

2021 Report

Ontario Dry Bean Variety Trials

Prepared by the Ontario Pulse Crop Committee

Data collected 2017 - 2021

www.gobeans.ca



This infosheet contains the most recent variety information for registered dry edible bean varieties planted and harvested in 2021. Experimental and non-registered varieties may also be included in the trials, but data is not presented. Contact one of the individuals listed below, for information on other varieties or to comment on the trials. The information is prepared annually by the Ontario Pulse Crop Committee (OPCC).

REFERENCES:

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TABLE OF CONTENTS:

- Table 1a – 2016-2020 White Bean Variety Performance Trial, Long Season Area
- Table 1b – 2017-2021 White Bean Variety Performance Trial, Short Season Area
- Graph 1c – 2019-2021 White Bean Variety Performance Trial, Short Season Area, 3 Year Average
- Graph 1d – 2018-2020 White Bean Variety Performance Trial, Long Season Area, 3 Year Average
- Table 2 – 2019–2021 White Bean Characteristics and Distributors
- Table 3 – 2019–2021 Coloured Bean Major Variety Performance and Characteristics
- Table 4 – 2017-2021 Average Coloured Bean Major Performance
- Table 4a – St. Thomas Station Report: 2017-2021 Coloured Bean Major Performance Trial
- Table 4b – Exeter Station Report: 2018–2021 Coloured Bean Major Performance Trial
- Table 4c – Elora Station Report: 2016-2020 Coloured Bean Major Performance Trial
- Table 4d – Woodstock Station Report: 2017-2021 Coloured Bean Major Performance Trial
- Graph 4e – 2019-2021 Cranberry Bean Variety Performance Trial, All Areas, 3 Year Average
- Graph 4f – 2018-2020 Kidney Bean Variety Performance Trial, All Areas, 3 Year Average
- Table 5 – 2017-2021 Coloured Bean Minor Variety Performance Trial
- Graph 5a – 2019-2021 Coloured Bean Minor Variety Performance Trial, All Areas, 3 Year Average
- Table 6 – 2017-2021 Coloured Bean Minor Characteristics and Distributors
- Table 7 – Addresses of Distributors for Edible Bean Varieties

Table 1a - 2016-2020 White Bean Variety Performance Trial, Long Season Area

Variety	Days to Maturity ²	Yield (lbs/ac) ¹													
		Long Season All Locations ⁴				St Thomas ⁴					Woodstock ⁴				
		5 Year	4 Year	3 Year	2 Year	5 Year	4 Year	3 Year	2 Year	2020	5 Year	4 Year	3 Year	2 Year	2020
Indi	90	--	--	3704	3524	--	--	4221	4426	4770	--	--	3188	2622	1790
OAC Fusion	90	2820	2975	3037	2962	3162	3200	3153	3497	4123	2478	2750	2920	2426	2038
Bolt	90	2842	3021	3171	2984	3105	3180	3270	3440	3685	2580	2862	3072	2528	2149
AAC Shock	90	2901	3058	3215	3283	3161	3195	3255	3589	3784	2641	2921	3176	2977	2396
HMS Medalist	91	--	--	--	3566	--	--	--	4291	4443	--	--	--	2840	2256
OAC Thunder	91	2707	2944	3038	3132	3187	3389	3446	3971	3968	2228	2499	2629	2292	1949
OAC Charm	92	--	--	3674	3631	--	--	3892	4243	4394	--	--	3456	3019	2417
SV1893GH	92	--	--	--	--	--	--	--	--	4280	--	--	--	--	2000
Lightning	92	2737	2897	3050	2960	2967	3041	3102	3491	3424	2507	2753	2999	2430	2249
Armada	92	--	--	3844	3708	--	--	4221	4362	4580	--	--	3467	3054	2414
OAC Marker	93	--	--	3421	3384	--	--	3684	4048	4135	--	--	3159	2721	2338
Blizzard	93	--	--	3762	3673	--	--	4269	4478	4648	--	--	3255	2867	2392
OAC Plasma	94	3213	3416	3538	3541	3456	3553	3627	4057	4341	2971	3278	3449	3025	2510
Mist	94	3093	3293	3546	3466	3582	3637	3921	4138	4438	2604	2949	3172	2795	2157
Lighthouse	95	3201	3407	3558	3426	3783	3909	3981	4235	4464	2619	2905	3136	2616	2091
AAC Argosy	95	3264	3474	3581	3522	3736	3875	3909	4121	4141	2792	3072	3253	2923	2418
Nautica	95	3171	3346	3370	3238	3683	3799	3740	3962	3828	2659	2893	3000	2515	1716
T9905	95	3391	3601	3821	3545	3912	4040	4326	4346	4547	2870	3162	3316	2744	2256
AC Apex	95	3206	3419	3495	3518	3603	3699	3682	4166	4095	2808	3140	3309	2871	2452
OAC Equinox	97	--	--	3816	3711	--	--	4181	4603	4803	--	--	3451	2820	2274
OAC Award	97	--	--	3688	3703	--	--	3799	4233	4364	--	--	3576	3172	2797
Rogue	97	3304	3519	3610	3490	3574	3667	3671	3890	3952	3035	3371	3549	3091	2500
Rexeter	98	3062	3234	3374	3247	3699	3787	3912	4258	4380	2425	2681	2837	2235	1880
Average Yield (lbs/ac)¹		3065	3257	3491	3419	3472	3569	3774	4084	4243	2658	2945	3208	2754	2236
LSD (0.05)³		153	173	203	213	254	288	330	323	470	171	194	234	278	348

¹ To convert lbs/acre to t/ha divide by 893.

² Maturity is 3 year average. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different.

Yields that differ by an amount less or equal to the LSD should be considered the same.

⁴No sufficient data was generated in 2021 for long season locations.

Long Season Testing Locations					
St Thomas	2020	2019	2018	2017	2016
Woodstock	2020	2019	2018	2017	2016

