### Fertilizer Applications:

**Year 1:** Pre-plant: 17 lbs N/acre + 12 lbs K/acre + 6 lbs S/acre, March: 64 lbs N/acre

**Year 2:** Pre-plant: 83 lbs N/acre + 55 lbs K/acre + 33 lbs S/acre, March: 73 lbs N/acre

#### Herbicide Applications:

**Year 1:** Trifluralin (2.67 lbs a.i./acre), Paraquat (4 oz a.i./acre)

**Year 2:** Paraquat (8 oz a.i./acre), Pendimethalin (1.4 lbs a.i./acre)

### Factors affecting yield, oil and protein content



Weather



Fertilizer rate



Planting date



Crop management

### Year 1 (2014-2015)



Temp -2 to 24°C



Rainfall 929mm



Yield 1755 lbs/acre



Oil 45.5%



Protein 22.3%

### Year 2 (2015-2016)

2 to 24°C

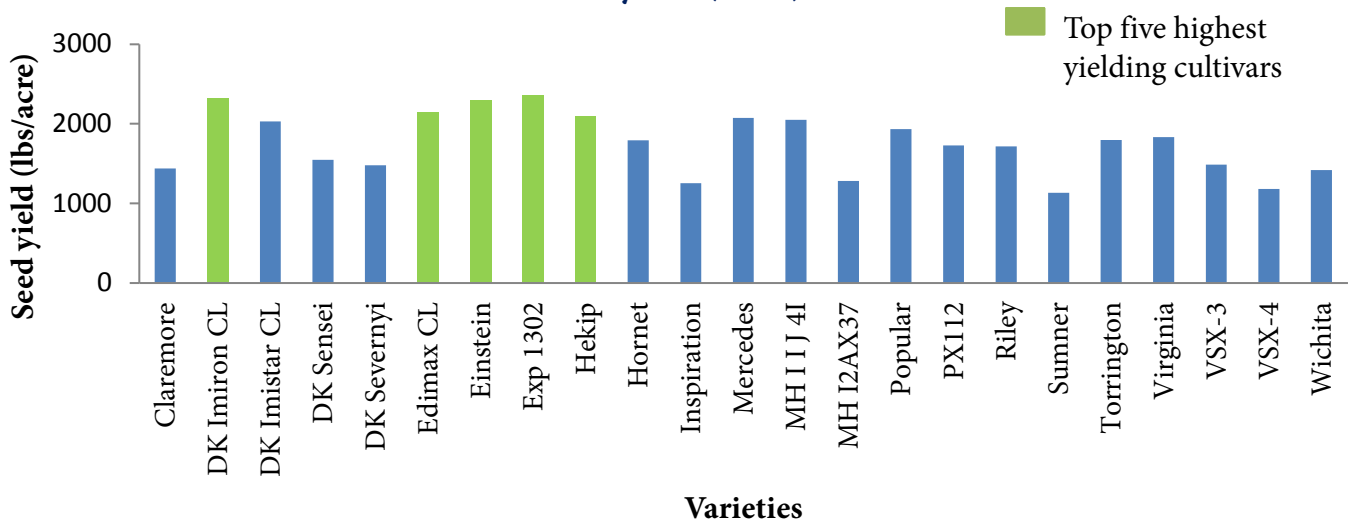
1189mm

2546 lbs/acre

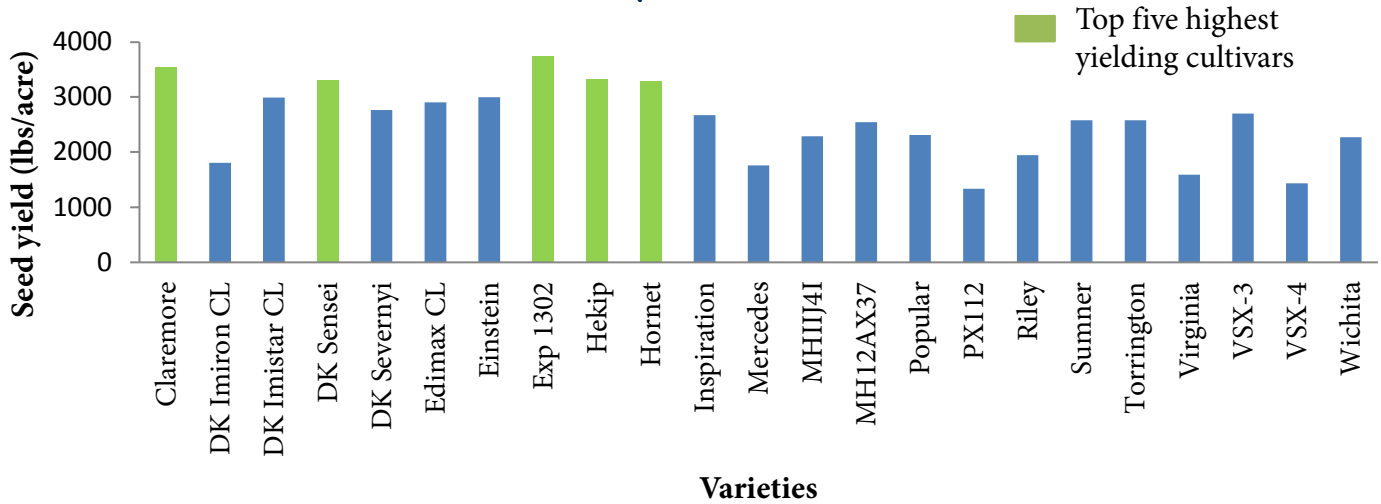
44.9%

21.0%

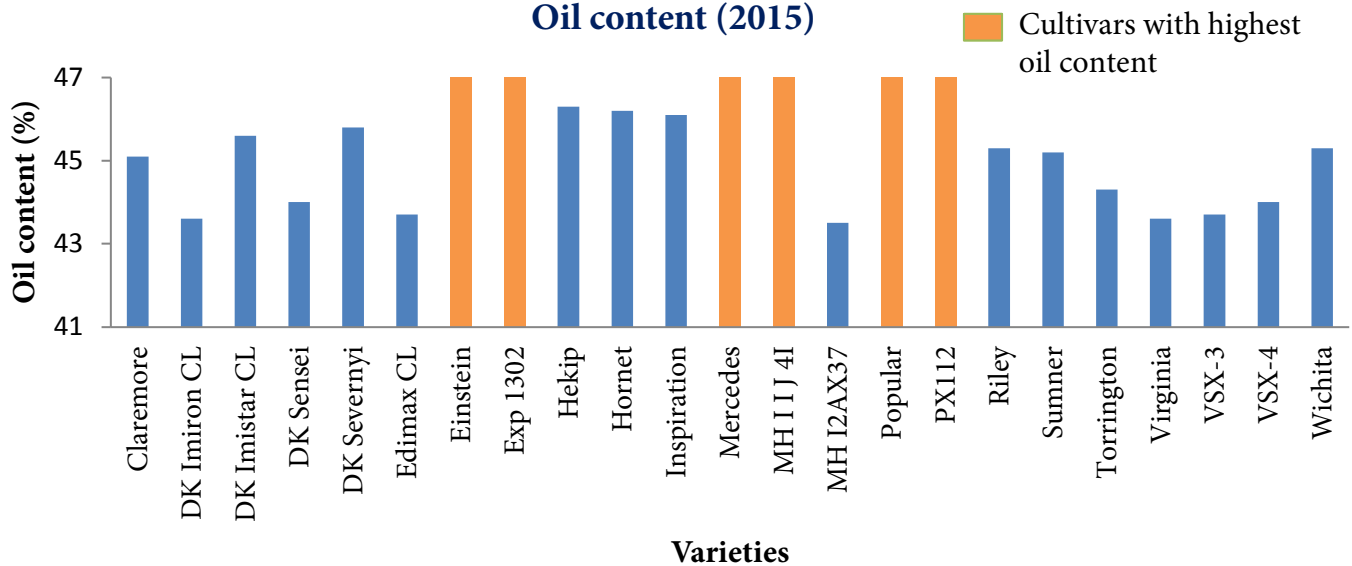
### Seed yield (2015)



