

Local Barley Initiative

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Rationale

Determine the feasibility of organic winter barley production in the Willamette Valley considering

- Yield
- Quality
- Effects of companion crops
- Cropping history and soil type

Tools:

Field experiments

- Hyslop Farm
- East Farm
- Columbia Basin Agricultural Research Station

On-farm studies

Design

2008-2009 Field Experiments

Varieties

- Malt: Majestic
- Food: Streaker
- Forage: Orford

Companion Crops

- Camelina
- Crimson clover
- Meadowfoam
- Pea
- + control



Locations

- Hyslop Farm
- East Farm

Results

2008-2009 Field Experiments

Figure 1. Grain yield (lbs/acre) of three winter barley selections grown under organic conditions with four different companion crops, averaged over two locations, 2009 harvest; Hyslop and East Farms, Corvallis Oregon.

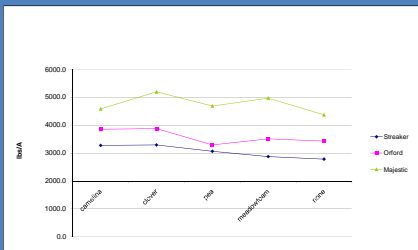


Table 1. Agronomic traits measured on three winter barley varieties grown under organic conditions at Hyslop and East Farms, Corvallis Oregon. Data are averages of five companion crop treatments. 2009 harvest.

Variety	Traits					
	Yield (lbs/acre)		Test Weight (lbs/bu)		Plant Height (inches)	
	Hyslop	East Farm	Hyslop	East Farm	Hyslop	East Farm
Majestic	6566 a*	2951 a	51 a	49 a	47 a	39 a
Streaker	3214 c	2902 a	59 b	57 a	41 a	36 a
Orford	4372 b	2809 a	49 b	49 a	43 a	40 a

*Means followed by the same letter are not statistically different at p<.05

Table 2. Agronomic traits measured on three winter barley varieties grown with different companion crops under organic conditions at Hyslop and East Farms, Corvallis Oregon. Data are averages of three barley varieties. 2009 harvest.

Companion	Traits					
	Yield (lbs/acre)		Test Weight (lbs/bu)		Plant Height (inches)	
	Hyslop	East Farm	Hyslop	East Farm	Hyslop	East Farm
Peas	4586 a*	2774 ab	52 c	52 b	45 a	39 b
Camelina	4739 a	3065 ab	53 ab	52 ab	44 a	37 cb
Meadowfoam	4745 a	2821 ab	53abc	51 b	44 a	38 cb
Clover	4780 a	3459 a	53 cb	53 a	44 a	45 a
Control	4736 a	2317 b	54 a	52 b	42 a	35 c

Means followed by the same letter are not statistically different at p<.05



Hyslop- High fertility



East Farm- Low fertility



Conclusions

Grain yields a function of soil fertility: long-term fallow and high fertility (Hyslop) = high yields. Continuous tillage and low fertility (East farm) = low yields.

Companion crops: apparent favorable trend for crimson clover; significant effect only for plant height at the East farm.

Variety x companion crop interactions: need to identify specific variety: companion combinations?

Need more replicates, locations, and years – underway!