Table 1b - 2017-2021 White Bean Variety Performance Trial, Short Season Area

Variety	Days to Maturity ²	Yield (lbs/ac) ¹													
		Short Season All Locations				Blyth			Exeter				Winchester		
		5 Year	4 Year	3 Year	2 Year	3 Year	2 Year	2021	4 Year	3 Year	2 Year	2021	3 Year	2 Year	2021
Bolt	97	2828	2815	2780	2876	3100	3146	3105	2725	2575	2632	2393	3110	3185	3030
OAC Fusion	98	2947	2914	2874	3009	2918	3048	3046	2951	2849	3011	2841	3208	3229	3327
Indi	98	--	3217	3195	3295	3508	3639	3522	3295	3134	3121	3099	3545	3659	3662
OAC Marker	99	--	3135	3112	3196	3290	3405	3538	3051	2945	2927	2919	3633	3685	3646
OAC Charm	99	--	3191	3200	3281	3222	3218	3426	3196	3175	3205	3022	3588	3722	3817
AAC Shock	99	3136	3123	3111	3181	3515	3501	3589	3084	2956	3034	2944	3315	3314	3607
Blizzard	100	--	3230	3241	3321	3326	3470	3598	3275	3222	3234	3173	3623	3651	3643
HMS Medalist	100	--	--	3239	3302	3400	3604	3393	--	2988	2951	2766	3660	3692	3633
OAC Thunder	100	3062	3084	3061	3100	3250	3331	3298	2994	2887	3005	2631	3518	3322	3202
OAC Plasma	101	3140	3103	3101	3138	3216	3335	3455	2983	2950	3030	3005	3472	3382	3396
Armada	101	--	3304	3254	3263	3475	3621	3276	3200	2976	2842	2603	3671	3666	3802
T9905	101	3101	3172	3184	3267	3186	3306	3343	3104	3042	3034	2784	3722	3856	3829
Victory	101	--	--	--	--	--	--	3540	--	--	--	2757	--	--	3635
Lighthouse	102	3186	3161	3117	3201	3337	3449	3401	3127	2964	2975	2887	3414	3443	3391
AC Apex	103	3158	3137	3077	3093	3198	3171	3419	3212	3073	3099	2743	3427	3359	3486
AAC Argosy	103	3222	3180	3137	3172	3194	3234	3508	3200	3063	3104	2798	3585	3594	3552
OAC Award	103	--	3201	3153	3126	2959	2931	3011	3195	3074	3034	2806	3684	3680	3657
Nautica	103	2937	2896	2871	2789	2904	2925	2822	2947	2878	2847	2687	3260	3025	3090
Rogue	104	3200	3171	3141	3193	3154	3187	3171	3248	3198	3176	2875	3425	3572	3660
OAC Equinox	104	--	3290	3249	3401	3468	3693	3726	3359	3239	3311	2842	3524	3543	3724
Rexeter	105	3115	3052	3008	2984	3169	3101	2953	3139	3023	2906	2704	3336	3315	3310
Average Yield (lbs/ac)¹		3086	3125	3105	3159	3239	3316	3340	3120	3010	3024	2823	3486	3495	3529
LSD (0.05)³		91	96	112	137	244	316	353	185	219	296	360	238	261	345

¹ To convert lbs/acre to t/ha divide by 893.

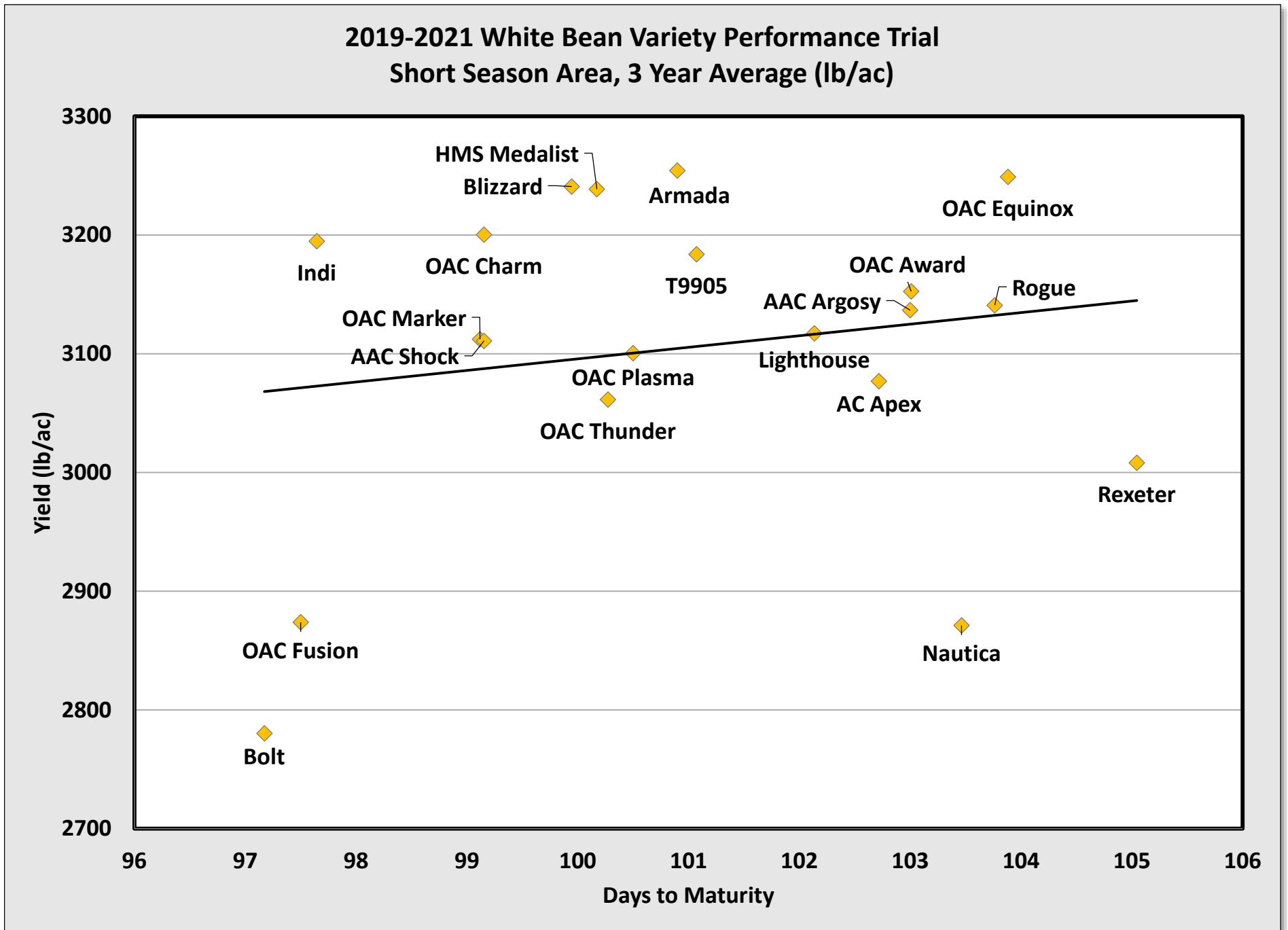
² Maturity is 3 year average. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different.