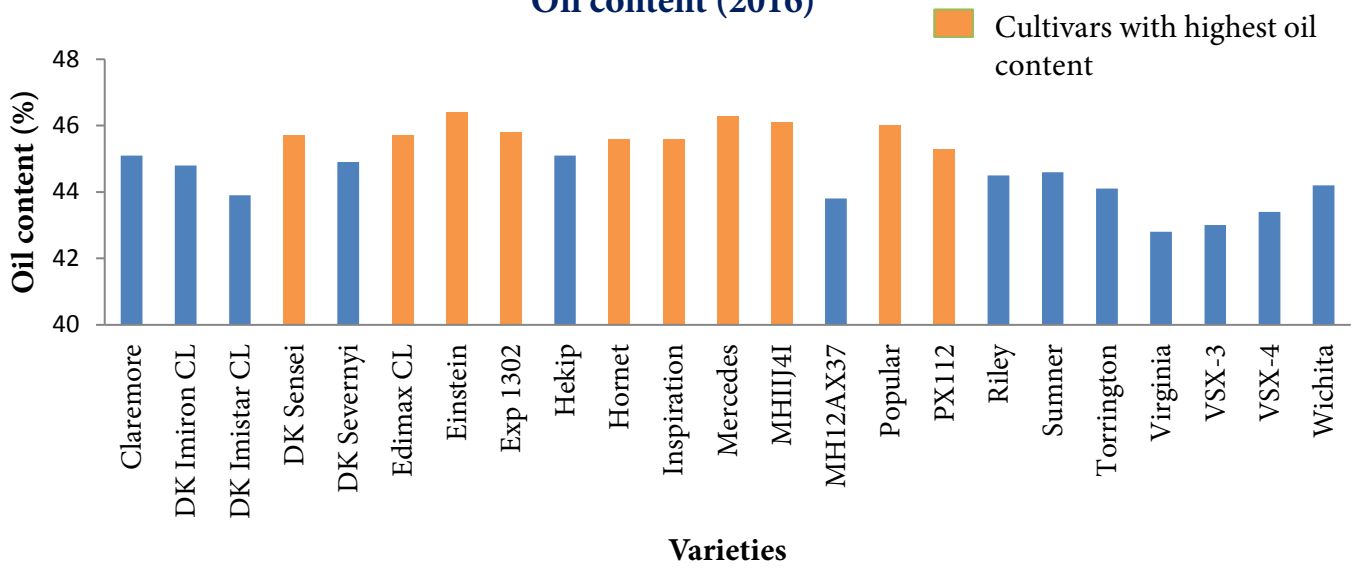
### Seed yield (2016)



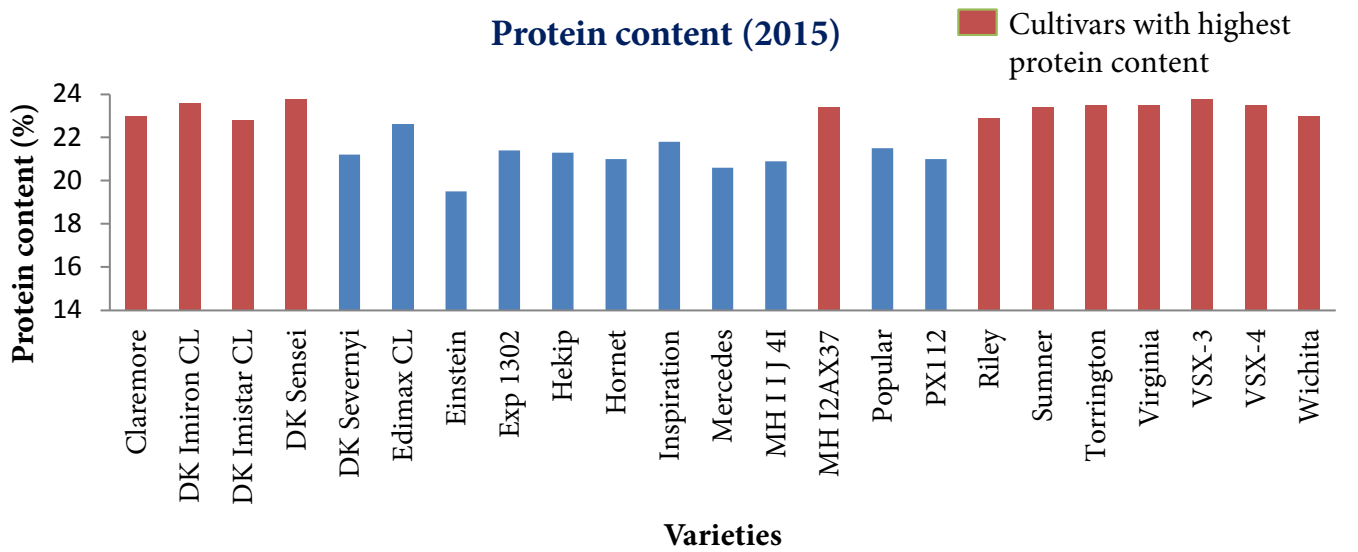
### Oil content (2015)



