

# OILSEED CROPPING SYSTEMS RESEARCH IN THE DRYLANDS

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# Recent Oilseed Journal Articles

- Schillinger, W.F., and T.C. Paulitz. 2018. Canola versus wheat rotation effects on subsequent wheat yield. *Field Crops Research* 223:26-32.
- Hansen, J.C., W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. 2018. Rhizosphere microbial communities of canola and wheat at six paired field sites. *Applied Soil Ecology* 130:185-193.
- Schlatter, D., J.C. Hansen, W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. 2019. Common and unique microbial rhizosphere communities in wheat and canola in semiarid Mediterranean environments. *Soil Biology and Biochemistry* (revisions submitted).
- Schillinger, W.F. 2019. Camelina: Long-term cropping systems research in a dry Mediterranean climate. *Field Crops Research* (accepted pending minor revisions).
- Hansen, J.C., W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. Soil microbial biomass and fungi reduced with canola introduced into a long-term monoculture wheat rotation. *Frontiers in Microbiology* (submitted).
- Hansen, J.C., W.F. Schillinger, T.S. Sullivan, and T.C. Paulitz. Soil microbial communities in a long-term dryland camelina cropping systems experiment. *Applied Soil Ecology* (in preparation).
- Oilseed related WSU, OSU, UI Field Day Abstracts in 2018: Eight articles.

# Camelina

Ten-year cropping systems experiment at Lind, WA.  
WW – Camelina – SF versus WW – SF



- Drought and frost tolerant; few diseases; low fertilizer requirement; grows on marginal lands.
- Unique fatty-acid profile; seed meal excellent poultry and cattle feed supplement.
- Excellent feedstock for low-carbon-emission jet fuel.





06/17/2010





2014. Precipitation = 7.6 inches  
Yield = 303 lbs/acre



2016. Precipitation = 12.9 inches  
Yield = 1,049 lbs/acre

# Winter Canola



When it works it  
really works!





# Horned Lark



© Terry Sohil



Karen Sowers, WSU

- Ground-dwelling bird native throughout North America.
- Year-round resident.
- Eats canola cotyledon leaves **before they emerge from the soil.**
- Flocking behavior once they find newly-planted canola field.
- Geographic range of damage increases every year.
- Horned larks have completely destroyed entire fields of winter and spring canola plantings and damaged many others. These birds completely destroy most of my winter canola plots. Do not damage spring canola quite as much.
- Many control strategies tested. None successful so far.
- Any ideas?



Arkion Life  
Sciences

## Avipel Section 18 & 24(c) Label Status - 2012

### Avipel Section 24(c) Labels - Corn

#### Avipel Liquid

State	SLN No.	Effect. Date	Expir. Date
DE	NA	NA	NA
FL	Crisis Exempt.	3/14/11	Open
MD	NA	NA	NA
ME	NA	NA	NA
MN	120003	4/18/12	4/18/17
MO	120004	4/6/12	7/4/13
ND	Pending		
PA	NA	NA	NA
UT	120002	4/9/12	4/6/17
VA	NA	NA	NA
VT	120001	4/9/12	7/15/13

#### Avipel Hopper Box

State	SLN No.	Effect. Date	Expir. Date
DE	120001	4/2/12	4/2/15
FL	Crisis Exempt.	3/14/11	Open
MD	120001	4/11/12	4/1/17
ME	120002	4/17/12	6/30/17
MN	120002	4/18/12	4/18/17
MO	120003	4/3/12	7/4/13
ND	Pending		
PA	120001	3/20/12	Sec. 3 label Approval
UT	120001	4/9/12	4/6/17
VA	120001	4/2/12	Sec. 3 label Approval
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MI	12-MI-02	2/8/12	2/8/13
MS	12-MS-01	3/13/12	3/13/13
SD	12-SD-02	3/4/12	3/4/13
TX	12-TX-05	3/9/12	3/9/13
WA	NA	NA	NA
WI	12-WI-01	3/24/12	3/24/13

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SD	12-SD-02	3/4/12	3/4/13
TX	12-TX-05	3/9/12	3/9/13
WA	NA	NA	NA
WI	12-WI-01	3/24/12	3/24/13

### Avipel Section 18 Labels

#### Sunflower

#### Avipel Liquid

State	File Number	Effect. Date	Expir. Date
ND	NA	NA	NA
SD	12-SD-01	2/17/12	3/3/13

#### Rice

#### AV - 1011

State	File Number	Effect. Date	Expir. Date
FA	Crisis Exempt.	3/14/11	Open
LA	11-LA-05	4/21/11	4/18/12

Current: 4/17/12

Replaces : 4/13/12



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# What about elemental sulfur (Nitrosul)??