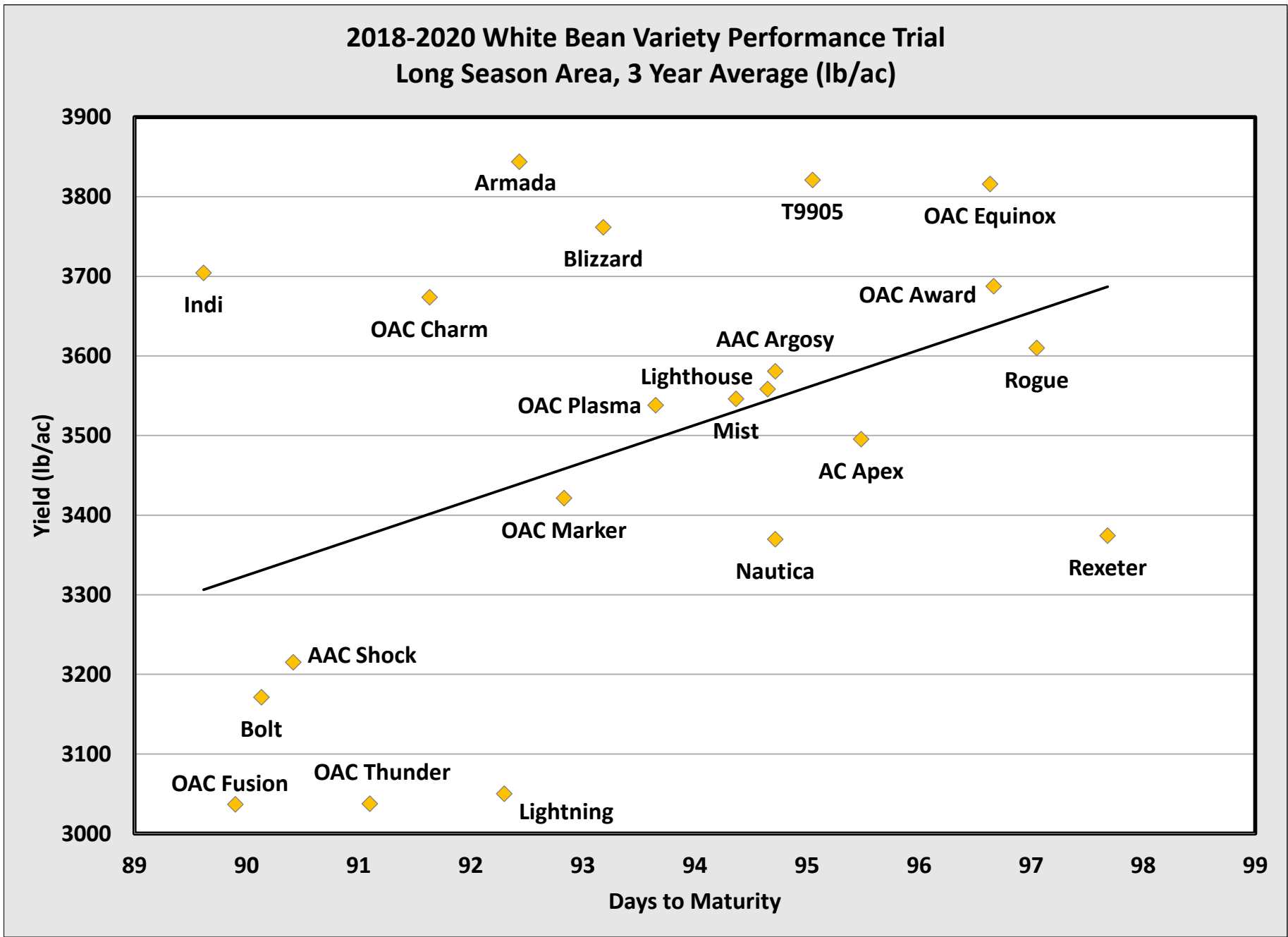
Yields that differ by an amount less or equal to the LSD should be considered the same.

Short Season Testing Locations					
Blyth	2021	2020	2019	--	2017
Exeter	2021	2020	2019	2018	--
Elora	--	2020	2019	2018	2017
Winchester	2021	2020	2019	--	--

Graph 1c: White Bean Short Season Area



Graph 1d: White Bean Long Season Area



No sufficient data was generated in 2021 for long season locations.

Table 2 - 2019-2021 White Bean Characteristics and Distributors

Variety	100 Seed Weight ³ (g)	Disease Reaction ¹					Common Blight	Harvestability ⁴	Distributor
		Bean Common Mosaic Virus		Anthracnose ²					
		Race		Race					
		1	15	17	23	73			
Bolt	24.6	R	R	S	S	R	S	1.6	Hensall Co-op
Indi	20.4	R	S	S	S	S	S	1.4	ADM Seedwest
OAC Fusion	20.0	NA	NA	NA	NA	R	S	1.9	AAFC/U of G
AAC Shock	24.5	R	R	S	S	S	R	2.2	Hensall Co-op
OAC Charm	23.0	NA	NA	NA	NA	R	NA	2.3	AAFC/U of G
OAC Marker	21.7	NA	NA	NA	NA	NA	NA	2.2	AAFC/U of G
Blizzard	21.8	NA	NA	NA	NA	S	S	1.8	ProVita, ADM Seedwest
OAC Thunder	23.3	R	R	S	S	S	S	2.4	SeCan
HMS Medalist	20.9	R	S	S	S	S	S	1.9	ADM Seedwest
OAC Plasma	21.9	R	R	NA	NA	R	R	2.3	AAFC/U of G
Armada	23.8	NA	NA	NA	NA	NA	NA	1.9	ADM Seedwest
T9905	23.8	R	R	R	R	S	S	2.4	Treasure Valley, The Andersons
Lighthouse	22.6	R	R	NA	R	S	R	1.9	R.T. Bolton
AAC Argosy	23.9	R	R	S	S	S	R	2.3	Hensall Co-op
AC Apex	25.1	R	R	S	R	S	R	2.0	Treasure Valley, The Andersons
Nautica	20.3	R	R	S	S	S	S	2.0	Hensall Co-op
OAC Award	23.1	NA	NA	NA	NA	S	NA	2.4	AAFC/U of G
OAC Equinox	25.8	NA	NA	NA	NA	S	NA	1.8	AAFC/U of G
Victory	20.5	R	R	NA	NA	NA	NA	1.5	ADM Seedwest
Rogue	20.3	R	R	NA	NA	R	R	3.2	Hensall Co-op
Rexeter	21.6	R	S	S	S	S	R	2.7	Hensall Co-op

¹ R = Resistant, S = Susceptible, NA = Not Available

² Anthracnose ratings, the predominant race found now in Ontario is Race 73. Race 17 (binary system) is equivalent to the Alpha race, race 23 (binary system) is equivalent to the Delta race.

³ To convert 100 seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ A variety's harvestability is based on a scale of 1-5, where 1 = upright plant type, standing erect with good bottom pod height and 5 = more prostrate plant type or plants that are not erect, with poor bottom pod height.