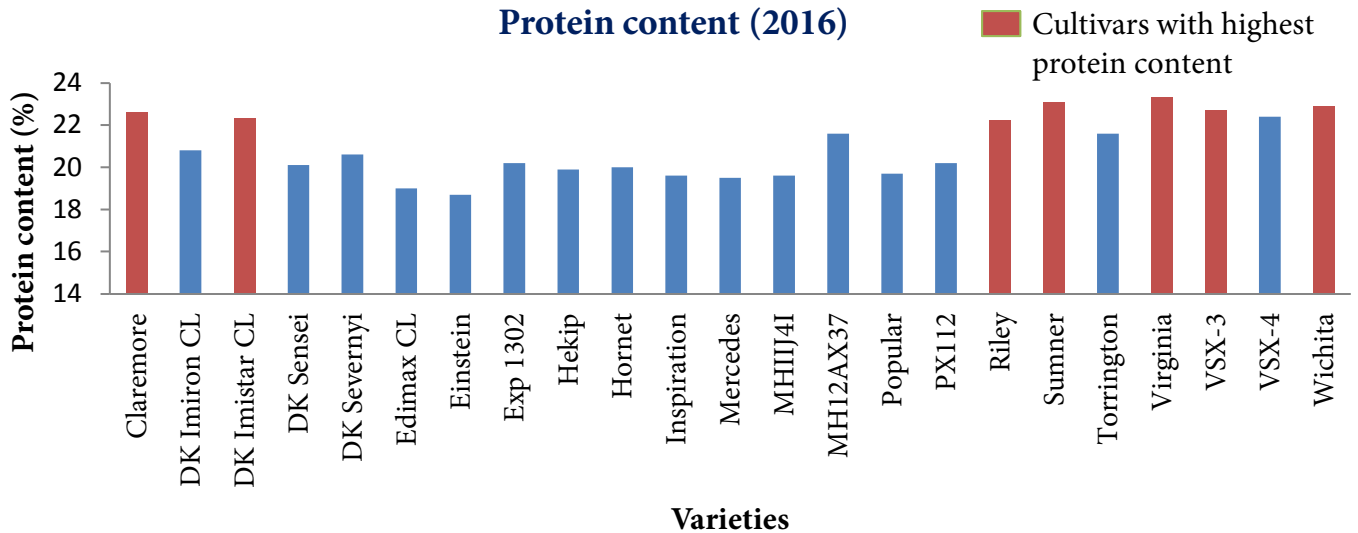
### Oil content (2016)



### Protein content (2015)



### Protein content (2016)



## Conclusions



Highest yield: Exp 1302, Hekip



Highest protein content:  
Claremore, DK Imistar CL,  
Riley, Sumner, Virginia, VSX-  
3, VSX-4, Wichita



Highest oil content: Einstein, Exp 1302,  
Mercedes, MHIIJ41, Popular, PX112

**Best in Tennessee:** Exp 1302, though not  
commercially available in the U.S.

**Next best option:** Hekip is commercially  
available and has high yield and oil content.

## Additional information

This data has been published in the following scientific article:

Tetteh, E. T., J.P. de Koff, B. Pokharel, R. Link, & C. Robbins. (2019). Effect of winter canola cultivar on seed yield, oil, and protein content. *Agronomy Journal*, 111(6), 2811-2820.

Additional winter canola variety trial information can be found through the National Winter Canola Variety Trial at <https://www.agronomy.k-state.edu/services/crop-performance-tests/canola-and-cotton.html>

Dean – Dr. Chandra Reddy, Associate Dean for Extension – Dr. Latif Lighari