

Upper Peninsula Variety Trial Crop Updates

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Overview

- Variety trials have been conducted at the Center since its establishment in 1899
- Priority to focus on crops successful in the U.P.
- Funding in 2014 from Michigan Department of Agriculture and Rural Development allowed expansion of the program



2014 Variety Trial Portfolio

- Winter wheat
 - Spring wheat
 - Spring barley*
 - Rye
 - Oats
 - Dry field peas
 - Dry beans*
 - Corn silage*
 - Alfalfa
 - Potatoes*
 - BMR forage sorghum
 - Cover Crop species
- * Includes off-site research plots

Winter Wheat



of Varieties: 18

Planting date: September 18, 2013

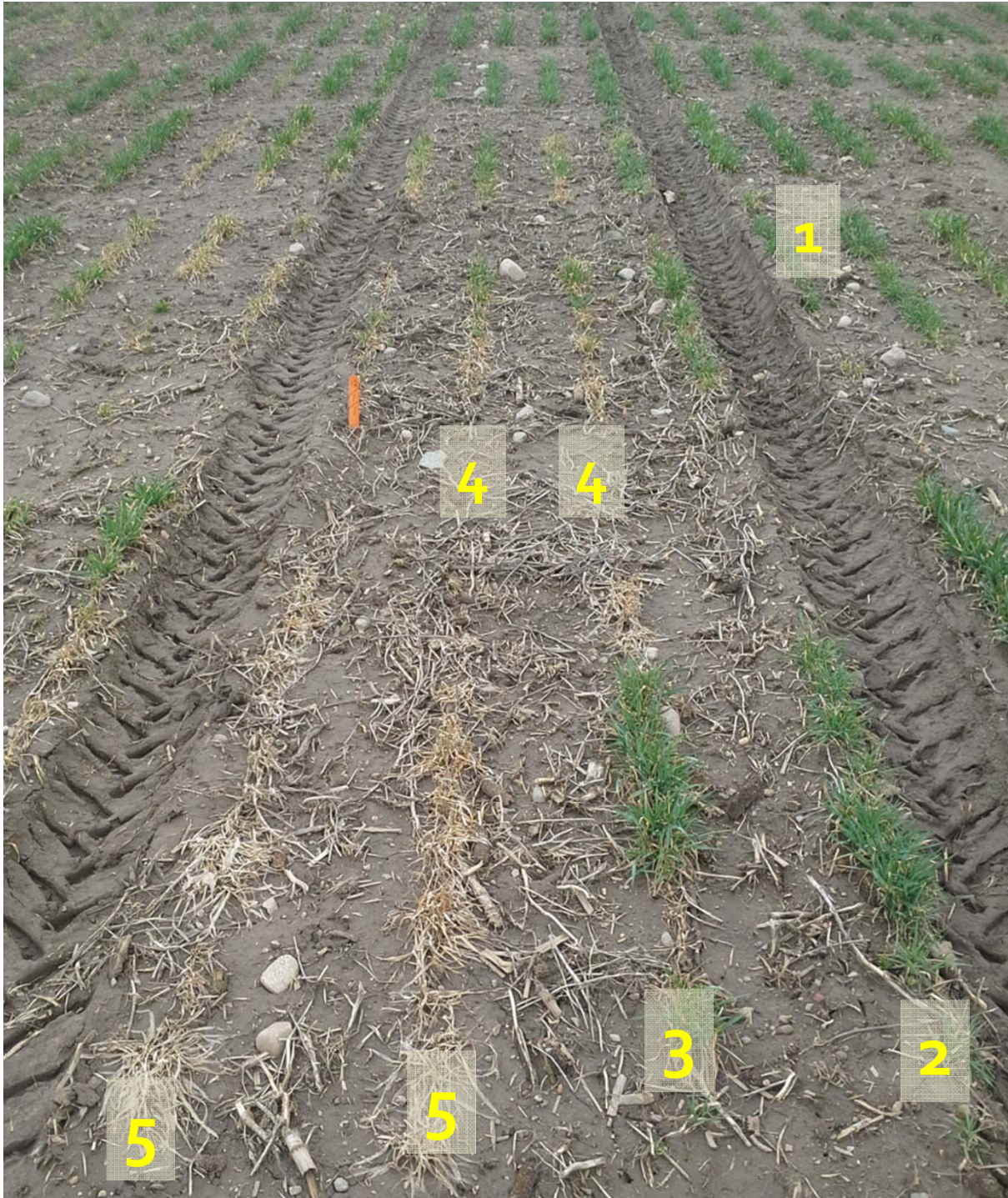
Seeding rate: 150 lbs./acre

Fertility: (Fall) 200 lbs./acre was applied at planting (12-24-24)

(Spring) 195 lbs./acre was applied at green-up (46-0-0)

Herbicide: Huskie was applied to control annual weeds at a rate of 15 ounces/acre

Harvested: August 15, 2014



Winter Kill Scale

1. Few or no damaged tillers, nearly all green and vibrant
2. Some damaged tillers, up to 10% damaged tillers, mostly green
3. Many damaged tillers, up to 30% damaged tillers, mostly green with many dead tillers per plant
4. Mostly damaged tillers, 30 to 80% damaged tillers, mostly dead with few tillers remaining per plant
5. All dead or nearly all dead tillers, 80 to 100% damaged, nearly all dead with one, two or less tillers remaining per plant



Variety	Moisture (%)	Test wt (lbs/bu)	Ht (in)	Bu/acre	Winter Survival	Supplier
Hopewell	14.1	59.6	26.7	44.4	1.5	MCIA ⁺ , WCIA ⁺⁺
Jupiter	14.2	60.6	25.7	50.8	3.0	MCIA
MCIA Blazer	14.6	60.7	26.7	38.2	3.2	MCIA
MCIA Red Devil	14.7	62.2	27.0	51.5	1.7	MCIA