Table 3 - 2019-2021 Coloured Bean Characteristics and Distributors

Variety	Market Class	100 Seed Weight ¹ (g)	Disease Reaction ²					Harvestability ⁴	Distributor
			Bean Common Mosaic Virus		Anthracnose ³				
			Race 1	Race 15	Alpha Race 17	Delta Race 23	Race 73		
Etna	Cranberry	62	R	R	S	S	S	2.8	Public
OAC Navabi	Cranberry	61	R	R	NA	NA	R	2.5	Plovgh
OAC Racer	Cranberry	66	R	R	NA	NA	R	2.9	AAFC/U of G
Vero	Cranberry	60	NA	NA	NA	NA	NA	3.5	ADM Seedwest
OAC Candycane	Cranberry	66	R	R	NA	NA	R	2.2	AAFC/U of G
OAC Firestripe	Cranberry	68	R	R	NA	NA	R	2.3	Plovgh
Red Rider	Cranberry	61	R	R	R	R	S	3.2	SeCan
Red Hawk	Dark Red Kidney	54	R	R	R	S	R	3.2	Public
Rampart	Dark Red Kidney	52	R	R	NA	NA	NA	3.0	Trinity Genetics
Epic	Dark Red Kidney	59	R	R	NA	NA	NA	3.2	Trinity Genetics
Gallantry	Dark Red Kidney	58	NA	NA	NA	NA	R	2.6	Hensall Co-op
OAC Jasper	Dark Red Kidney	62	R	R	NA	NA	R	2.7	AAFC/U of G
Dynasty	Dark Red Kidney	63	R	S	R	S	R	3.0	Hensall Co-op
Red Dawn	Light Red Kidney	61	R	R	NA	NA	NA	2.7	Western Harvest Bean
Big Red	Light Red Kidney	62	NA	NA	NA	NA	R	2.8	Western Harvest Bean
Pink Panther	Light Red Kidney	62	R	R	R	S	R	2.9	Public
OAC Jewel	Light Red Kidney	63	R	R	NA	NA	R	2.7	AAFC/U of G
OAC Firebrand	Light Red Kidney	55	NA	NA	NA	NA	R	2.8	AAFC/U of G
OAC Inferno	Light Red Kidney	62	R	S	R	S	R	3.4	Hensall Co-op
OAC Snowshoe	White Kidney	61	R	R	NA	NA	R	3.0	Plovgh
Yeti	White Kidney	55	R	R	NA	S	R	2.8	Hensall Co-op
OAC Iceberg	White Kidney	56	NA	NA	NA	NA	R	2.9	AAFC/U of G

¹ Seed weight is 3 year average. Maturity rating is affected by planting date and area where variety is being grown.

Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

² R = Resistant, S = Susceptible, NA = Not Available

³ Anthracnose ratings- the predominant race in Ontario is Race 73. Race 17 (binary system) is equivalent to the Alpha race, race 23 (binary system) is equivalent to the Delta race.

⁴ A variety's harvestability is based on a scale of 1-5, where 1 = upright plant type, standing erect with good bottom pod height and 5 = more prostrate plant type or plants that are not erect, with poor bottom pod height.

Table 4 - 2017-2021 Average Coloured Bean Performance

Variety	Market Class	Days to Maturity ²	100 Seed	Yield (lbs/ac) ¹				
				5 Year	4 Year	3 Year	2 Year	2021
Etna	Cranberry	81	62	2069	2088	1972	1848	1976
OAC Navabi	Cranberry	82	61	2281	2291	2273	2229	2304
OAC Racer	Cranberry	82	66	2037	2043	1977	1955	2008
Vero	Cranberry	84	60	1932	1938	1896	1840	1802
OAC Candycane	Cranberry	87	66	2475	2531	2527	2508	2418
OAC Firestripe	Cranberry	87	68	2475	2531	2490	2323	2349
Red Rider	Cranberry	89	61	2300	2344	2305	2212	2217
Average (lbs/ac)				2224	2252	2206	2131	2153
Red Hawk	Dark Red Kidney	86	54	1836	1863	1809	1783	1485
Rampart	Dark Red Kidney	86	52	--	--	--	1686	1810
Epic	Dark Red Kidney	87	59	--	--	--	1891	1991
Gallantry	Dark Red Kidney	88	58	2312	2307	2314	2349	2305
OAC Jasper	Dark Red Kidney	89	62	2117	2110	2056	1956	2111
Dynasty	Dark Red Kidney	91	63	2341	2342	2285	2223	2200
Average (lbs/ac)				2151	2155	2116	1981	1983
Red Dawn	Light Red Kidney	75	61	--	--	--	1486	1598
Big Red	Light Red Kidney	82	62	2066	2102	2033	1895	2000
Pink Panther	Light Red Kidney	83	62	1922	1928	1799	1655	2083
OAC Jewel	Light Red Kidney	91	63	2189	2254	2215	2180	1909
OAC Firebrand	Light Red Kidney	91	55	--	2506	2484	2469	2573
OAC Inferno	Light Red Kidney	94	62	2511	2572	2473	2524	2519
Average (lbs/ac)				2172	2272	2201	2035	2114
OAC Snowshoe	White Kidney	91	61	2463	2473	2378	2371	2367
Yeti	White Kidney	92	55	2128	2190	2134	2182	2065
OAC Iceberg	White Kidney	94	56	--	2127	1982	1905	2160
Average (lbs/ac)				2295	2263	2165	2152	2197
LSD (0.05)⁴				97	108	120	145	213

¹ To convert lbs/acre to t/ha divide by 893.

² Days to Maturity is 3 year average. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³Seed Weight is 3 year average. To convert 100 Seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different. Yields that differ by an amount less or equal to the LSD should be considered the same.

Testing Locations					
St Thomas	2021	2020	2019	2018	2017
Exeter	2021	2020	2019	2018	--
Elora	--	2020	2019	2018	2017
Woodstock	2021	2020	2019	2018	2017

Table 4a - St Thomas Station Report: 2017-2021 Coloured Bean Performance Trial

Variety	Market Class	Days to Maturity St Thomas ²	100 Seed Weight ³ (g)	Yield (lbs/ac) ¹					
				St Thomas					3 Year All Locations
				5 Year	4 Year	3 Year	2 Year	2021	
Etna	Cranberry	74	62	2470	2344	1931	1738	1437	1972
OAC Navabi	Cranberry	76	61	2872	2872	2706	2582	2048	2273
OAC Racer	Cranberry	78	66	2272	2078	1871	1736	1356	1977
Vero	Cranberry	80	60	2126	2009	1768	1715	1129	1896
OAC Firestripe	Cranberry	82	68	2900	2904	2771	2650	2115	2490
OAC Candycane	Cranberry	82	66	3051	3104	2933	2800	2189	2527
Red Rider	Cranberry	86	61	2705	2673	2488	2403	1841	2305
Average (lbs/ac)				2628	2569	2352	2232	1731	2206
Red Hawk	Dark Red Kidney	80	54	2157	2136	1928	1982	1137	1809
Gallantry	Dark Red Kidney	82	58	2838	2760	2592	2584	1945	2314
OAC Jasper	Dark Red Kidney	84	62	2533	2457	2366	2201	1920	2056
Rampart	Dark Red Kidney	85	52	--	--	--	1951	1502	--
Dynasty	Dark Red Kidney	86	63	2770	2632	2488	2484	1932	2285
Epic	Dark Red Kidney	86	59	--	--	--	2237	1810	--
Average (lbs/ac)				2574	2496	2344	2240	1708	2116
Red Dawn	Light Red Kidney	75	61	--	--	--	1627	1193	--
Pink Panther	Light Red Kidney	76	62	2137	2017	1701	1581	1521	1799
Big Red	Light Red Kidney	76	62	2573	2529	2081	1752	1363	2033
OAC Jewel	Light Red Kidney	87	63	2592	2611	2599	2563	1934	2215
OAC Firebrand	Light Red Kidney	89	55	--	2846	2700	2879	2839	2484
OAC Inferno	Light Red Kidney	92	62	2983	2995	2780	2841	2484	2473
Average (lbs/ac)				2571	2599	2372	2207	1889	2201
OAC Snowshoe	White Kidney	87	61	2972	2898	2696	2702	2125	2378
Yeti	White Kidney	88	55	2525	2535	2478	2603	1806	2134
OAC Iceberg	White Kidney	90	56	--	2641	2483	2594	2519	1982
Average (lbs/ac)				2749	2692	2552	2633	2150	2165
LSD (0.05)⁴				231	264	273	324	405	120

¹ To convert lbs/acre to t/ha divide by 893.

