

BPC

PROGRESS REPORT
**FORAGE CROP
INVESTIGATIONS**

1959

FORAGE MANAGEMENT



Field Husbandry Department
Ontario Agricultural College
Guelph

FORAGE PROGRESS REPORT 1959

The data from all O.A.C. trials are compiled in this report for use of members of the Field Husbandry Department and those associated with the testing programs. Data from some co-operative trials at Kemptville and Ridgetown are included in summary form so that all information will be collected together for interpretive purposes.

This report is not complete but does contain the main data collected from current projects and those compiled in 1959.

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(Year refers to year trial was seeded, and number in brackets is experiment number)

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DEPARTURES OF 1959 GROWING SEASON

WEATHER RECORDS FROM NORMAL

<u>TEMPERATURE</u>	<u>APRIL</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUGUST</u>	<u>SEPTEMBER</u>
Harrow Max.	-1.3	-0.3	-1.3	-3.5	-0.5	-1.2
Min.	1.6	2.2	0.9	0.9	6.9	3.4
Ridgetown Max.	4.0	3.7	1.3	0.5	3.6	3.3
Min.	2.4	4.6	1.1	0.4	5.6	3.4
Guelph Max.	2.6	2.6	1.1	1.8	4.1	3.3
Min.	1.2	3.6	1.6	0.7	6.6	4.6
Kemptville Max.	3.4	3.2	-0.1	1.4	3.3	3.3
Min.	1.2	1.2	1.5	0.6	5.0	3.2
Ottawa Max.	2.7	3.6	0.7	3.0	5.6	3.3
Min.	0.8	1.0	3.1	1.0	6.1	3.6
New Liskeard Max.	-5.1	-1.0	-3.1	0.0	3.1	1.7
Min.	-11.1	-15.4	-2.2	-1.5	6.1	3.5
Kapuskasing Max.	-0.9	3.4	2.4	3.9	1.7	1.2
Min.	1.9	4.1	1.9	4.2	2.2	3.0
Gore Bay Max.	-0.1	-	-8	0.4	3.0	3.9
Min.	-1.0	2.0	1.2	-0.7	6.9	4.0
Fort Frances Max.	+1.1	0.4	4.3	2.6	3.6	0.0
Min.	-1.2	-0.8	1.7	3.2	2.0	0.0

RAINFALL

Harrow	1.8	0.7	+1.7	1.2	2.1	0.2
Ridgetown	0.9	0.9	-2.6	-0.2	-0.2	-0.5
Guelph	0.2	-0.6	-1.9	0.0	-0.7	-0.2
Kemptville	-1.2	-2.6	-0.6	1.5	2.3	0.2
Ottawa	-1.4	-1.7	-1.9	0.0	1.2	1.0
New Liskeard	-	0.1	-0.8	-	1.2	-
Kapuskasing	-	0.1	-0.8	-	1.2	-
Gore Bay	0.9	-0.4	-0.8	-0.7	1.7	0.6
Fort Francis	-1.7	2.3	-1.6	1.5	1.0	0.1

1959 GROWING SEASON WEATHER RECORDS

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<u>TEMPERATURE</u>	<u>APRIL</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUGUST</u>	<u>SEPTEMBER</u>
Harrow Max.	54.8	68.1	77.6	80.3	81.4	73.5
Min.	37.8	49.6	58.6	63.1	66.9	57.8
Ridgetown Max.	56.7	68.5	78.0	82.4	83.7	75.4
Min.	37.9	50.4	57.4	61.5	65.3	57.3
Guelph Max.	53.3	66.2	75.2	80.7	81.4	73.2
Min.	33.6	46.5	54.2	57.6	62.2	53.6
Kemptville Max.	54.9	69.7	76.4	82.8	82.1	73.4
Min.	33.0	45.3	55.2	58.6	60.6	51.3
Ottawa Max.	52.5	68.9	75.9	82.8	82.8	72.1
Min.	32.0	44.2	56.1	58.5	61.1	51.5
New Liskeard Max.	40.8	61.2	69.3	76.8	77.9	66.6
Min.	13.2	21.0	45.3	51.6	56.8	46.6
Kapuskasing Max.	41.3	61.0	71.8	78.4	73.0	62.4
Min.	21.3	38.0	47.0	55.4	51.8	44.6
Gore Bay Max.	47.7	-	-	78.1	78.4	68.2
Min.	26.3	40.5	49.6	54.0	60.5	51.4
Fort Frances Max.	49.1	62.7	75.8	80.2	77.9	64.6
Min.	27.2	46.4	52.8	56.4	56.1	45.3

RAINFALL

Harrow	4.3	3.1	1.3	3.5	4.3	2.7
Ridgetown	3.9	4.0	0.3	2.7	2.2	2.4
Guelph	2.9	2.5	1.2	3.5	2.2	2.8
Kemptville	1.4	0.7	2.0	5.0	4.9	3.4
Ottawa	1.2	1.1	1.5	3.5	4.2	4.1
New Liskeard	N.M.	2.3	2.5	N.M.	4.1	N.M.
Kapuskasing	2.2	4.3	0.9	2.8	4.7	3.3
Gore Bay	3.2	1.9	1.7	1.3	3.8	3.7
Fort Frances	0.4	4.9	2.3	5.1	4.9	3.2

NORMAL GROWING SEASON WEATHER RECORDS FOR CERTAIN
ONTARIO STATIONS

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<u>TEMPERATURE</u>		<u>APRIL</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUGUST</u>	<u>SEPTEMBER</u>	<u>OCTOBER</u>
Harrow Max.		56.1	68.4	78.9	83.8	81.9	74.7	62.5
	Min.	36.2	46.8	57.7	62.2	60.0	54.4	43.5
Ridgetown Max.		52.7	64.8	76.7	81.9	80.1	72.1	60.2
	Min.	35.5	45.8	56.3	61.1	59.7	53.9	43.6
Guelph Max.		50.7	63.6	74.1	78.9	77.3	69.9	57.3
	Min.	32.4	42.9	52.6	56.9	55.6	49.0	38.7
Kemptville Max.		51.5	66.5	76.5	81.4	78.8	70.1	57.1
	Min.	31.8	44.1	53.7	58.0	55.6	48.1	36.8
Ottawa Max.		49.8	65.3	75.2	79.8	77.8	68.8	55.4
	Min.	31.2	43.2	53.0	57.5	55.0	47.9	36.8
New Liskeard Max.		45.9	62.2	72.4	76.8	74.8	64.9	52.5
	Min.	24.3	36.4	47.5	53.1	50.7	43.1	33.8
Kapuskasing Max.		42.2	57.6	69.4	74.5	71.3	61.2	47.9
	Min.	19.4	33.9	45.1	51.2	49.6	41.6	31.9
Gore Bay Max.		47.8	59.3	71.3	77.7	75.4	64.3	54.7
	Min.	27.3	38.5	48.4	54.7	53.6	47.4	37.3
Fort Frances Max.		48.0	62.3	71.5	77.6	74.3	64.0	52.1
	Min.	28.4	41.2	51.1	53.2	54.1	45.3	35.0

RAINFALL

Harrow	2.5	2.4	3.0	2.3	2.2	2.5	1.8
Ridgetown	3.0	3.1	2.9	2.9	2.4	2.9	2.6
Guelph	2.7	3.1	3.1	3.5	2.9	3.0	2.4
Kemptville	2.6	3.3	2.6	3.5	2.6	3.2	2.8
Ottawa	2.6	2.8	3.4	3.5	3.0	3.1	2.7
New Liskeard	1.7	2.2	3.3	3.6	2.9	3.3	2.3
Kapuskasing	1.7	2.3	2.8	3.3	3.2	3.2	2.1
Gore Bay	2.3	2.3	2.5	2.0	2.1	3.1	2.8
Fort Frances	2.1	2.6	3.9	3.6	3.9	3.3	2.1

HAY-PASTURE MIXTURES 1956 - KEMPTVILLE

	1957			1958				2 year mean 1957-58
	Hay Jun.20	Amth. Aug.7	Total	Hay Jun.17	Aftermath			
					Jul.30	Sep.9	Total	
Vernal + S-48 + Can. Brome + Lyon	5429	1508	6937	4090	2319	1420	3739	7829
	5251	1137	6388	4882	1849	1405	3254	8136
	5394	1063	6457	6411	1595	1306	2901	9312
Ver.+ Las.+ Ly. + Cl. + Fr. + Cl. + Fr. + Ly.	5460	924	6384	6352	1433	1067	2500	8852
	5198	1129	6327	5052	1667	1232	2899	7951
	5586	1025	6611	5516	1524	1126	2650	8166
Red Cl. + Tim. Alf. + Red + Tim. A + R + T + Or. + Br.	5321	1160	6481	4737	-	809	809	5546
	5646	1404	7050	4333	2309	1525	3834	8167
	5390	1208	6598	5131	1965	1359	3324	8455

	1959				1957-1959 Average			
	Hay Jun.17	-	Aftermath Sept.9	Total	Season Total	Hay	After.	Total
Vernal + S-48 + Can. Brome + Lyon	3700	2333	2324	4657	8357	4406	3301	7707
	4133	2308	2180	4488	8621	4755	2960	7715
	4237	2199	2352	4551	8788	5347	2838	8185
Ver.+ Las.+ Ly. + Cl. + Fr. + Cl. + Fr. + Ly.	4427	2042	2306	4348	8775	5413	2591	8004
	4280	2055	2315	4370	8650	4843	2799	7642
	4542	1910	2542	4452	8994	5215	2709	7924
Red Cl. + Tim. Alf. + Red + Tim. A + R + T + Or. + Br.	3058	-	1695	1695	4753	4372	1221	5593
	4006	2795	2645	5440	9446	4662	3559	8221
	4459	2453	2302	4755	9214	4993	3096	8089