# Long-term cropping systems research, Ritzville Jirava

Includes three 3-year rotations

- Canola – SW – Chem fallow
- W. triticale – SW – Chem fallow
- W. Wheat – SW – Undercut fallow



June 21, 2018











Can-SW-NTF

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	After harvest (late Aug.)	At SW planting (late Mar.)	Over-winter gain	Over-winter PSE <sup>†</sup>	SW grain yield (bu/ac)
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———— Soil water content (inches) ————

Previous crop

2017

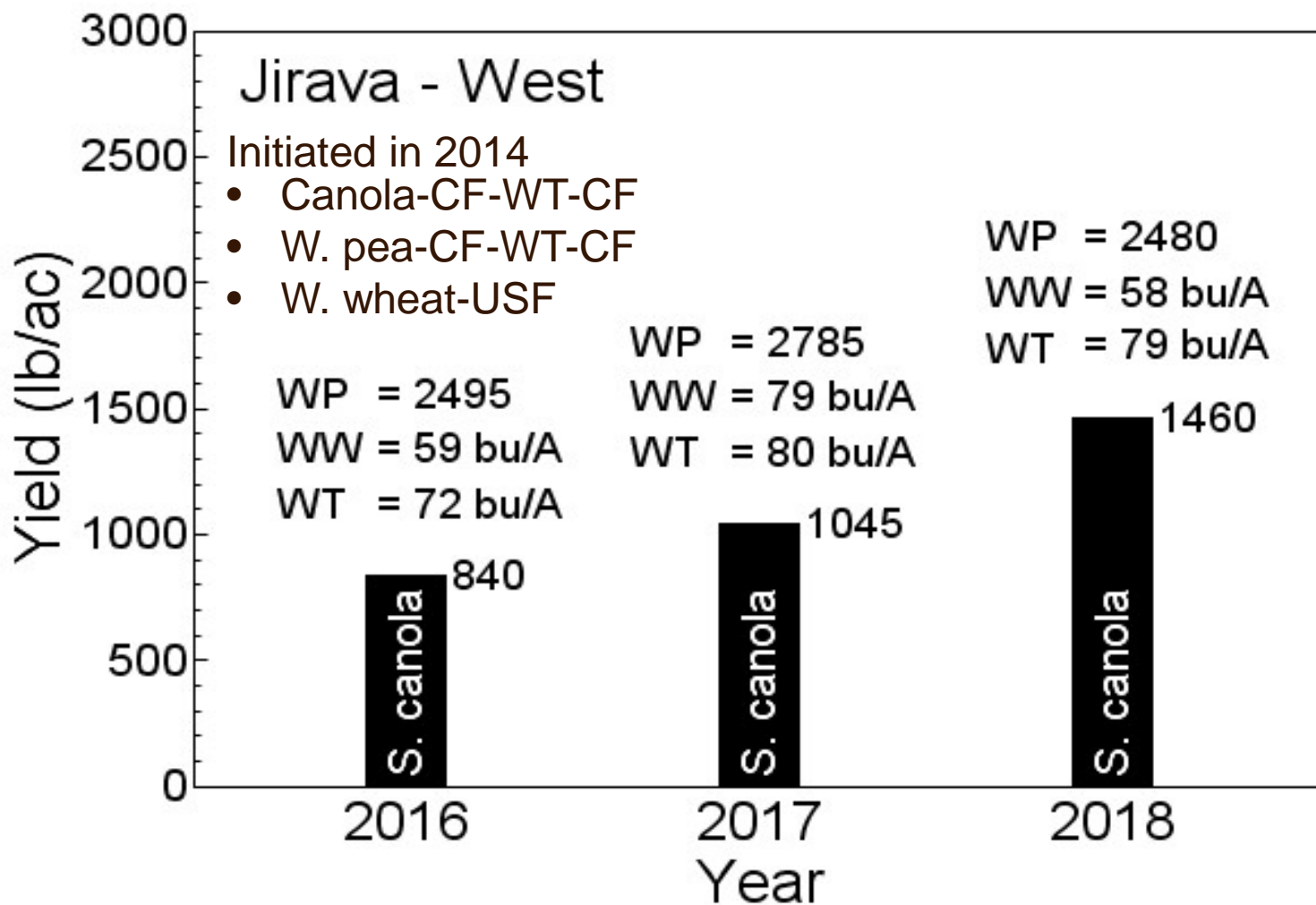
Winter canola	5.77	11.74 b	5.96 b	40	27 b
Winter triticale	5.89	16.79 a	10.90 a	73	38 a
Winter wheat	5.75	16.56 a	10.81 a	72	36 a
<i>p</i> -value	ns (0.770)	0.007	< 0.001		< 0.001

2018

Spring canola	5.59	13.97	8.37	76	33 b
Winter triticale	6.15	13.56	7.41	67	45 a
Winter wheat	5.48	14.62	9.14	83	43 a
<i>p</i> -value	ns (0.137)	ns (0.240)	ns (0.117)		< 0.001

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Schillinger, W.F., et al.  
2017. Laboratory  
method to evaluate  
wheat seedling  
emergence from deep  
planting depths.  
*Agronomy Journal* 109:  
2004-2010.