² Days to Maturity is 3 year average for St Thomas Station. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ To convert 100 Seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different. Yields that differ by an amount less or equal to the LSD should be considered the same.

Table 4b - Exeter Station Report: 2018-2021 Coloured Bean Performance Trial

Variety	Market Class	Days to Maturity Exeter ²	100 Seed Weight ³ (g)	Yield (lbs/ac) ¹				
				Exeter				3 Year All Locations
				4 Year	3 Year	2 Year	2021	
OAC Navabi	Cranberry	87	61	1804	2186	2332	2713	2273
OAC Racer	Cranberry	87	66	1900	2128	2346	2858	1977
Etna	Cranberry	87	62	1721	2021	2225	2586	1972
Vero	Cranberry	89	60	1910	2227	2430	2866	1896
OAC Firestripe	Cranberry	92	68	2022	2364	2295	2722	2490
OAC Candycane	Cranberry	92	66	2056	2369	2568	2670	2527
Red Rider	Cranberry	92	61	2035	2392	2463	2800	2305
Average (lbs/ac)				1921	2241	2380	2745	2206
Epic	Dark Red Kidney	87	59	--	--	1874	2294	--
Red Hawk	Dark Red Kidney	88	54	1542	1758	1759	1750	1809
Rampart	Dark Red Kidney	88	52	--	--	1644	2242	--
Gallantry	Dark Red Kidney	90	58	1733	2094	2301	2475	2314
OAC Jasper	Dark Red Kidney	91	62	1857	2082	2178	2653	2056
Dynasty	Dark Red Kidney	92	63	1962	2175	2266	2543	2285
Average (lbs/ac)				1774	2027	2004	2326	2116
Red Dawn	Light Red Kidney	80	61	--	--	1686	2245	--
Big Red	Light Red Kidney	84	62	1795	2143	2290	2738	2033
Pink Panther	Light Red Kidney	86	62	1666	1913	1956	2716	1799
OAC Firebrand	Light Red Kidney	92	55	2174	2537	2554	2687	2484
OAC Jewel	Light Red Kidney	93	63	1828	2071	2049	2256	2215
OAC Inferno	Light Red Kidney	94	62	2272	2537	2667	2758	2473
Average (lbs/ac)				1947	2240	2200	2566	2201
OAC Snowshoe	White Kidney	91	61	2043	2260	2418	2688	2378
Yeti	White Kidney	92	55	1928	2204	2380	2605	2134
OAC Iceberg	White Kidney	95	56	1683	1823	1631	2144	1982
Average (lbs/ac)				1885	2096	2143	2479	2165
LSD (0.05)⁴				169	208	272	344	120

¹ To convert lbs/acre to t/ha divide by 893.

² Days to Maturity is 3 year average for Exeter Station. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ To convert 100 Seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different. Yields that differ by an amount less or equal to the LSD should be considered the same.

Table 4c - Elora Station Report: 2016-2020⁵ Coloured Bean Performance Trial

Variety	Market Class	Days to Maturity Elora ²	100 Seed Weight ³ (g)	Yield (lbs/ac) ¹					3 Year All Locations
				Elora					
				5 Year	4 Year	3 Year	2 Year	2020	
Etna	Cranberry	81	65	1717	1739	1782	1927	1513	2116
Amaranto	Cranberry	81	65	--	--	1602	1776	1510	1978
OAC Racer	Cranberry	82	65	1669	1701	1663	1790	1729	2052
OAC Navabi	Cranberry	83	63	--	2154	2086	2180	1966	2288
Vero	Cranberry	85	63	--	1625	1550	1695	1475	1972
OAC Firestripe	Cranberry	88	69	--	2142	2103	2306	2082	2577
OAC Candycane	Cranberry	89	68	2089	2148	2130	2275	2366	2559
Red Rider	Cranberry	91	62	1924	1947	1883	2037	1657	2375
Average (lbs/ac)				1850	1922	1850	1998	1787	2240
Rampart	Dark Red Kidney	81	50	--	--	--	--	1379	--
Epic	Dark Red Kidney	84	57	--	--	--	--	1732	--
Red Hawk	Dark Red Kidney	86	57	1670	1701	1715	1861	1761	1958
Gallantry	Dark Red Kidney	89	58	2002	2050	1988	2166	2150	2308
Dynasty	Dark Red Kidney	92	65	1944	2022	1951	2101	1855	2377
OAC Jasper	Dark Red Kidney	92	66	--	1922	1784	1797	1568	2110
Average (lbs/ac)				1872	1924	1859	1981	1741	2188
Red Dawn	Light Red Kidney	72	59	--	--	--	--	1110	--
Big Red	Light Red Kidney	84	63	1572	1568	1507	1683	1450	2127
Pink Panther	Light Red Kidney	84	64	1681	1705	1659	1657	1217	1890
OAC Jewel	Light Red Kidney	92	64	1992	2081	2119	2176	2199	2340
OAC Firebrand	Light Red Kidney	93	58	--	--	2197	2293	2027	2489
OAC Inferno	Light Red Kidney	95	66	2103	2227	2150	2137	2023	2585
Average (lbs/ac)				1837	1895	1926	1989	1671	2286
Yeti	White Kidney	93	58	1650	1648	1606	1710	1652	2221
OAC Snowshoe	White Kidney	93	63	--	2148	2041	2167	1942	2500
OAC Iceberg	White Kidney	96	60	--	--	1746	1768	1441	2118
Average (lbs/ac)				1650	1898	1798	1882	1679	2280
LSD (0.05)⁴				152	171	197	267	275	125

¹ To convert lbs/acre to t/ha divide by 893.

² Days to Maturity is 3 year average for Elora Station. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ To convert 100 Seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different. Yields that differ by an amount less or equal to the LSD should be considered the same.

⁵No 2021 data available for Elora station.