HAY-PASTURE MIXTURES 1955, NEW LISKEARD (308). LBS. D.M./ACRE

	Variety	Lbs./acre in mixture number							
		1	2	3	4	5	6	7	8
Alfalfa	Vernal	7	4	5	7	7		7	7
Red Clover D	Lasalle	2	2	2	3			3	3
S	Leon		2	2		3			
Alsike	Alon	1	1	1					
B. Trefoil	Empire						6		
Timothy	Medon	5	5	4	2	2	5	5	
Orchard	Oron				3	3			
Brome	Common	7	7	4	5	5	5		10
Meadow Fescue	Mefon			3					

Mixture	July 25	1956 Aug. 31	Total	1958 July 18
A + R + Al + T + B	4383	1870	6253	3952
A + R* + Al + T + B	4529	1609	6138	3551
A + R* + Al + T + B + F	4863	1830	6693	3904
A + R + T + B + O	4727	1796	6523	2882
A + R** + T + B + O	4786	1633	6419	3287
Empire + T + B	4353	969	5322	4323
A + R + T	4478	1624	6102	3779
A + R + B	4306	1624	6930	3878

* 2 lbs. double cut + 2 lbs. single cut

** 3 lbs. single cut

CO-OPERATIVE HAY-PASTURE FARM PLANTINGS (BROME), 1956

Notes were taken on bromegrass plots at all five locations in 1959.

The Vernal-Canadian brome plot was reported to have the highest yield in two locations and the second from the highest yield in the other three locations. The Vernal-Canadian brome-red clover plot was reported to have the highest yield in one location, and the Lyon brome-Ladino-Vernal plot gave highest yield in two locations. The Vernal-Lasalle-Climax plot was reported as lowest yielding of the plots at each of

Lyon was reported as being coarser than Canadian brome. Lyon and Canadian had equal vigor in two cases while Lyon was reported having superior vigor in one case.

Canadian is reported to be slightly earlier in maturity than Lyon.

The stand of Lyon was better than that of Canadian at one location, equal to it at one location, and below it at one location.

RELATIVE YIELD STANDING AT EACH LOCATION

Mixture Number	Components	Middlesex	Brant	Victoria	Huron	Renfrew
1	Vernal Ladino Lyon	1	2	4	4	1
2	Vernal Canadian brome	2	1	2	2	1
3	Vernal Lasalle Lyon	3	4	3	4	3
4	Vernal Lasalle Canadian brome	4	3	1	3	2
5	Vernal Lasalle Climax	5	-	5	1	2

PROVINCIAL HAY-PASTURE MIXTURES, 1957

Three trials were harvested in 1959 - one series for well-drained soil at O.A.C. and one at the Arthur high school, and one series for fair-drainage at the Kaine farm.

The results are in the minutes of the Forage Crop Sub-Committee, summarized with the other locations in Ontario.

BIRDSFOOT TREFOIL VARIETY MIXTURES FOR EARLY HAY, 1956

Pounds of dry matter, 1959

	Total	Yield	Hay Jun.17	Aftermath			Season Total	Average 1957-1958-1959
	1957	1958		Aug.10	Oct.14	Total		
Viking	5957	6752	3111	2679	838	3517	6628	6445
Viking + Climax + S-48	7129 6543	7737 7534	4159 4247	2653 2760	977 1193	3630 3953	7789 8200	7551 7425
Viking + C.brome + Lyon	6415 6809	7761 7703	4438 3676	2423 2561	896 882	3319 3443	7757 7119	7311 7210
Viking + Frode	4608	5865	4154	2575	744	3319	7473	5982
Empire (G701)	4372	5159	3850	2306	142	2448	6298	5276
Empire + Climax	6035	6380	5144	2011	431	2442	7586	6667
G701 + Climax	5529	6260	5538	2075	509	2584	8122	6637
Lasalle + Climax	8105	5746	4138	755	-	755	4893	6248

BIRDSFOOT TREFOIL VARIETY MIXTURES FOR EARLY HAY, 1957

Pounds of legume component, 1959

	Total	Yield	Hay	Aftermath			Season Total	Average 1957-1958-1959
	1957	1958		Cut 1	Cut 2	Total		
Viking	3924	6039	2755	2343	743	3091	5846	4603
Viking + Climax + S-48	2356 2738	4262 4792	2013 2699	2307 2597	757 894	2481 2864	5077 6190	3893 4573
Viking + C.brome + Lyon	2030 2369	4332 4138	2115 2240	1769 1900	696 598	2349 2160	4580 4738	3647 3781
Viking + Frode	1606	2616	3010	1926	451	1689	5387	3203
Empire (G701)	2952	4436	3344	1894	110	1727	5348	4245
Empire + Climax	1507	3303	2962	1684	242	1567	4886	3232
G701 + Climax	1654	3293	3381	1740	297	1614	5418	3455
Lasalle + Climax	4564	1611	376	85	-	915	461	2212

BIRDSFOOT TREFOIL VARIETY MIXTURES FOR LATE HAY - GUELPH, 1957

Yield in pounds of dry matter, 1959

	Total Yield 1957	Total Yield 1958	Hay July 6	Aftermath August 14	Total Yield 1959	3-Year Average 1957-1958-1959
Empire	5574	4931	4639	1512	6151	5552
Empire + Climax	6631	6473	6159	1295	7454	6853
+ Essex	6223	6131	6014	1340	7354	6569
+ S-48	5729	5988	5653	1434	7087	6268
Empire + C.brome	5258	5297	5671	1263	6934	5830
+ Lyon	6997	6558	6268	1636	7904	7153
Viking + Climax	7823	7640	5799	2306	8105	7856
Vernal + Climax	10978	10118	5486	996	6482	9193
Lasalle + Climax	9677	8079	5788	229	6017	7924

Legume component in pounds per acre, 1959

	Total Yield 1957	Total Yield 1958	Hay July 6	Aftermath August 14	Season Total	3-year Total	3-year Average 1957-1958-1959
Empire	4167	3956	4344	1186	5530	13653	4551
Empire + Climax	2376	4137	2790	950	3740	10253	3418
+ Essex	2447	3432	3519	1026	4545	10424	3475
+ S-48	2346	3591	3622	1109	4731	10668	3556
Empire + C.brome	2263	3698	2740	876	3616	9577	3192
+ Lyon	2247	3780	3708	1137	4845	10872	3624
Viking + Climax	3482	5112	1723	1873	3596	12190	4063
Vernal + Climax	6449	6001	412	327	739	3189	4396
Lasalle + Climax	4820	4316	360	11	371	9507	3169

MIXTURES SEDED ON COLLEGE FARMS, 1959

1. O.A.C. D2 Dairy pasture (8 acres).
Rec. long-term pasture mix. #9. So we have a pasture
of this mixture on farm. Seed 2 acres to Vernal,
Narragansett, Rhizoma and Rambler.
2. P2 Puslinch Field (8 acres) Long-term pasture.
4 acres Ladino 2 + Lincoln 10
4 acres Alfalfa 6 + Ladino 2 + Lincoln 10
3. Auld Farm. 1A (8 acres) Hay-pasture.
DuPuits 10 + Lincoln 10 4 acres
DuPuits 10 + Saratoga 10 4 acres
4. Auld Farm. Field 9 (20 acres) Hay-pasture.
Vernal 10 + Ladino 1 + Brome 8.
5. Kay Farm. Field J (22 acres) Hay-pasture.
Vernal 10 + Ladino 1 + Brome 8.
6. Beef pasture area O.A.C. (8 acres).
Ladino 2 + Lincoln 10 4 acres
Ladino 2 + Saratoga 10 4 acres

EFFECT OF HAY CONDITIONING AND TIME OF RAKING ON HAY

Location: Brampton Farm

Objectives: To determine the effect of the following on the amount of leaf, color, crude protein, fibre content and the length of time required to cure before baling of early and late cut hay.

- (1) Crushed vs. uncrushed
- (2) Time of raking

Procedure:

1. Sample the test area for original dry matter (percent), and leaf content (percent) immediately when cut. Size of a sample - 4-5 lbs. Number of samples - 3 per replication.
2. Sample test area for original leaf loss on soil surface collecting the leaves under a board 1' by 5' across the swath. Number of samples - 4 per replication.
3. For dry matter determinations, collect samples of hay immediately prior to raking into windrows and from the bales immediately following the baling operation. Before windrowing, size of a sample, 4-5 lbs.; number of samples , 2 per plot.
After baling, size of a sample, 4-5 lbs.; number of samples, 2 per plot, each from a different bale.
4. Sample treatments for leaf shatter.
 - (a) Following raking, collect the leaves under a board 1' by 5' placed across the swath. Number of samples per plot - 4.
 - (b) Amount of leaf in baled hay to be determined from dry matter samples taken following baling operation.
5. Hay color to be taken using color charts on the dry matter samples immediately following drying.
6. Crude protein and fibre to be taken on some treatments if warranted.
7. All plots to be baled as soon as considered fit, tagged and stored.

Design: Split plot with 6 replications.

Main plots - Crushed vs. uncrushed
Sub plots - Raking times (1) wilted on top
 (2) dry on top, wilted underneath
 (3) swath cured.

Plot Size: Each plot to consist of 3 swaths approximately 100 feet long.