MCIA Red Dragon	14.5	60.8	31.2	53.4	1.2	MCIA
Pioneer 25R34	14.8	61.4	27.5	58.5	1.5	Dupont Pioneer
Pioneer 25R47	15.1	60.5	26.0	57.2	1.7	Dupont Pioneer
PIP 721	15.3	61.2	29.2	59.7	1.5	Partners in Production
PIP 729	14.6	62.0	27.2	52.8	2.0	Partners in Production
PIP 732	14.1	59.3	24.2	37.1	2.2	Partners in Production
PIP 740	14.1	59.5	27.7	50.5	1.7	Partners in Production
PIP 761	15.1	60.6	28.5	50.6	2.0	Partners in Production
PIP 783	14.3	63.4	27.0	38.5	2.0	Partners in Production
PIP 792	14.4	62.2	27.2	50.2	1.7	Partners in Production
Pro 240	14.3	60.0	30.7	46.0	1.2	Pro Seed Genetics
Pro 260	14.2	60.1	26.2	44.1	3.0	Pro Seed Genetics
Pro 320A	14.4	60.9	29.5	37.7	2.0	Pro Seed Genetics
Sunburst	15.6	63.5	24.5	53.6	2.0	MCIA, WCIA





Winter Wheat summary

- Average yield 49 bu./acre
- Average test weight 61 lbs./bu.
- Higher than optimal moisture at harvest
- Varieties to watch: Pioneer 25R34 & 25R47, PIP 721



Spring Wheat



of Varieties: 11

Planting date: May 22, 2014

Seeding rate: 116 lbs./acre

Fertility: 163 lbs./acre was applied at planting (46-0-0)

Herbicide: Buctril was applied to control annual weeds at a rate of 1.5 pints/acre

Harvested: September 16, 2014

Variety	Moisture (%)	Test wt (lbs/bu)	Ht (in)	Bu/acre	Relative Maturity	Origin
Rollag	15.2	59.4	25.5	29.8	Medium	MN
RB07	15.5	56.6	24.7	27.0	Early	MN
Prosper	15.7	59.3	28.7	34.1	Medium	ND
LCS Powerplay	15.9	59.2	26.5	34.6	Medium	LCS
Norden	16.4	60.2	24.0	31.1	Medium	MN
Linkert	15.5	59.2	25.2	30.2	Medium	MN
LCS Iguacu	16.7	58.8	27.7	31.2	Medium	LCS
Forefront	15.3	58.8	28.5	28.4	Early	SD
Faller	15.2	59.0	29.0	34.1	Medium	ND
LCS Breakaway	15.9	59.6	23.0	28.4	Early	LCS
LCS Albany	16.1	58.1	25.0	29.4	Late	LCS