Table 4d - Woodstock Station Report: 2017-2021 Coloured Bean Performance Trial

Variety	Market Class	Days to Maturity Woodstock ²	100 Seed Weight ³ (g)	Yield (lbs/ac) ¹					
				Woodstock					3 Year All Locations
				5 Year	4 Year	3 Year	2 Year	2021	
Etna	Cranberry	82	62	2210	2429	1994	1748	1906	1972
OAC Racer	Cranberry	83	66	2179	2436	2057	1897	1809	1977
OAC Navabi	Cranberry	84	61	2172	2350	1988	1903	2151	2273
Vero	Cranberry	84	60	2000	2187	1826	1558	1412	1896
OAC Candycane	Cranberry	87	66	2495	2734	2448	2229	2394	2527
OAC Firestripe	Cranberry	87	68	2680	2989	2458	2144	2211	2490
Red Rider	Cranberry	89	61	2388	2668	2215	2048	2010	2305
Average (lbs/ac)				2303	2542	2141	1932	1985	2206
Rampart	Dark Red Kidney	87	52	--	--	--	1617	1684	--
Red Hawk	Dark Red Kidney	88	54	1858	2022	1707	1620	1567	1809
Epic	Dark Red Kidney	89	59	--	--	--	1640	1869	--
OAC Jasper	Dark Red Kidney	90	62	2063	2260	1894	1684	1759	2056
Gallantry	Dark Red Kidney	91	58	2458	2668	2354	2259	2493	2314
Dynasty	Dark Red Kidney	92	63	2469	2723	2314	2101	2124	2285
Average (lbs/ac)				2212	2418	2067	1820	1916	2116
Red Dawn	Light Red Kidney	73	61	--	--	--	1333	1357	--
Big Red	Light Red Kidney	82	62	2176	2428	2107	1865	1900	2033
Pink Panther	Light Red Kidney	85	62	2085	2304	1879	1648	2012	1799
OAC Jewel	Light Red Kidney	92	63	2159	2424	2002	1918	1537	2215
OAC Firebrand	Light Red Kidney	92	55	--	2728	2342	2197	2194	2484
OAC Inferno	Light Red Kidney	95	62	2460	2765	2326	2314	2316	2473
Average (lbs/ac)				2220	2530	2131	1879	1886	2201
OAC Snowshoe	White Kidney	94	61	2541	2803	2318	2207	2288	2378
Yeti	White Kidney	94	55	2273	2545	2004	1828	1784	2134
OAC Iceberg	White Kidney	95	56	--	2341	1784	1720	1818	1982
Average (lbs/ac)				2407	2563	2035	1918	1963	2165
LSD (0.05)⁴				185	218	215	258	390	120

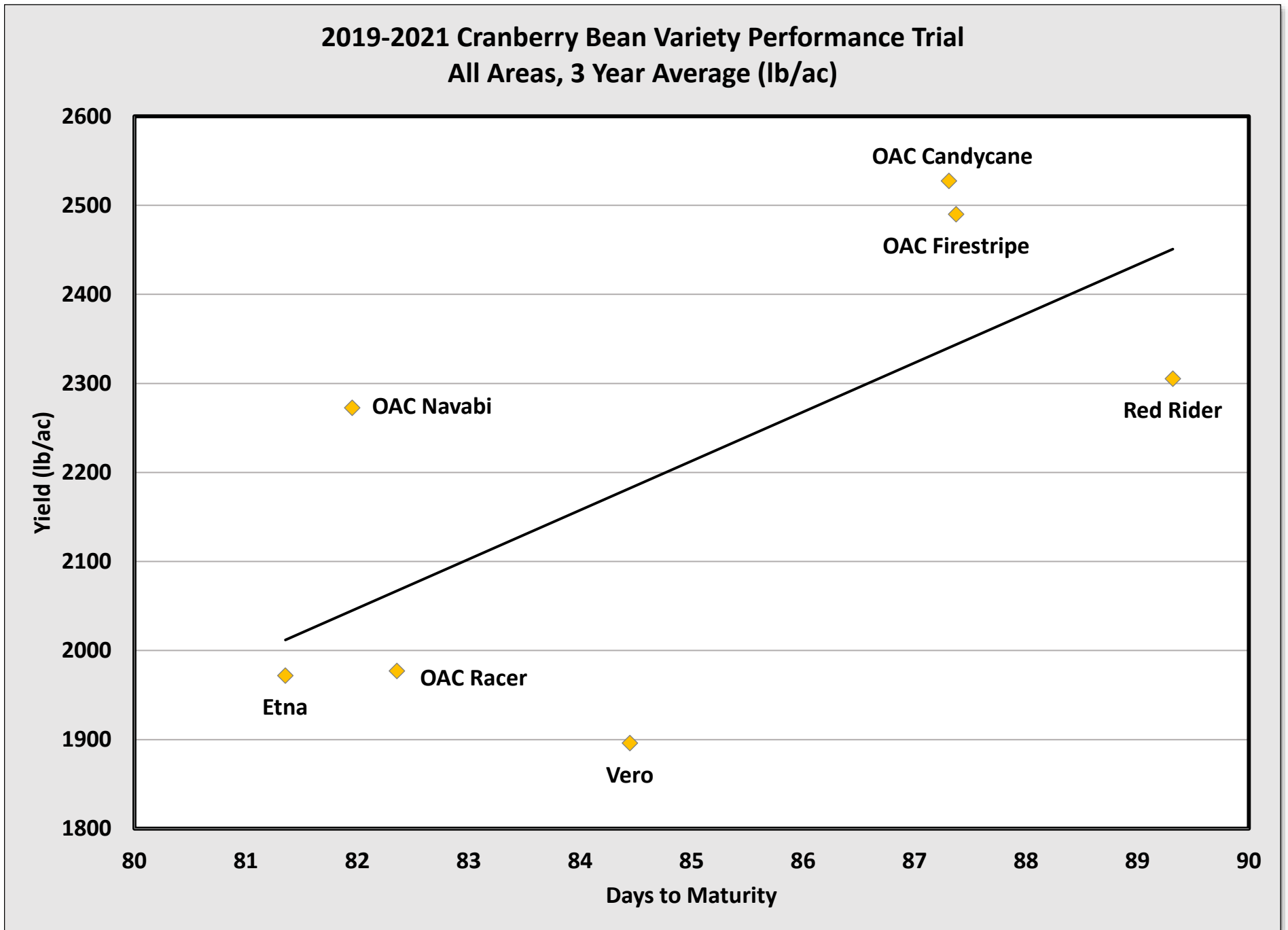
¹ To convert lbs/acre to t/ha divide by 893.

² Days to Maturity is 3 year average for Woodstock Station. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ To convert 100 Seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different. Yields that differ by an amount less or equal to the LSD should be considered the same.