Total Number of Entries: 36 per test.

Number of Tests: 2; early cut hay and late cut hay.

HAY CONDITIONING AND RAKING TIMES

DuPuits + Oron Mixture¹

Test 142

Date Cut - June 23, 1959

	Net Loss Leaf lbs./ac.	Percent Leaf in Bale	Curing Hours			Total Time		
			Cut to Rake	Rake to Bale	Total	Cut to Rake	Rake to Bale	Total
Crushed								
Wilted on top	129	31.3	4	7	11	4	22	26
Dry on top	196	33.8	5	5	10	20	5	25
Swath cured	252	30.3	10	44	54	29	119	144
Mean	192	31.8						
Uncrushed								
Wilted on top	203	28.1	5	49	54	20	124	144
Dry on top	88	31.2	8	4	12	23	4	27
Swath cured	243	25.9	49	5	54	139	5	144
Mean	176	28.4						

¹ DuPuits 10 lbs. + Oron 6 lbs. Yield 4850 lbs./acre 36.4% D.M. when cut

HAY CONDITIONING AND RAKING TIMES

Vernal + Lincoln Mixture¹

Test 143

Date Cut - June 29, 1959

	Net Loss Leaf lbs./ac.	Percent Leaf in Bale	Curing Hours			Total Time		
			Cut to Rake	Rake to Bale	Total	Cut to Rake	Rake to Bale	Total
Crushed								
Wilted on top	17	26.5	4.5	4.0	8.5	19.5	29.0	48.5
Dry on top	64	27.2	5.5	2.0	7.5	20.5	28.0	48.5
Swath cured	454	26.2	6.5	3.0	9.5	21.5	27.0	48.5
Mean	178	26.7						
Uncrushed								
Wilted on top	131	24.7	5.5	7.0	12.5	20.5	31.0	51.5
Dry on top	234	25.3	7.5	4.0	11.5	22.5	27.0	49.5
Swath cured	394	25.2	13.5	1.0	14.5	43.5	6.0	49.5
Mean	253	25.1						

1 Vernal 10 lbs. + Lincoln 10 lbs. Yield 5200 lbs./acre 41% D.M. when cut

EMERSON BIRDSFOOT TREFOIL MIXTURES FOR PASTURE - GUELPH, 1957

Pounds of Dry Matter 1959

Empire 5 +	June 8	Aug. 7	Oct. 16	1959 Total	1958 Total	2-year Average
Can. Brome 9	3560	2086	528	6174	4152	5163—
Lincoln	4364	2386	524	7274	5225	6250
Lyon	4664	2367	601	7632	4799	6216
Ave.	4196	2280	551	7027	4725	5876
Com. Orchard 6	3188	2394	462	6044	3643	4844—
Frode	3383	2444	791	6618	4041	5330
S-37	2804	2578	753	6135	4193	5164
Ave.	3125	2472	669	6266	3959	5113
Com. Timothy 5	4025	2346	620	6990	4660	5825—
Climax	3888	2383	751	7022	4144	5583
S-48	3806	2550	724	7079	4481	5780
Ave.	3906	2426	698	7030	4428	5729
C. M.Fescue 6	4013	2574	696	7283	4304	5794
Mefon	4193	2522	610	7324	4280	5802
S-215	3869	2318	684	6871	4854	5863
Ave.	4025	2471	663	7159	4479	5819
Reed Canary 6	3498	2117	743	6358	4552	5455
<hr/>						
Vernal 10 +						
Can. Brome 10	4941	3479	1291	9710	9529	9620
Com. Orchard	4804	3209	1431	9445	8433	8939
Com. Timothy	4923	3481	1402	9806	9616	9711
Com. M.Fescue	4809	3676	1464	9950	9904	9927
Com. R.Canary	5076	3014	1321	9410	9601	9506
Ave.	4911	3372	1382	9664	9417	9541

EMPIRE BIRDSFOOT TREFOIL MIXTURES FOR PASTURE, GUELPH, 1957

Pounds Components per Acre 1959

Empire 5 +	June 8		August 7		October 16		Total	
	Legume	Grass	Legume	Grass	Legume	Grass	Legume	Grass
Can. Brome 9	1607	1953	1362	924	366	162	3335	2839-
Lincoln	2025	2339	1674	712	311	213	4010	3264
Lyon Ave.	2109	2556	1860	507	339	262	4307	3325
	1914	2283	1632	648	339	212	3884	3143
Com. Orchard 6	2029	1160	1591	805	209	253	3829	2215-
Frode	2060	1324	1676	768	419	373	4154	2464
S-37 Ave.	1977	828	1676	902	321	431	3974	2161
	2022	1104	1648	825	316	352	3986	2280
Com. Timothy 5	1811	2214	2054	292	420	200	4285	2706-
Climax	1800	2088	2174	209	485	266	4459	2563
S-48 Ave.	1859	1947	2233	316	451	274	4543	2536
	1823	2083	2154	272	452	247	4429	2602
Com. Meadow Fescue 6	2356	1658	2101	473	613	54	5070	2185
Mefon	2357	1837	2268	254	530	68	5154	2159
S-215 Ave.	2026	1843	2132	186	550	134	4708	2163
	2246	1779	2167	304	564	85	4977	2169
Reed Canary 6	1912	1586	1468	650	344	399	3724	2634
<hr/>								
Vernal 10 +								
Can. Brome 10	4265	676	2658	820	1115	176	8038	1672
Com. Orchard	4016	788	2480	729	1145	286	7641	1804
Com. Timothy	4600	323	3117	364	1402	0	9119	687
Com. Meadow Fescue	4565	244	3676	0	1464	0	9706	244
Com. Reed Canary	4584	492	1916	1098	1023	298	7522	1888
Average	4406	505	2769	602	1230	152	8405	1259

EMPIRE-BROMEGRASS MIXTURES FOR PASTURE, 1957

Total Pounds of Dry Matter per Acre

Empire 5 +	1959			Total	1958-1959 Average
	June	July	August		
Canadian Brome	6	3615	1731	1289	6634
	9	3694	1716	1269	6679
	12	3491	1715	1430	6635
	15	3299	1814	1443	6556
	18	3648	1766	1442	6855
	Average	3549	1748	1374	6672
Lincoln	6	4045	1767	1042	6854
	9	4037	1867	1493	7148
	12	3925	1787	1120	6831
	15	3819	1953	1374	7146
	18	4108	1684	769	6812
	Average	3987	1812	1160	6958
Saratoga	6	3861	1811	1303	6975
	9	3902	1888	1508	7298
	12	3876	1713	1203	6791
	15	3671	1856	1454	6981
	18	3720	1721	1046	6486
	Average	3806	1798	1303	6906
Average	6	3840	1770	1211	6821
	9	3878	1824	1423	7042
	12	3764	1738	1251	6752
	15	3596	1874	1424	6894
	18	3825	1724	1086	6718
	Average	3781	1786	1279	6845

EMPIRE-BROMEGRASS MIXTURES FOR PASTURE, GUELPH

Pounds of Components per Acre

Empire 5 +	1959								1958-1959		
	June		July		August		Total		Average	Brome	
	Trefoil	Brome	Trefoil	Brome	Trefoil	Brome	Trefoil	Brome	Trefoil	Brome	
Canadian Brome	6	1026	2480	1158	532	924	272	3109	3283	3501	2995
	9	1361	2260	1353	355	939	280	3653	2895	3710	2656
	12	1276	2118	1267	411	1066	287	3609	2816	3590	2585
	15	1375	1889	1407	367	1104	280	3886	2535	3626	2544
	18	1579	2020	1371	340	1100	245	4049	2606	3710	2349
	Average	1323	2153	1311	401	1027	273	3661	2827	3627	2626
Lincoln	6	1406	2536	1180	531	734	244	3321	3311	3584	2988
	9	1305	2681	1262	560	865	301	3431	3542	3489	3343
	12	1400	2487	1259	479	822	260	3481	3225	3503	2952
	15	1417	2362	1387	493	958	354	3762	3209	3470	3168
	18	1747	2280	1230	422	727	254	3704	2957	3567	2916
	Average	1455	2469	1264	497	821	283	3540	3249	3523	3073
Saratoga	6	987	2777	1187	584	928	321	3101	3681	3345	3440
	9	1064	2763	1295	532	1012	420	3371	3715	3401	3533
	12	1163	2665	1154	543	841	308	3158	3516	3218	3402
	15	959	2694	1177	643	966	383	3101	3720	3080	3512
	18	1174	2527	1079	575	693	310	2945	3412	3168	3390
	Average	1069	2685	1178	575	888	348	3135	3609	3242	3456
Average	6	1140	2598	1175	549	862	279	3177	3425	3477	3141
	9	1243	2568	1303	482	939	334	3485	3384	3533	3177
	12	1280	2423	1227	478	910	285	3416	3186	3437	2980
	15	1250	2315	1324	501	1009	339	3583	3155	3392	3075
	18	1500	2276	1227	446	840	270	3566	2992	3482	2885
	Average	1282	2436	1251	491	912	301	3445	3228	3464	3052