Spring Wheat summary

- Average yield 31 bu./acre
- Average test weight 59 lbs./bu.
- Higher than optimal moisture at harvest
- Varieties to watch: LCS Powerplay, Faller

Spring Barley



Locations: UPREC, Schoolcraft, Leelanau, and Presque Isle Counties

of Varieties: 23

Planting date: May 10, 2014

Seeding rate: 96 lbs./acre

Fertility: 108 lbs./acre was applied at planting (46-0-0)

Herbicide: Huskie was applied to control annual weeds at a rate of 11 oz./acre

Fungicide: Prosaro was applied at heading at a rate of 8.2 oz./acre to control Fusarium head blight

Insecticide: Silencer was applied to control cereal leaf beetle at a rate of 2.56 oz./acre

Harvested: September 3, 2014

Variety	Moisture (%)	Test wt (lbs/bu)	Ht (in)	Bu/acre	Relative Maturity	Type	Origin
2B05-0811	15.8	47.9	25.0	92.1	Medium	2 row	Experimental
2B09-3425	15.6	48.2	23.4	89.5	Medium	2 row	Experimental
2ND25276	15.7	47.9	24.9	81.4	Medium	2 row	Experimental
ABI Voyager	16.5	47.6	25.3	83.9	Late	2 row	BARI
AC Metcalfe	15.7	49.5	23.6	79.4	Medium	2 row	Can
Celebration	15.4	50.1	24.3	86.6	Early	6 row	BARI
Conlon	15.8	51.1	23.0	76.2	Early	2 row	ND
Conrad	15.9	50.0	22.8	87.1	Late	2 row	BARI
Innovation	15.8	50.9	25.5	88.9	Early	6 row	BARI
Lacey	15.9	51.9	22.6	87.1	Early	6 row	MN
LCS Genie	17.2	49.7	20.8	83.3	Late	2 row	LCS
Legacy	16.0	47.5	26.8	93.8	Early	6 row	BARI
Merit	17.0	48.5	23.9	73.8	Late	2 row	BARI
Merit 57	16.5	48.9	26.1	89.2	Medium	2 row	BARI
NSA 1820	16.5	51.1	20.5	91.0	Late	2 row	LG
Odyssey	17.2	48.5	18.4	99.7	Late	2 row	LG
Overture	17.0	49.0	20.3	85.3	Late	2 row	LG
Pinnacle	16.8	48.5	24.2	91.2	Early	2 row	ND
Quest	15.5	50.7	27.6	93.3	Early	6 row	MN
Rasmusson	16.0	50.7	23.6	96.1	Early	6 row	MN
Robust	16.0	50.6	24.1	74.7	Early	6 row	MN
Stellar ND	15.5	48.1	24.6	82.6	Early	6 row	ND
Tradition	15.4	50.4	25.3	89.2	Early	6 row	BARI