Graph 4e: Cranberry Bean



Graph 4f: Kidney Bean

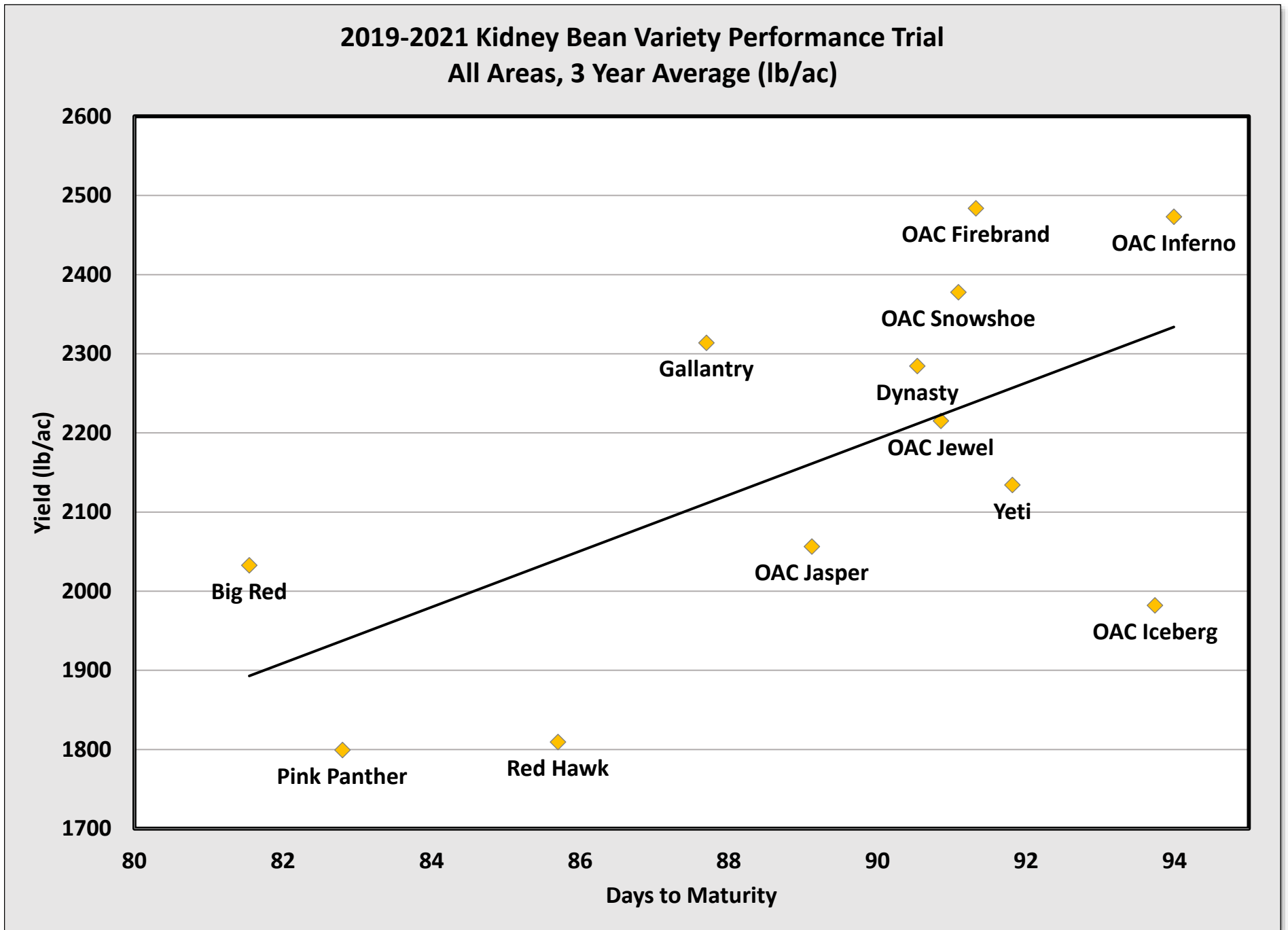


Table 5 - 2017-2021 Coloured Minor Bean Variety Performance Trial

Variety	Market Class	Days to Maturity ²	Yield (lbs/ac) ¹																			
			All Locations				St Thomas					Exeter					Winchester					
			5 Year	4 Year	3 Year	2 Year	5 Year	4 Year	3 Year	2 Year	2021	5 Year	4 Year	3 Year	2 Year	2021	5 Year	4 Year	3 Year	2 Year	2021	
La Paz	Pinto	92	3571	3497	3587	3546	3433	3327	3449	3395	2853	3325	3187	3255	3031	2978	3955	3977	4058	4212	4826	
Black Tails	Black	93	--	--	3686	3648	--	--	3744	3931	3688	--	--	3239	3132	2904	--	--	4076	3881	4265	
Zenith	Black	93	3630	3663	3775	3844	3812	3930	4026	4146	3541	3351	3368	3335	3412	3229	3726	3692	3963	3974	4926	
OAC Rosito	Small Red	93	3340	3267	3384	3184	3555	3527	3660	3554	2996	3087	2910	2693	2490	2371	3378	3365	3801	3508	4077	
Blackbeard	Black	94	--	3626	3679	3665	--	3716	3899	3953	3941	--	3545	3428	3424	3335	--	3618	3709	3618	4401	
Viper	Small Red	94	3767	3769	3834	3803	3944	3930	3973	4015	3588	3588	3553	3520	3383	3137	3771	3823	4011	4010	4569	
Zorro	Black	94	3611	3585	3698	3611	3797	3777	3864	3859	3356	3350	3298	3226	3133	2943	3684	3682	4005	3841	4344	
OAC Vortex	Black	95	3733	3747	3809	3891	3881	3879	3936	4224	4486	3449	3430	3369	3478	3288	3870	3933	4124	3970	4714	
Spectre	Black	98	--	3728	3720	3725	--	4022	3992	4056	3430	--	3470	3273	3184	2882	--	3693	3895	3937	4368	
Average Yield (lbs/ac)¹			3609	3610	3686	3657	3737	3764	3838	3904	3542	3358	3345	3260	3185	3008	3731	3723	3960	3884	4499	
LSD (0.05)³			147	162	166	218	292	346	348	462	656	221	222	263	345	339	248	255	242	309	433	

¹ To convert lbs/acre to t/ha divide by 893.

² Maturity is 3 year average. Maturity rating is affected by planting date and area where variety is being grown. Varieties are rated as mature when 95% of the pods are ripe. Normally, 3-10 additional drying days are needed before the crop is dry enough for combining.

³ LSD (0.05) - the LSD is a measure of variability within the trial. There is a ninety five percent probability that yields that differ by an amount greater than the LSD are different. Yields that differ by an amount less or equal to the LSD should be considered the same.