02/26/2010







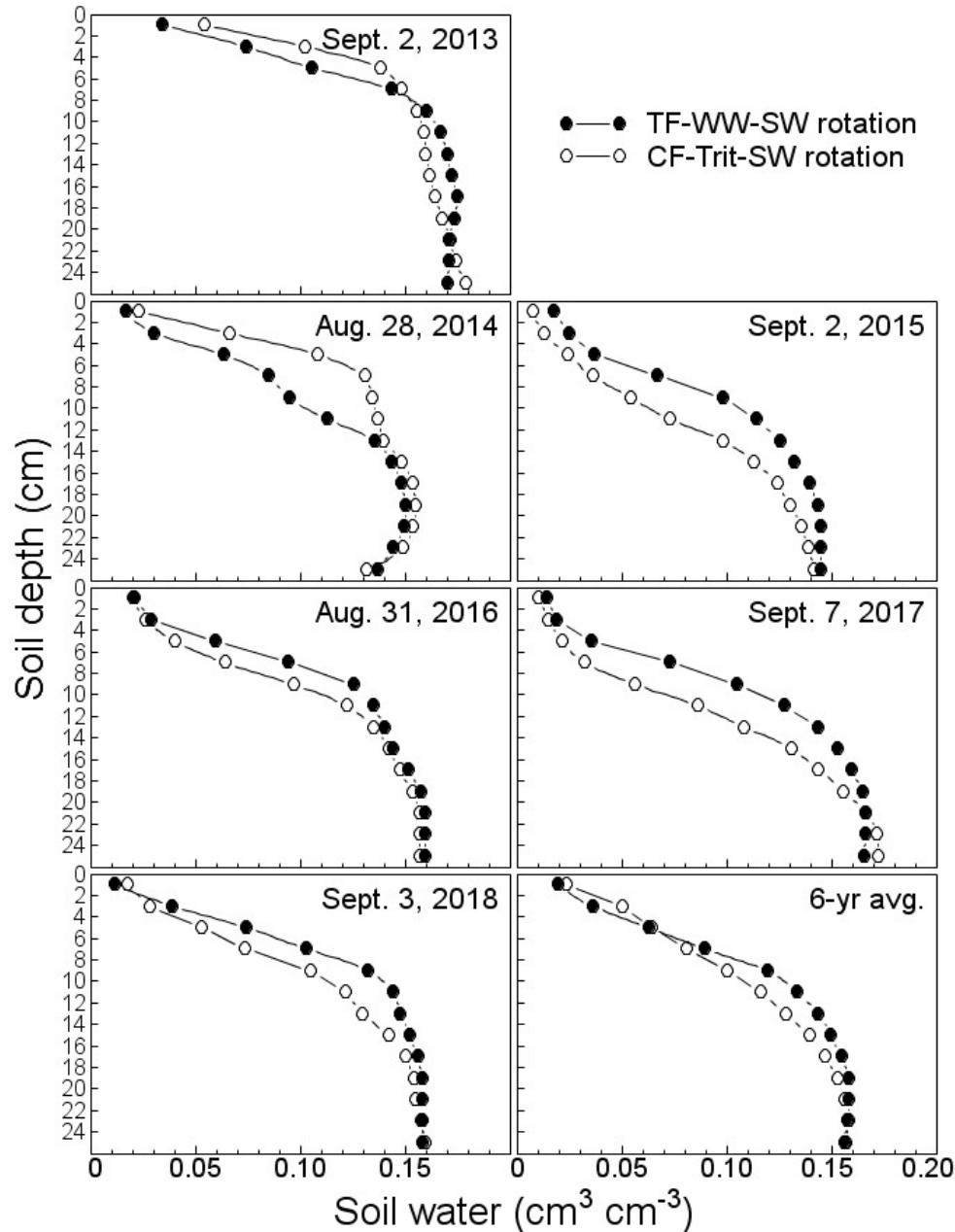








Seed-zone water content no-till and undercutter-tilled summer fallow at Ritzville in late August-early September



Plant winter canola early, then use growth retardant should be a high research priority