VIKING BIRDSFOOT TREFOIL MIXTURES FOR PASTURE - GUELPH, 1957

Pounds of Dry Matter, 1959

Viking 5 +	1959					1958 Total	1958-1959 Average
	May 25	June 7	Aug. 7	Oct. 16	Total		
Canadian Brome 9	3056	2022	1901	683	7662	5239	6451
Lincoln	3376	2055	1879	819	8129	6428	7279
Lyon	3195	2158	1871	865	8089	5580	6835
Average	3209	2078	1884	789	7960	5749	6855
Common Orchard 6	2577	2167	1654	878	7277	5004	6141
Frode	2672	2542	1782	1175	8171	5524	6848
S-37	2172	2549	1927	1069	7716	5827	6772
Average	2474	2419	1788	1041	7721	5452	6587
Common Timothy 5	2745	2399	1838	970	7952	5534	6743
Climax	2779	2491	1776	863	7908	5531	6720
S-48	2662	2455	1751	924	7792	5899	6846
Average	2729	2448	1788	919	7884	5655	6770
Com. M. Fescue 6	2827	2589	1798	945	8159	5195	6677
Mefon	2808	2432	1769	1098	8107	5885	6996
S-215	2666	2151	1878	1045	7740	5607	6674
Average	2767	2391	1815	1029	8002	5562	6782
Reed Canary 6	2892	2093	1743	923	7650	5915	6783
Vernal 10 +							
Can. Brome 10	3602	3380	2595	1165	10742	9462	10102
Com. Orchard	3466	3349	2577	1293	10684	9171	9928
Com. Timothy	3801	3275	2604	1172	10852	9194	10023
Com. M.Fescue	3185	3000	2300	1081	9565	9433	9499
Com. R.Canary	3548	3458	2555	1156	10717	9532	10125
Average	3520	3292	2526	1173	10512	9358	9935

VIKING BIRDSFOOT TREFOIL MIXTURES FOR PASTURE - GUELPH, 1957

Pounds of Components per Acre, 1959

Viking 5 +		May 25 Legume	May 25 Grass	June 7 Legume	June 7 Grass	August 7 Legume	August 7 Grass	October 16 Legume	October 16 Grass	Total Legume	Total Grass
Canadian Brome 9	1681	1376	1182	840	1733	168	470	214	5066	2598	
Lincoln	1813	1563	1307	748	1689	143	484	335	5293	2789	
Lyon	1879	1317	1479	679	1727	145	523	342	5608	2483	
Average	1791	1419	1323	756	1716	152	492	297	5322	2623	
Common Orchard 6	1619	959	1279	889	1407	247	431	447	4736	2542	
Frode	1806	867	1522	1019	1492	290	523	652	5343	2828	
S-37	1561	611	1589	960	1684	244	399	670	5233	2485	
Average	1662	812	1463	956	1528	260	451	590	5104	2618	
Common Timothy 5	1466	1279	1392	1007	1814	24	556	414	5228	2724	
Climax	1631	1148	1345	1145	1688	88	510	353	5174	2734	
S-48	1431	1231	1317	1138	1663	88	436	488	4847	2945	
Average	1509	1219	1351	1097	1722	67	501	418	5083	2801	
Com. Meadow Fescue 6	2084	743	2017	573	1746	52	870	75	6717	1443	
Mefon	1886	922	2031	401	1720	50	962	135	6599	1508	
S-215	1895	771	1828	323	1826	53	836	209	6385	1356	
Average	1955	812	1959	432	1764	52	889	140	6567	1436	
Reed Canary 6	1637	1255	1242	851	1556	187	492	436	4927	2729	
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Vernal 10 +											
Can. Brome 10	3286	316	3257	124	2595	0	1106	59	10244	499	
Com. Orchard	3177	288	2894	456	2512	64	1083	210	9666	1018	
Com. Timothy	3611	190	2800	475	2604	0	1116	57	10131	722	
Com. M.Fescue	2942	243	2942	58	2300	0	1068	13	9252	314	
Com. R.Canary	3065	484	3204	254	2520	35	1071	85	9860	858	
Average	3216	304	3019	273	2506	20	1089	85	9831	682	

VIKING-BROMEGRASS MIXTURES FOR PASTURE, 1957

Total Pounds of Dry Matter per Acre

Viking 5 +		May	July	August	October	Total	1958 Total	1958-1959 Average
Canadian Brome	6	2969	3462	2276	1252	9958	6358	8158
	9	2477	3530	2178	1112	9296	6672	7984
	12	2231	2960	2070	1142	8403	6276	7340
	15	2642	3264	2140	1159	9206	5749	7478
	18	2518	3483	2142	1020	9163	6020	7592
	Average	2567	3340	2161	1137	9205	6215	7710
Lincoln	6	2860	3287	2037	1297	9481	7651	8566
	9	2659	3109	2044	1378	9190	7670	8430
	12	2649	3025	2088	1273	9034	7249	8142
	15	3030	3160	2025	1280	9494	7178	8336
	18	2459	3144	2054	1431	9087	7507	8297
	Average	2731	3145	2049	1332	9257	7451	8354
Saratoga	6	2745	3081	2101	1443	9369	7496	8433
	9	2797	3028	2076	1361	9262	6857	8060
	12	2795	3222	2162	1287	9467	7035	8251
	15	2837	3275	2056	1298	9465	6917	8191
	18	2929	2984	2062	1270	9245	6581	7913
	Average	2821	3118	2091	1332	9362	6977	8170
Average	6	2858	3277	2138	1331	9603	7168	8386
	9	2644	3222	2099	1284	9249	7065	8157
	12	2558	3069	2107	1234	8968	6853	7911
	15	2836	3233	2074	1246	9388	6615	8002
	18	2635	3204	2086	1240	9165	6703	7934
	Average	2706	3201	2101	1267	9275	6881	8078

SEEDING RATES OF NARRAGANSETT ALFALFA x SEEDING RATES OF EMPIRE, 1958

Pounds of Dry Matter per Acre, 1959

Narragansett Alfalfa Rate	Birdsfoot Trefoil Rate	1959					1958 Total*
		June	July	August	September	Total	
3	3	3322	1489	1460	957	7229	1502
	6	3313	1408	1597	973	7291	1523
	9	3556	1398	1519	930	7404	1488
	Average	3398	1432	1525	953	7308	1504
6	3	3203	1389	1464	942	6998	1503
	6	3565	1491	1542	936	7534	1577
	9	3253	1394	1452	1049	7148	1492
	Average	3340	1425	1486	976	7227	1524
9	3	3527	1703	1785	1089	8104	1511
	6	3480	1603	1570	924	7577	1397
	9	3753	1576	1620	1014	7963	1472
	Average	3587	1628	1658	1009	7881	1460
Average	3	3351	1527	1570	996	7444	1505
	6	3453	1501	1570	944	7467	1499
	9	3521	1456	1530	998	7505	1484
	Average	3442	1495	1556	979	7472	1496

* one cut only in fall of seedling year

SEEDING RATES OF VERNAL ALFALFA x SEEDING RATES OF EMPIRE, 1958

Pounds of Dry Matter per Acre, 1959

Vernal Alfalfa Rate	Birdsfoot Trefoil Rate	1959				1958 Total*
		June	July	August	September	
3	3	3248	1109	1221	869	6447
	6	3337	1261	1305	837	6739
	9	3297	1216	1337	830	6680
	Average	3294	1195	1287	845	6622
6	3	3362	1410	1482	934	7188
	6	3644	1610	1429	903	7586
	9	3517	1471	1493	944	7425
	Average	3507	1497	1468	927	7400
9	3	3516	1368	1421	917	7222
	6	3588	1433	1529	981	7531
	9	3641	1469	1484	909	7503
	Average	3581	1423	1478	936	7418
Average	3	3375	1296	1375	907	6952
	6	3523	1435	1421	907	7285
	9	3485	1385	1438	894	7203
	Average	3461	1372	1411	903	7147

* one cut only in fall of seedling year

SEEDING RATES OF GRIMM ALFALFA x SEEDING RATES OF EMPIRE, 1958

Pounds of Dry Matter per Acre, 1959

Grimm Alfalfa Rate	Birdsfoot Trefoil Rate	1959				1958 Total*
		June	July	August	September	
3	3	2914	1139	1353	845	6250
	6	3028	1228	1350	883	6490
	9	3063	1161	1282	822	6328
	Average	3002	1176	1328	850	6356
6	3	3068	1409	1398	857	6731
	6	3197	1433	1411	978	7018
	9	3356	1518	1521	984	7379
	Average	3207	1453	1443	939	7043
9	3	3202	1683	1530	913	7328
	6	3216	1840	1508	871	7443
	9	3169	1445	1506	901	7021
	Average	3196	1656	1515	895	7264
Average	3	3061	1410	1427	872	6770
	6	3147	1500	1423	911	6984
	9	3196	1375	1436	902	6909
	Average	3135	1428	1429	895	6888

* one cut only in fall of seedling year

SEEDING RATES OF ALFALFA x SEEDING RATES OF EMPIRE, 1958

Alfalfa Plants per Square Foot - Fall, 1959

Empire Seedling Rate	Narragansett				Vernal				Grimm				Average
	3	6	9	Average	3	6	9	Average	3	6	9	Average	
3	2.26	3.61	4.86	3.59	2.95	3.71	3.50	2.71	2.38	3.61	2.71	2.90	3.06
6	2.89	3.93	4.16	3.66	2.95	3.60	3.65	3.51	3.28	3.18	3.38	3.36	3.51
9	3.83	4.38	3.43	3.88	2.23	3.23	4.11	3.75	3.05	3.28	3.81	3.30	3.64
Average	2.99	3.97	4.15	3.70	2.71	3.51	3.75	3.32	2.90	3.36	3.30	3.18	