Variety	Moisture (%)	Test wt (lbs/bu)	Ht (in)	Bu/acre	Relative Maturity	Type	Origin
2B05-0811	15.1	48.2	30.9	102.6	Medium	2 row	Experimental
2B09-3425	15.2	47.8	27.1	88.9	Medium	2 row	Experimental
2ND25276	15.8	49.0	34.0	109.8	Medium	2 row	Experimental
ABI Voyager	15.7	47.3	33.4	95.1	Late	2 row	BARI
AC Metcalfe	15.2	50.2	33.0	85.2	Medium	2 row	Can
Celebration	14.9	50.8	30.5	124.2	Early	6 row	BARI
Conlon	15.2	51.1	31.0	98.1	Early	2 row	ND
Conrad	15.2	49.6	33.6	106.5	Late	2 row	BARI
Innovation	14.7	50.1	31.3	113.2	Early	6 row	BARI
Lacey	14.7	51.6	31.1	102.6	Early	6 row	MN
LCS Genie	15.4	50.7	25.8	122.9	Late	2 row	LCS
Legacy	14.6	47.5	32.8	115.3	Early	6 row	BARI
Merit	15.4	47.4	32.6	100.3	Late	2 row	BARI
Merit 57	15.7	48.7	32.1	104.9	Medium	2 row	BARI
NSA 1820	15.2	50.6	28.8	97.1	Late	2 row	LG
Odyssey	15.1	49.6	25.1	112.8	Late	2 row	LG
Overture	15.6	47.9	27.5	111.2	Late	2 row	LG
Pinnacle	16.0	48.1	30.5	100.0	Early	2 row	ND
Quest	15.2	50.2	32.3	113.0	Early	6 row	MN
Rasmusson	15.1	50.4	31.3	120.6	Early	6 row	MN
Robust	14.9	50.8	35.1	106.8	Early	6 row	MN
Stellar ND	14.7	47.9	32.3	111.0	Early	6 row	ND
Tradition	14.7	49.9	30.8	124.9	Early	6 row	BARI

Barley summary

- Average yield (Chatham) 87 bu./acre
- Average test weight 49 lbs./bu.
- Higher than optimal moisture at harvest
- 2 row varieties show the most promise for the malting barley industry
- Varieties to watch: 2 row – Conlon, Odyssey, Pinnacle
6 row – Rasmusson, Tradition

Oats



of Varieties: 17 named + 2 experimental = 19

Planting date: May 14, 2014

Seeding rate: 96 lbs./acre

Fertility: 130 lbs./acre was applied at planting (46-0-0)

Herbicide: Buctril (1.5 pts./acre) was applied to control annual weeds

Harvested: September 3, 2014

Variety	Moisture (%)	Test wt (lbs/bu)	Ht (in)	Bu/acre	Relative Maturity	Lodging	Origin
Badger	16.3	33.2	28.2	63.7	Early	5	WI
Beta-Gene	15.7	34.3	32.7	97.5	Early	2	WI
Deon	15.9	35.6	36.7	89.2	Late	0	MN
Drumlin	15.2	33.8	31.0	85.4	Early	4	WI
Fsker	15.3	32.5	29.0	95.9	Early	3	WI
Goliath	15.8	36.9	41.7	80.3	Late	3	SD
Horsepower	15.2	35.1	30.7	88.4	Early	4	SD
Ida	15.9	33.6	31.7	91.4	Early	1	MI
IL 06-5433	15.2	35.3	26.7	93.3	Early	1	Experimental
Kame	15.3	32.0	29.0	91.7	Early	5	WI
Ogle	15.2	32.9	30.0	109.1	Early	1	IL
Ron	16.8	34.6	35.5	95.6	Medium	1	WI
Saber	14.9	34.6	28.7	94.3	Early	4	IL
Shelby 427	15.6	35.3	35.0	62.4	Early	5	SD
Souris	15.4	35.0	30.5	91.1	Early	4	ND
Spurs	15.4	35.7	28.2	88.2	Early	2	IL
Tack	15.3	36.7	29.5	84.6	Early	2	IL
X10097-1	14.5	36.2	26.5	76.8	Early	4	Experimental
X8859-1	15.5	34.0	31.0	92.3	Medium	4	Experimental



Oats summary

- Average yield 88 bu./acre
- Average test weight 34 lbs./bu.
- Higher than optimal moisture at harvest
- Varieties to watch: Deon, Goliath, Ida, Ogle, Ron



Dry Field Peas



of Varieties: 9

Planting date: May 22, 2014

Seeding rate: 150 lbs./acre

Fertility: 100 lbs./acre was applied at planting (21-0-0)

Herbicide: Pursuit was applied to control annual weeds at a rate of 1.75 oz./acre