Testing Locations					
St Thomas	2021	2020	2019	2018	2017
Exeter	2021	2020	2019	2018	2017
Winchester	2021	2020	2019	2018	2017

Graph 5a: Coloured Minor Bean

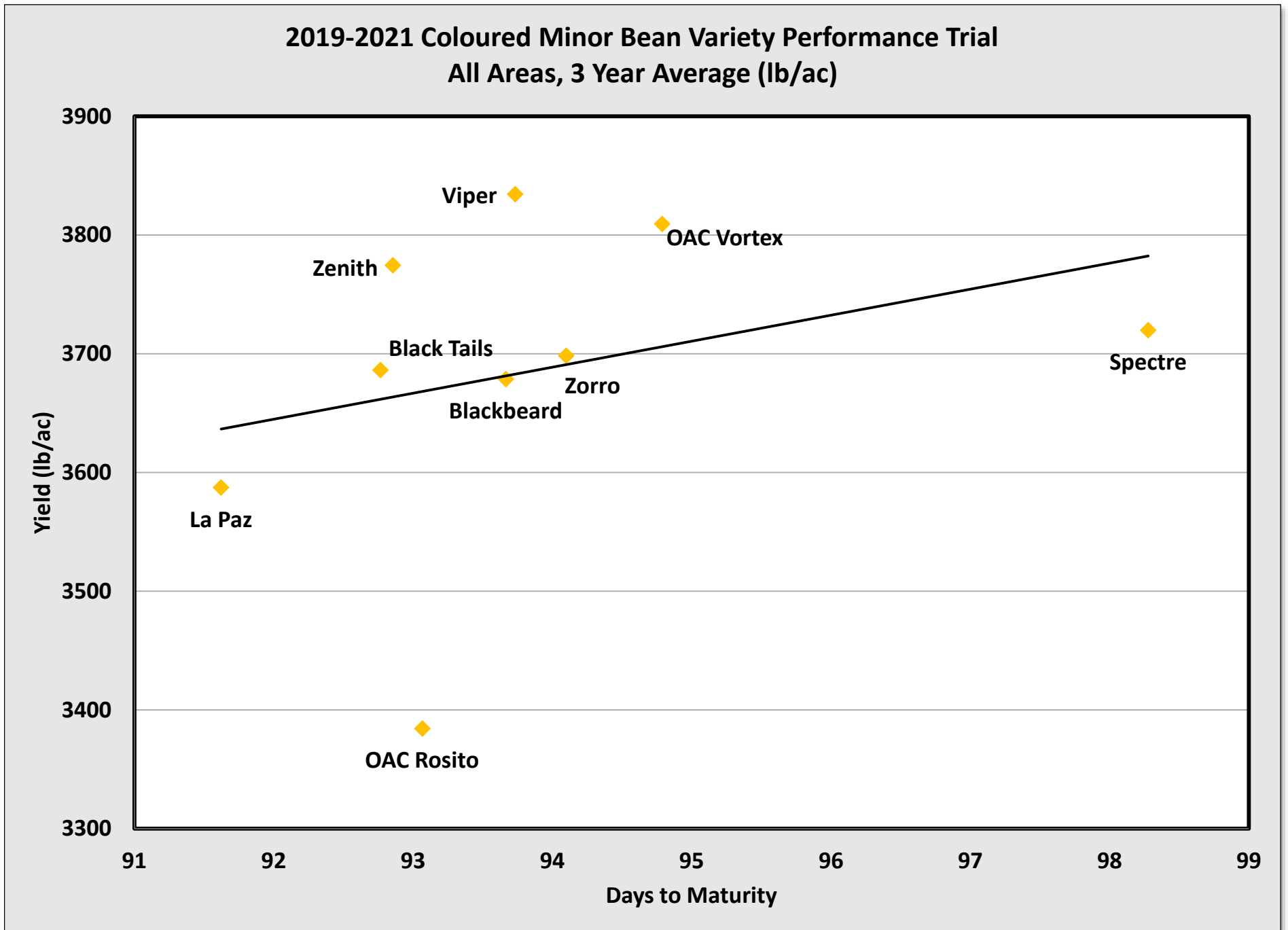


Table 6 - 2019-2021 Coloured Minor Bean Characteristics and Distributors

Variety	Market Class	100 Seed Weight ³ (g)	Disease Reaction ¹					Common Blight	Harvestability ⁴	Distributor
			Bean Common Mosaic Virus		Anthracnose ²					
			Race		Race					
			1	15	17	23	73			
La Paz	Pinto	40.0	NA	NA	NA	NA	S	S	2.9	ADM Seedwest
Black Tails	Black	23.3	NA	NA	NA	NA	NA	S	1.9	Western Harvest Bean
Zenith	Black	25.0	NA	NA	NA	NA	R	S	1.7	Hensall Co-op
OAC Rosito	Small Red	24.3	R	R	NA	NA	S	S	2.0	Hensall Co-op
Blackbeard	Black	24.6	NA	NA	NA	NA	NA	NA	1.7	Western Harvest Bean
Viper	Small Red	30.9	NA	NA	NA	NA	S	S	2.6	ADM Seedwest
Zorro	Black	24.6	R	R	R	R	S	S	2.0	Hensall Co-op
OAC Vortex	Black	24.2	R	R	NA	NA	S	R	2.4	AAFC/U of G
Spectre	Black	25.5	NA	NA	NA	NA	NA	NA	1.9	Western Harvest Bean

¹ R = Resistant, S = Susceptible, NA = Not Available

² Anthracnose ratings, the predominant race found now in Ontario is Race 73. Race 17 (binary system) is equivalent to the Alpha race, race 23 (binary system) is equivalent to the Delta race.

³ To convert 100 seed weight (g) to seeds per pound divide 45,400 by seed weight. Example: 45,400 / 63 gm = 720 seeds/lb

⁴ A variety's harvestability is based on a scale of 1-5, where 1 = upright plant type, standing erect with good bottom pod height and 5 = more prostrate plant type or plants that are not erect, with poor bottom pod height.

Table 7. Addresses of Distributors for Edible Bean Varieties

<p>ADM Seedwest 4666 Faries Parkway Decatur, ID 62526 800-637-5843 x4707 www.adm.com/products-services/food/edible-beans/seedwest</p>	<p>Elliott Grain Ltd. 21964 Fairview Road, RR3 Thorndale, ON N0M 2P0 519-461-1545</p>	<p>Ferguson Bros. of St. Thomas Ltd. 43850 Ferguson Line, RR #6 St. Thomas, ON N5P 3T1 519-631-3463 www.fergusonbros.com</p>
<p>Hensall Co-op P.O. Box 219 Hensall, ON N0M 1X0 1-800-265-5190 www.hdc.on.ca</p>	<p>Plovgh, Inc. P.O. Box 295 Viroqua, WI 54665 1-877-567-1678 www.plovgh.com</p>	<p>ProVita Inc. P.O. Box #628 Kuna, ID 83634 (208) 463-7624</p>
<p>R.T. Bolton and Sons 43234 Winthrop Road, RR#1 Dublin, ON N0K 1E0 (519) 525-6430</p>	<p>SeCan Association 400-300 Terry Fox Drive Kanata, ON K2K 0E3 (613) 592-8600 www.secan.com</p>	<p>The Andersons Canada Ltd. 2 Hyland Drive Blenheim, ON N0P 1A0 (519) 676-5411 www.AndersonsCanada.com</p>
<p>Treasure Valley Seed Co. 4633 E. River Road Freeland, MI 48623 www.tvseed.com</p>	<p>Western Harvest Bean 301 South Railway St Morden, MB R6M 1G7</p>	