Average seeding rates of alfalfa

3 2.86

6 3.61

9 3.73

SEEDING RATES OF ALFALFA x SEEDING RATES OF VIKING, 1958

Viking Plants per Square Foot - Fall, 1959

Viking Seeding Rate	Narragansett				Vernal				Grimm				Average
	3	6	9	Average	3	6	9	Average	3	6	9	Average	
3	4.71	4.23	3.50	4.15	4.26	4.11	4.33	4.23	4.51	3.71	5.26	4.50	4.29
6	5.75	3.55	4.31	4.53	4.66	5.28	4.55	4.83	4.40	3.95	4.78	4.37	4.58
9	4.38	3.66	4.53	4.19	5.76	4.73	4.71	5.07	4.35	4.05	5.40	4.60	4.62
Average	4.95	3.81	4.11	4.29	4.90	4.71	4.53	4.71	4.42	3.90	5.15	4.49	

Average Seeding Rate of Alfalfa

3	4.76
6	4.14
9	4.60

ROW WIDTH AND RATE OF SEEDING KALE, 1959 (135)

Location: B-1

Seeded: June 6, 1959

Row Width and Rate of Seeding	August 13 Harvest				October 20 Harvest			
	Percent Dry Matter	Yield Green Tons/ac.	Yield Dry Matter Tons/ac.	Percent Dry Matter	Yield Green Tons/ac.	Yield Dry Matter Tons/ac.		
<u>Row Seeding</u>								
Dunn's Marrowstem	1	8.7	24.06	2.08	11.4	57.19	6.32	
	2	8.7	23.68	2.11	11.9	54.60	6.43	
	3	8.9	23.68	2.09	11.9	53.07	6.01	
	4	8.9	24.62	2.19	11.6	48.90	5.65	
	5	9.1	24.19	2.22	13.1	46.67	5.85	
	Average	8.8	24.04	2.13	12.0	52.26	6.02	
Sharpe's 1000-Headed	1	9.5	16.93	1.60	14.1	44.32	6.20	
	2	9.5	20.71	1.92	13.8	45.20	6.19	
	3	9.8	23.31	2.26	15.7	42.37	6.02	
	4	10.2	20.11	2.05	13.9	38.36	5.19	
	5	10.1	19.51	1.96	14.9	34.73	5.07	
	Average	9.8	20.11	1.96	14.5	41.00	5.87	
<u>Broadcast Seeding</u>								
Dunn's Marrowstem	2	9.1	21.24	1.94	11.7	32.73	3.75	
	4	9.4	24.42	2.33	12.5	28.66	3.58	
	6	9.4	26.06	2.45	13.5	30.87	4.16	
	8	9.2	27.64	2.54	13.5	31.93	4.26	
	Average	9.3	24.84	2.32	12.8	31.05	3.94	
Sharpe's 1000-Headed	2	10.3	17.29	1.77	14.7	31.05	4.50	
	4	10.4	20.42	2.11	14.9	30.33	4.59	
	6	10.3	21.44	2.17	16.4	26.56	4.19	
	8	10.0	23.22	2.31	15.6	26.87	4.18	
	Average	10.2	20.59	2.09	15.4	28.70	4.36	

ROW WIDTH AND RATE OF SEEDING KALE, 1959 (135)

Location: B-1

Seeded: June 6, 1959

	Plants per Foot of Row or per sq.ft.	August 13 Harvest			October 20 Harvest				Percent Leaf
		Height cms.	Stem Diameter cms.	Weight 25 plants gms.	Height cms.	Stem Diameter cms.	Weight 25 plants gms.		
<u>Row Seeding</u>									
Dunn's Marrowstem	1	7.7	80.0	2.34	645	117	2.78	1646	
	2	8.1	81.5	2.17	577	112	2.38	1447	24.6
	3	9.2	79.7	2.29	641	103	2.15	1391	
	4	11.0	79.0	2.12	535	108	2.17	970	
	5	13.7	76.2	1.78	440	102	1.81	854	
	Average	9.9	79.3	2.14	570	108	2.26	1328	
Sharpe's 1000-Headed	1	4.9	78.5	1.92	714	109	2.09	2421	
	2	5.8	79.0	1.88	715	122	2.07	2120	34.6
	3	10.4	76.7	1.55	457	105	1.58	1275	
	4	13.5	69.2	1.29	352	102	1.34	919	
	5	15.2	70.5	1.34	390	98	1.43	989	
	Average	10.0	74.8	1.60	526	107	1.70	1545	
<u>Broadcast Seedings</u>									
Dunn's Marrowstem	2	3.6	76.7	2.36	630	98	2.75	1567	
	4	6.6	73.7	1.96	478	104	1.98	905	
	6	6.8	75.0	1.85	429	104	1.72	867	22.9
	8	8.7	71.0	1.55	336	99	1.53	775	
	Average	6.4	74.2	1.93	468	101	2.00	1046	
Sharpe's 1000-Headed	2	4.8	75.0	1.62	487	102	1.67	1316	
	4	6.6	81.0	1.56	465	107	1.42	965	
	6	7.4	75.0	1.43	393	93	1.27	771	29.2
	8	9.7	71.7	1.22	309	100	1.36	823	
	Average	7.1	75.7	1.45	414	101	1.53	969	

ROW WIDTH AND RATE OF SEEDING RAPE, 1959 (134*)

Location: A-3

Seeded: July 10, 1959

Method and Rate		Height Inches	Percent Dry Matter	Yield Green Tons/ac.	Yield Dry Matter Tons/ac.
Row	$\frac{1}{2}$	30.5	10.7	21.6	2.32
	1	31.0	10.3	19.2	1.98
	$1\frac{1}{2}$	30.5	10.3	20.7	2.14
	2	31.5	11.1	21.9	2.43
Broadcast	2	31.5	11.9	14.0	1.67
	4	30.5	11.1	14.3	1.60
	6	31.5	11.8	14.4	1.73

* Data summary on two reps. only due to drought

KALE SILAGE - 1959

Ensiled: October 23

Fed: January 4-21

Silage	Percent Dry Matter When Ensiled	Amount* Ensiled	Pounds Spoilage	Percent Dry Matter When Fed	Amount Fed	Percent** Loss
Kale	14.8	4450	40	18.3	3072	31
Kale + barley	16.6	4975	70	21.2	3224	35
Kale + corn	29.4	3850	150	27.0	3136	19

* Kale + 200 lbs. barley

** Kale and Kale + barley silos ran considerably

OAT VARIETIES AND FORAGE ESTABLISHMENT (131)

Location: D-13

Seeded: May, 1959

Oat Variety	Oat Seeding Rate (bu/ac)	Oat Yield (lb./ac.)	Oat Height (in.)	Main Culms row	Fertile Culms (ft. row)	Stooling index	Establishment June 2 plants/sq.ft.		Establishment Nov. 4 plants/sq.ft.		Experiment No. 128 Alfalfa Hay Yields**				
	Alfalfa*	Trefoil	Alfalfa*	Trefoil	1st Cut	2nd Cut	3rd Cut	Total							
Branch	1	1934	38.5	10.3	13.4	1.30		4.5		3.8	4549	3189	1456	9194	
	2½	2236	35.0	22.9	22.7	0.99		7.9		5.2	4367	2708	1354	8429	
	Ave.	2085	36.7	16.6	18.0	1.08		6.2		4.5	4458	2948	1405	8811	
Rodney	1	2043	38.5	11.0	14.0	1.27		7.9		5.1	4415	2893	1502	8810	
	2½	2261	35.5	21.7	22.3	1.03		5.9		3.7	4438	2834	1511	8783	
	Ave.	2152	37.0	16.3	18.1	1.11		6.9		4.4	4426	2863	1506	8796	
Clintland	1	2026	35.0	10.3	13.9	1.35	89.9	7.5		5.4	4599	3009	1422	9030	
	2½	1980	34.5	21.7	24.1	1.11	79.1	8.9		5.7	4416	2839	1530	8785	
	Ave.	2003	34.7	16.0	19.0	1.19		8.2		5.5	4507	2924	1476	8907	
Shield	1	1942	38.5	10.5	14.6	1.39		5.4	82.1	4.5	4601	3173	1630	9404	
	2½	2183	37.5	22.1	24.9	1.13		7.7	78.0	4.4	4394	2731	1330	8455	
	Ave.	2062	38.0	16.3	19.7	1.21		6.5		4.4	4497	2952	1482	8929	

* Heavy seeding rate

** Establishment data in 1958 report. Trefoil not cut due to alsike clover

OAT VARIETIES ON FORAGE ESTABLISHMENT

Location: Brampton

R.P.O. - F.H.17

Oat variety	Seeding Rate bu./ac.	Oat Yield lbs./ac.	Main Stems ft. row	Fertile Culms ft. row	Stooling index	Alfalfa Plants* per sq.ft.
Branch	1	1894	8.7	19.6	2.25	75.7
	2½	2144	19.7	19.4	0.98	82.3
	Ave.	2019	14.2	19.5	1.37	79.0
Rodney	1	2129	8.5	19.9	2.34	74.7
	2½	2162	17.9	21.9	1.22	87.5
	Ave.	2145	13.2	20.9	1.58	81.1
Clintland	1	1677	8.0	20.6	2.57	68.0
	2½	1652	19.2	19.2	1.00	86.2
	Ave.	1663	13.6	19.9	1.46	77.1
Shield	1	1761	8.1	21.8	2.69	82.6
	2½	1894	21.4	18.7	0.87	85.2
	Ave.	1822	14.7	20.2	1.37	83.9

* Heavy seeding rate

COMPANION CROP MANAGEMENT (121)