Harvested: September 18, 2014

Variety	Moisture (%)	Test wt (lbs/bu)	Bu/acre	Origin
SW Midas	15.0	61.2	56.8	Pulse USA
Arcadia	15.4	60.2	66.5	Pulse USA
Vegas	14.9	60.2	51.7	Pulse USA
DS Admiral	15.0	60.7	61.7	Pulse USA
Mystique	15.7	60.7	56.7	Pulse USA
Nette	15.3	62.1	69.5	Pulse USA
Cruiser	15.0	60.0	66.8	Pulse USA
Matrix	15.2	60.0	49.6	Pulse USA
Korando	15.0	61.2	67.2	Pulse USA







Dry Field Peas summary

- Average yield 61 bu./acre
- Average test weight 61 lbs./bu.
- Higher than optimal moisture at harvest
- Varieties to watch: Nette, DS Admiral



Alfalfa



of Varieties: 6 seeded in 2012, 4 seeded in 2013, 3 RR varieties seeded in 2013

Planting date: August 2, 2012 & July 12, 2013

Fertility: 600 lbs./acre applied (0-14-42 + Boron)

Herbicide: Only applied to RR trial – 1 quart/acre RoundUp Weathermax (3rd trifoliate stage of alfalfa)

Harvested: No cuttings in seeding year, three cuttings in subsequent years

2012 UPREC Alfalfa Variety Trial

Entry	June 19	July 31	Sept 17	2014 Total	2013 Total	Grand Total
Pioneer 55V12	1.40	1.11	0.54	3.05	3.40	6.45
Pioneer 55V50	1.60	1.20	0.60	3.39	3.73	7.12
ForageGold	1.44	0.85	0.51	2.80	3.25	6.05
Mariner IV	1.36	0.88	0.48	2.71	3.06	5.77
SolarGold	1.90	1.33	0.54	3.77	3.39	7.16
Vernal	1.75	0.97	0.49	3.22	3.09	6.30



2013 UPREC Alfalfa Variety Trial Conventional and Round-up Ready

Entry	June 19	July 31	Sept 17	2014 Total
DG 4210	1.60	1.35	1.20	4.15
5312	1.57	1.33	1.18	4.08
Pioneer 55V50	1.46	1.45	1.01	3.92
Vernal	1.62	1.28	1.29	4.18
DKA 41-16 RR	1.49	1.26	1.18	3.93
DKA 41-18 RR	1.64	1.32	1.24	4.21
Yieldmaster RR	1.63	1.36	1.20	4.19



Cover Crop Species Trial

of species: 8 species + 1 diverse mix

Planting date: June 27, 2014

Seeding rate: Varied

Fertility: N/A

Herbicide: N/A

Harvested: N/A, allowed to winterkill



Cover Crop Species	Seeding Rate (lbs./acre)	Species description	% Included in Diverse Mix
Buckwheat	60	Broadleaf	16
Annual ryegrass	20	Cool season grass	13
Sunn Hemp	20	Warm season legume	10
Chickling Vetch	60	Cool season legume	19
Iron and Clay Cowpeas	55	Warm season legume	19
Ethiopian cabbage	6	Brassica	3
Egyptian Wheat	10	Warm season grass	16
Impact forage collards	8	Brassica	3
Diverse Mix	31	Mix	100



Cover Crop Species	Solvi ^a Reading Basal CO ₂ Respiration (CO ₂ -C ppm)	Significant difference	Relative Biomass Rating*	Relative Weed Suppression Rating*
Annual Rye	32.93	A	2	3
Chickling vetch	32.40	AB	1	2
Sunn Hemp	29.70	ABC	9	9
Egyptian Wheat	27.33	BCD	7	7
Diverse Mix	26.24	CD	5	5
E. Cabbage	24.82	CDE	4	6
I.F. Collards	24.71	CDE	6	4
Cowpeas	23.18	DE	8	8
Buckwheat	19.32	E	3	1

* (1 = excellent, 9 = poor)





Cover Crop summary

- Establish your goals for using the cover crop
 - Buckwheat was top weed suppressor
 - Chickling vetch was top biomass producer
 - Annual rye had the highest respiration reading



Questions?