Location: D-5

Seeded: May, 1957

Management	Establishment 1957		Alfalfa Height cm. July 20/57	Hay - 1958		Hay - 1959						
	Alfalfa	Brome		First Crop*	First Crop Legume Yield	Second Crop Legume Content	Second Crop Legume Yield	Third Crop Legume Content	Third Crop Legume Yield	Total Yield		
Oats cut 10" left	20.2	12.8	-	1.99	0.86	3.17	1.26	.87	.89	4.93		
Oats cut 24" left	21.4	10.8	-	1.93	0.86	3.11	1.08	.87	.94	4.92		
Oats cut 24" removed	21.6	13.1	-	1.89	0.85	3.00	1.12	.77	.93	4.70		
Oats - hay	24.9	12.6	-	2.05	1.10	3.23	1.18	.97	.89	5.09		
Oats - 14" grain	23.9	11.7	59.1	2.10	1.27	3.15	1.08	.89	.94	4.98		
Oats - grain 7"	22.6	9.1	60.2	2.12	1.34	3.23	1.52	.94	.56	.88	.77	5.05
Barley - grain	23.2	7.0	49.5	2.13	1.50	3.22	1.41	.89	.59	.91	.80	5.02
Mixed grain	25.4	10.5	54.7	2.01	1.37	3.25	1.45	.90	.60	.95	.86	5.10
No companion	23.8	11.6	70.3	2.06	1.00	3.14	1.38	.83	.51	.95	.85	4.92
L.S.D. 0.05	N.S.	2.8		N.S.	0.15							
C.V.	12.8	16.7		8.1	11.2							

* No second cut due to lack of moisture

COMPANION CROP MANAGEMENT (127)

Location: D-18

Seeded: May 1958

Management	Establishment 1958		Alfalfa Height cms. July 25/58	Hay - 1959				Total Yield
	Alfalfa	Brome		First Crop Yield	Legume Content	Second Crop Yield	Legume Content	
Oats cut 10" left	18.2	10.6	-	2.56	0.86	1.57	1.07	4.13
Oats cut 24" left	18.8	9.3	-	2.76	1.02	1.56	1.17	4.32
Oats cut 24" removed	18.1	9.5	-	2.53	1.14	1.63	1.24	4.16
Oats - hay	21.6	12.1	-	2.62	1.25	1.64	1.34	4.26
Oats - 14" grain	19.9	9.9	40.8	2.36	1.21	1.60	1.29	3.96
Oats - 7" grain	18.8	10.4	37.4	2.32	1.29	1.70	1.31	4.02
Barley - grain	20.3	6.2	22.1	2.24	1.53	1.67	1.41	3.81
Mixed grain	20.1	8.4	31.4	2.29	1.58	1.57	1.30	3.86
No companion	21.2	8.6	61.1	2.66	1.38	1.53	1.50	4.19
L.S.D. 0.05	N.S.	3.1						
C.V.	23.6	28.4						

COMPANION CROP MANAGEMENT (130)

Location: D-14

Seeded: May 1959

Management	Establishment				Yield per Acre**	
	1959 Alfalfa*	Brome	Alfalfa 3-yr. ave.	Brome 4-yr. ave.	1959	3-yr. ave.
Oats cut 10" left	42.0	12.3	17.2	13.6	-	-
Oats cut 24" left	45.6	9.1	17.9	11.7	-	-
Oats cut 24" removed	43.3	9.7	18.0	13.1	2067	2050
Oats - hay	52.8	9.5	20.1	13.9	2955	3950
Oats - 14" grain	52.3	9.5	19.6	12.8	1603	2554
Oats - 7" grain	47.2	9.0	18.5	11.9	1859	2793
Barley - grain	47.2	7.4	19.2	8.5	2651	2501
Mixed grain	47.0	7.4	-	8.8	2435	2819
No companion	44.0	10.5	21.7	12.7	2740	3220

* heavy seeding rate

** in pounds of forage or grain

RATE OF SEEDING OATS (126, 140)

Location: Brampton

Seeded: May 1957 and May 1959

Seeding Rate	Tons of Hay - Experiment 126 1958 1959				Experiment 140	
	First Cut	Legume Component	First Cut	Legume Component	Oat Yield lbs.	Alfalfa Stand*
7" drills	1.87	1.45	2.35	1.52	2153	89.3
	1½	1.96	2.43	1.72	2305	78.5
	2	1.82	2.31	1.61	2417	87.5
	2½	1.81	2.45	1.67	2369	77.3
	3	1.90	2.34	1.55	2186	82.5
14" drills	1.68	1.32	2.28	1.54	1979	97.5
	1½	1.75	2.52	1.42	2140	82.8
L.S.D. (0.05)	N.S.	0.21				
C.V.	9.0	12.4				

* heavy seeding rate

BAND SEEDING

Establishment - Plants per sq. ft.

F.H. 33-13

Location - Brampton

Outline - 1956 report

Treatment	1956 Seeding Alfalfa	1956 Seeding Brome	1957 Seeding Alfalfa	1957 Seeding Brome	1959 Seeding Alfalfa	1959 Seeding Brome	3 Year Average Alfalfa	3 Year Average Brome
Band	8.4	5.4	24.0	8.2	15.1	4.9	15.8	6.2
Band, harrow	9.3	7.9	24.1	7.4	13.3	4.1	15.6	6.4
Band, pack	10.3	6.0	23.0	8.8	16.2	2.6	16.5	5.8
Band, 16" drills	10.5	8.1	24.9	6.7	14.9	5.7	16.8	6.8
Band, no oats	10.5	11.5	26.9	8.3	16.7	5.5	18.0	8.4
Broadcast, pack	-	-	23.9	6.1	14.1	2.9	19.0*	4.5*
Broadcast, harrow	12.5	6.3	25.5	6.8	16.3	2.9	18.1	5.3
L.S.D. 0.05	N.S.	2.2	N.S.	1.5				
C.V.	21.2	21.3	15.9	14.0				

BAND SEEDING

Hay - Tons

F.H. 33-13

Location - Brampton

Outline - 1956 report

Treatment	1956 Seeding			1957 Seeding			1959	
	First Crop	Hay 1957 Legume Component	Total Yield	First Crop	Hay 1958 Legume Component	Total Yield	First Crop	Hay 1959 Legume Component
Band	1.88	1.14	2.55	1.41	1.13	1.96	2.66	1.50
Band, harrow	2.06	1.11	2.78	1.74	1.44	2.32	2.52	1.50
Band, pack	2.04	1.24	2.77	1.48	1.23	2.01	2.52	1.55
Band, 16" drills	1.90	0.96	2.59	1.37	1.09	1.92	2.83	1.78
Band, no oats	2.34	1.22	3.03	1.48	1.04	2.00	2.63	1.53
Broadcast, pack	-	-	-	1.52	1.30	2.14	2.53	1.68
Broadcast, harrow	2.14	1.31	2.90	1.52	1.29	2.16	2.69	1.57
L.S.D. 0.05	N.S.	N.S.	0.31	N.S.		N.S.		
C.V.	9.3	21.5	7.9	14.4		10.9		

SEEDBED FIRMING AND COVERAGE

Establishment - Plants per sq. ft.

F.H. 33-15

Location - Brampton

Outline - 1956 report

Treatment	1956 Seeding Alfalfa	1956 Seeding Brome	1957 Seeding Alfalfa	1957 Seeding Brome	1959 Seeding Alfalfa	1959 Seeding Brome	3 Year Average Alfalfa	3 Year Average Brome
Pack before	11.2	6.7	23.4	6.8	21.1	5.7	18.6	6.4
Pack after	13.3	7.9	24.3	6.7	21.6	4.4	19.7	6.3
Pack before and after	16.2	7.9	32.6	7.2	24.2	4.9	24.3	6.7
Pack before, harrow after	15.2	8.4	28.3	7.8	21.4	4.2	21.6	6.8
Harrow	12.7	7.2	28.6	10.4	24.8	4.9	22.0	7.5
Band	9.9	7.9	23.6	7.5	22.5	5.7	18.7	7.0
Chains	10.5	6.2	27.8	7.4	20.8	5.6	17.7	6.4
Check	10.3	7.8	26.8	6.6	22.0	6.6	17.7	7.0
L.S.D. 0.05	2.9	N.S.	4.3	1.7				
C.V.	16.1	14.8	25.2	32.8				

SEEDBED FIRMING AND COVERAGE

Hay - Tons

F.H. 33-15

Location - Brampton

Outline - 1956 report

Treatment	1956 Seeding			1957 Seeding			Hay 1959	
	First Crop	Hay 1957 Legume Component	Total Yield	First Crop	Hay 1958 Legume Component	Total Yield	First Crop	Legume Component
Pack before	1.92	1.27	2.81	1.78	1.48	2.45	2.24	1.44
Pack after	2.15	1.54	3.09	1.95	1.56	2.68	2.34	1.64
Pack before and after	2.24	1.64	3.20	1.90	1.51	2.57	2.39	1.38
Pack before, harrow after	2.24	1.34	3.19	1.83	1.44	2.51	2.34	1.35
Harrow	2.13	1.48	3.05	1.93	1.39	2.55	2.35	1.50
Band	1.98	1.30	2.84	1.86	1.61	2.57	2.24	1.36
Chains	1.94	1.29	2.82	1.94	1.51	2.66	2.28	1.40
Check	2.03	1.31	2.87	1.94	1.49	2.62	2.55	1.59
L.S.D. 0.05	N.S.	0.25	0.33	N.S.	N.S.	N.S.		
C.V.	9.1	12.1	7.6	9.6	11.6	8.8		

MANAGEMENT PRACTICES ON NEW SEEDINGS

F.H. 33-11

Location - Brampton

Outline - 1956 report

Treatment	Establishment - Plants per sq. ft.								Hay - Tons			
	1956 Seeding		1957 Seeding		1959 Seeding		3 Year Average		1956 Seeding	1957 Seeding	1959 Seeding*	1955 Hay
	Alfalfa	Brome	Alfalfa	Brome	Alfalfa	Brome	Alfalfa	Brome	First Crop	Legume Component	First Crop	Legume Component
Clip early, left	8.0	5.0	29.0	6.5	26.9	4.5	17.9	4.0	0.81	0.30	2.32	1.58
Clip early, remove	8.0	5.7	30.3	8.7	20.9	5.0	19.7	6.5	0.77	0.35	2.20	1.49
Clip early, remove, fertilize	7.8	4.2	30.3	7.8	23.4	3.9	20.5	5.3	0.94	0.43	2.54	1.39
Clip late, left	8.3	5.8	26.5	6.9	18.3	6.3	17.7	6.3	0.78	0.30	2.27	1.38
Clip late, remove	8.5	5.2	26.5	5.9	23.6	3.8	19.5	5.0	0.79	0.34	2.28	1.48
Unclipped	6.8	5.4	31.3	6.8	18.6	6.3	18.9	6.2	0.89	0.32	2.54	1.67
L.S.D. 0.05	N.S.	1.3	N.S.	1.9					N.S.	N.S.		
C.V.	17.0	13.0	17.5	18.0					13.1	30.8		

* not harvested in 1958 due to drought

OAT LODGING ON ALFALFA-BROME ESTABLISHMENT (132)

Location: D-13

Seeded: April 27, 1959

Variety Rate Seeding	When Lodged ¹	Oat Yield lbs./ac.	Main ² culms ft. row	Fertile ³ culms ft. row	Stooling index	Percent ⁴ Culms Lodged	Alfalfa Height cms.	Plants per sq. ft.		
								June 2 Alfalfa	June 2 Brome	Nov. 4 Alfalfa
Simcoe - 1 bu.	O	2025	8.2	13.3	1.62	0	34.7	47.0	3.5	
	E	1882				60.2	39.9			
	L	1799				79.7	29.5			
$2\frac{1}{2}$ bu.	O	2332	15.2	17.6	1.16	0	37.7	44.0	3.0	
	E	2199				77.2	37.4			
	L	2073				85.8	32.7			
Garry - 1 bu.	O	2229	7.6	10.8	1.42	0	38.6			54.1
	E	1701				48.1	37.3			
	L	1893				63.0	34.1			
$2\frac{1}{2}$ bu.	O	2211	15.3	14.8	0.97	0	31.4			56.7
	E	2037				77.0	35.5			
	L	2201				83.8	28.9			

¹ O - not lodged; E - early milk (July 7); L - late dough (July 17)

² May 13

³ July 9

⁴ At harvest July 31

HERBICIDES ON THE ESTABLISHMENT OF VERNAL ALFALFA AND VIKING
BIRDSFOOT TREFOIL, 1959

Effect of Various Rates of Eptam on Alfalfa and Trefoil

Rates of Application lbs./ac.	Percent Average Broadleaf Weed Control*	Alfalfa		Trefoil	
		Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
10	38	85	95	75	75
5	28	100	100	70	70
2.5	5	100	100	90	85
1.25	0	100	100	95	95
0.625	0	100	100	95	95

* percent of check. Scale: 100% = Best control; 0% = least control.

No grass control. Weeds present: Pigweed; Lamb's Quarters; Barnyard Grass; Lady's Thumb.

Trefoil - The lower replication showed more effect at heavy rates.

Application at even the highest rate (10 lbs./ac.) gave only fair broadleaf weed control and reduced the trefoil stand and vigor by 25 percent. There was no grass weed control.

Effect of Various Rates of Dalapon on Alfalfa and Trefoil

Rates of Application lbs./ac.	Percent Average Broadleaf Weed Control*	Alfalfa		Trefoil	
		Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
20	25	15	5	50	55
10	20	30	35	85	65
5	10	90	75	90	75
2.5	10	100	95	100	80
1.25	10	100	100	100	95

* percent of check. Scale: 100% = best control; 0% = least control.

The alfalfa stand was poor at heavy rates and plants were wilted and shrivelled up to 2.5 lbs./acre.

Weeds present: Pigweed; Lamb's Quarter; Lady's Thumb; Barnyard Grass.

Good grass control was obtained. While grass control was good at 20 lbs./ac. and 10 lbs./ac., the damage to the alfalfa especially, and to the trefoil was heavy. As can be seen the three lowest rates of application allowed excellent stands of both legumes but achieved only 10 per cent weed control and damaged the vigor of the legumes.

Effect of Various Rates of Neburon on Alfalfa and Trefoil

Rates of Application lbs./ac.	Percent Average Broadleaf Weed Control*	Alfalfa		Trefoil	
		Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
8	48	75	65	65	65
4	30	85	70	70	80
2	10	100	90	85	90
1	10	100	90	100	100
0.5	10	100	90	100	100

* percent of check. Scale: 100% = best control; 0% = least control.

No grass control achieved.

No selective weed control.

At the highest rate (8 lbs./acre) Neburon controlled broadleaf weeds better than either Eptam or Dalapon and appeared to harm both legumes less than Dalapon. Results at the three lowest rates were equally poor and there was no grass weed control.

Effect of Various Rates of Kuron on Alfalfa and Trefoil

Rates of Application pints/ac.	Percent Average Broadleaf Weed Control*	Alfalfa		Trefoil	
		Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
8	85	10	0	10	10
4	75	10	0	20	10
2	70	30	10	45	50
1	60	35	25	90	75
0.5	40	45	40	100	95

* percent of check. Scale: 100% = best control; 0% = least control.

At highest rate there was control of all alfalfa, leaving grasses and some broadleaf weeds coming through. Pigweed escaped at high rates, but was stunted.

Weed control at the four highest rates was good except for grass weeds, but at the expense of the stand and the vigor of the alfalfa. Trefoil came through well when applications of Kuron at 1 pint/ac. were made, with weed (broadleaf) control at 60%. 0.5 pint/ac. had little adverse effect on trefoil - though it achieved only 40% broadleaf weed control, however.

Effect of Various Rates of 2,4-DB on Alfalfa and Trefoil

Rates of Application oz./ac.	Percent	Alfalfa		Trefoil	
	Average Broadleaf Weed Control*	Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
48	100	50	50	25	20
24	100	65	60	35	25
12	100	90	85	75	55
6	95	100	100	95	70
3	78	100	100	95	85

* percent of check. Scale: 100% = best control; 0% = least control.

No control of Barnyard grass at any rate.

At 12 oz./ac. 100% weed control was achieved with but little damage to alfalfa and about 25% reduction in trefoil stand, with rather lower vigor (55%). It can be seen that 2,4-DB applied at 6 oz./ac. gave excellent weed control, did not appear to affect the alfalfa seedlings at all and caused a reduction of 5% in the trefoil stand, giving 85% of the trefoil vigor.

Effect of Various Rates of Diuron on Alfalfa and Trefoil

Rates of Application lbs./ac.	Percent	Alfalfa		Trefoil	
	Average Broadleaf Weed Control*	Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
4	98	10	0	30	20
2	98	10	0	45	35
1	88	50	55	55	50
0.5	82	70	80	75	65
0.25	68	85	80	90	75

* percent of check. Scale: 100% = best control; 0% = least control.

There was no control of Plantain. Pigweed control was good. Control of grass weeds (including Barnyard grass) was achieved up to 40'. Lady's Thumb control was seen to 60'.

Almost complete weed control was seen at applications of 4 lbs./ac. and 2 lbs./ac. - at the expense of the alfalfa, however. At 0.5 lbs./ac. the weed control was still very good, though plantain came through, with the vigor and stand of both legumes reduced by about 25% of the check plots. Applications of Diuron at 0.25 lbs./ac. gave promising results with good stands of both legumes, while maintaining weed control at 60%. Pigweed was kept in check to 90 feet. Plantain does not appear to be susceptible to this chemical.

Effect of No Weed Control on Alfalfa and Trefoil

Rates of Applications lbs./ac.	Percent Average Weed Control*	Alfalfa		Trefoil	
		Percent Stand*	Percent Vigor*	Percent Stand*	Percent Vigor*
0	0	100	100	100	100
0	0	100	100	100	100
0	0	100	100	100	100
0	0	100	100	100	100
0	0	100	100	100	100

Scale: 100% = best control; 0% = least control.

EFFECT OF NITROGEN ON NODULATION OF BIRDSFOOT TREFOIL - BRAMPTON, 1959

Rate of Nitrogen	Method of application of nitrogen					
	July	Drilled September	July	Broadcast September	July	Average September
0	5.0*	8.8	5.7	10.4	5.4	9.6
25	5.1	11.2	5.3	11.8	5.2	11.5
50	4.0	7.5	4.5	12.2	4.3	9.8
100	4.1	6.5	3.7	8.7	3.9	7.6

* nodules per plant

METHODS OF APPLICATION OF INOCULANTS - GUELPH, 1959

Species	Method	July 20			September 2		
		Dry weight in grams		Nodules per plant	Dry weight in grams		Nodules per plant
		Top	Roots		Top	Roots	
Alfalfa	Nodulated	.291	.198	2.4	.361	.141	5.5
	No inoculant	.297	.164	3.9	.338	.162	5.2
Empire Trefoil	Nodulated	.171	.030	1.0	.424	.109	20.8
	No inoculant	.157	.038	1.2	.485	.084	17.7
	Nitracoat + inoculant	.189	.041	2.3	.513	.046	29.1
	Corn syrup + inoculant	.206	.036	5.2	.431	.109	32.5
	Dry inoculant	.153	.025	0.5	.393	.084	25.1
	No inoculant	.200	.033	0.6	.458	.143	36.5

LEGUME INOCULANTS - 1959 TESTS

Summary

Manufacturers

Nodogen }
 Nitronox }
 Co-op } A. Dickinson Co., 2750 West 35th St., Chicago 32, Illinois.

 Legume-Aid Agricultural Laboratories, Columbus, Ohio.

 Nitragin Nitragin Co., Inc., Milwaukee 9, Wisconsin.

Evaluation

All cultures, except the Bean Group, were graded by the Most Probable Number Method as recommended by the Australian workers (University - Department of Agriculture - Laboratory Service). This method is based on the ability of serial dilutions of the inoculant to produce nodules on the proper host plant. It is carried out in duplicate and the number of rhizobia per gram of dry inoculant is found by reference to Fisher and Yates statistical tables (1953, page 6 and Table VIII2). No correlation was found between the numbers of rhizobia as determined by the plate count and the numbers of rhizobia as determined by the nodulation method. Because of the great difficulty in visually separating Rhizobium colonies from those of certain contaminants the plate count method is deemed very unsatisfactory for evaluating powder legume inoculants.

Trade name	Alfalfa-clover		Bean group		Ladino		Trefoil	
	Examined	Unsat.	Examined	Unsat.	Examined	Unsat.	Examined	Unsat.
Nodogen	9	1	11	0	1	0	12	0
Nitronox	6	1	0	0	0	0	0	0
Co-op	16	1	0	0	7	0	4	0
Legume-Aid	19	8	5	0	4	0	9	1
Nitragin	0	0	0	0	0	0	1	0
Total	50	11	16	0	12	0	26	1
Total cultures examined						104		
Total found unsatisfactory						12		
% unsatisfactory						11.5		

No correlation was found between unsatisfactory inoculants and moisture content, percent contamination, expiry date, or distributor.

22% of the alfalfa-clover inoculants were unsatisfactory. In this group 42.1% of those produced under the trade name of Legume-Aid were graded unsatisfactory.

Code numbers of unsatisfactory inoculants

CA15, CA17, CA18, CA29, CA32, CA34, CA39, CA41, CA42, CA48, CA50, T21.

VIKING SEEDING RATE X LINCOLN BROMEGRASS SEEDING RATE

Pounds of Dry Matter per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				
		0	2	6	12	Average
2	Aug. 6	1874	1205	1196	1508	1445
	Sept. 3	172	245	105	28	137
6	Aug. 6	1709	1875	1327	1052	1490
	Sept. 3	380	415	196	114	276
12	Aug. 6	2505	2565	1625	2367	2265
	Sept. 3	141	598	281	361	345
Total	2	1023	725	650	768	791
	6	1044	1145	761	583	883
	12	1323	1581	953	1364	1305
Ave.		1130	1150	788	905	993

Pounds of Legume per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				
		0	2	6	12	Average
2	Aug. 6	885	519	195	133	433
	Sept. 3	139	153	63	14	92
6	Aug. 6	1082	1628	588	348	911
	Sept. 3	321	303	147	78	212
12	Aug. 6	1275	1394	982	1320	1242
	Sept. 3	123	499	215	275	278
Total	2	512	336	129	73	262
	6	701	965	367	213	561
	12	699	946	598	797	760
Ave.		637	749	364	361	527

VIKING SEEDING RATE x LINCOLN BROMEGRASS SEEDING RATE

Pounds of Brome per Acre, 1959

Viking seedling rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				
		0	2	6	12	Average
2	Aug. 6		310	519	927	585
	Sept. 3	34	13	8	18	
6	Aug. 6		392	448	450	430
	Sept. 3	35	24	20	26	
12	Aug. 6		495	468	746	569
	Sept. 3	59	35	39	44	
Total	2	322	266	467	351	
	6	213	236	235	228	
	12	277	251	392	306	
	Ave.	270	251	364	295	

Pounds of Weeds per Acre, 1959

Viking seedling rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				
		0	2	6	12	Average
2	Aug. 6	989	376	482	448	573
	Sept. 3	87	58	29	6	45
6	Aug. 6	121	355	291	254	255
	Sept. 3	59	77	24	16	44
12	Aug. 6	1230	676	175	301	595
	Sept. 3	180	40	31	47	74
Total	2	538	217	255	227	309
	6	90	216	157	135	149
	12	705	358	103	174	335
	Ave.	444	213	171	178	264

VIKING SEEDING RATE x COMMON BROMEGRASS SEEDING RATE

Pounds of Dry Matter per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				
		0	2	6	12	Average
2	Aug. 6	1805	2191	1522	1874	1848
	Sept. 3	79	400	404	564	361
6	Aug. 6	3766	2661	2559	2260	2811
	Sept. 3	529	843	501	833	676
12	Aug. 6	3749	3432	2558	2482	3055
	Sept. 3	449	610	635	489	546
Total	2	1884	2591	1926	2438	2209
	6	4295	3504	3060	3093	3488
	12	4198	4042	3193	2971	3601
	Ave.	3459	3379	2726	2834	3099

Pounds of Viking per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				
		0	2	6	12	Average
2	Aug. 6	486	1239	388	872	796
	Sept. 3	47	326	303	478	289
6	Aug. 6	2825	1709	1515	1214	1816
	Sept. 3	449	697	408	729	571
12	Aug. 6	2564	1782	1483	1181	1753
	Sept. 3	398	517	566	400	470
Total	2	533	1565	691	1350	1034
	6	3274	2406	1923	1943	2386
	12	2962	2299	2049	1581	2222
	Ave.	2256	2090	1554	1624	1880

VIKING SEEDING RATE x COMMON BROMEGRASS SEEDING RATE

Pounds of Bromegrass per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				Average
		0	2	6	12	
2	Aug. 6	0	375	503	554	494
	Sept. 3	0	47	31	50	42
6	Aug. 6	0	421	567	650	546
	Sept. 3	0	108	46	31	61
12	Aug. 6	0	577	509	623	569
	Sept. 3	0	60	14	47	40
Total	2	0	422	534	604	520
	6	0	529	613	681	607
	12	0	637	523	670	610
	Ave.	0	529	556	651	578

Pounds of Weeds per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Bromegrass seeding rate (lbs.)				Average
		0	2	6	12	
2	Aug. 6	1319	576	631	448	743
	Sept. 3	32	27	70	35	41
6	Aug. 6	941	531	488	396	589
	Sept. 3	80	38	48	73	59
12	Aug. 6	1185	1073	566	678	875
	Sept. 3	51	33	55	42	45
Total	2	1351	603	701	483	784
	6	1021	569	536	469	648
	12	1236	1106	621	720	920
	Ave.	1202	759	619	557	784

VIKING SEEDING RATE X CLIMAX SEEDING RATE

Pounds of Dry Matter per Acre, 1959

Viking seedling rate (lbs.)	Harvest date	Climax seeding rate (lbs.)				
		0	2	6	12	Average
2	June 4	2118	2654	2748	2426	2486
	Aug. 6	704	1652	1386	838	1145
	Sept. 3	235	523	456	348	391
6	June 4	2672	3219	2666	2287	2711
	Aug. 6	1945	2399	1961	1193	1876
	Sept. 3	462	544	583	524	528
12	June 4	3138	3385	2945	2876	3086
	Aug. 6	2967	3111	1961	1991	2508
	Sept. 3	664	690	591	532	619
Total		3057	4829	4590	3612	4022
	2	5079	6162	5210	4009	5115
	6	6769	7186	5497	5399	6213
	Ave.	4966	6059	5090	4340	

Pounds of Viking Birdsfoot Trefoil per Acre, 1959

Viking seedling rate (lbs.)	Harvest date	Climax seeding rate (lbs.)				
		0	2	6	12	Average
2	June 3	224	382	61	34	175
	Aug. 6	573	1061	383	142	540
	Sept. 3	222	387	278	110	249
6	June 3	837	511	349	35	433
	Aug. 6	1329	1366	1112	370	1045
	Sept. 3	418	466	434	273	397
12	June 3	797	880	178	199	514
	Aug. 6	1564	1553	824	874	1203
	Sept. 3	563	581	423	304	468
Total		1019	1830	722	286	964
	2	2584	2343	1895	678	1875
	6	2924	3014	1425	1377	2185
	Ave.	2175	2395	1347	780	

VIKING SEEDING RATE x CLIMAX SEEDING RATE

Pounds of Climax timothy per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Climax seeding rate (lbs.)				
		0	2	6	12	Average
2	June 4	0	1929	1875	1950	1918
	Aug. 6	0	252	318	405	325
	Sept. 3	0	44	54	35	44
6	June 4	0	2202	1877	1550	1876
	Aug. 6	0	475	441	220	379
	Sept. 3	0	52	45	44	47
12	June 4	0	2143	2201	1850	2064
	Aug. 6	0	1352	323	577	750
	Sept. 3	0	86	47	66	51
Total		0	2225	2247	2390	2287
	2	0	2729	2363	1814	2302
	6	0	3581	2571	2493	2865
	Ave.	0	2845	2394	2233	

Pounds of Weeds per Acre, 1959

Viking seeding rate (lbs.)	Harvest date	Climax seeding rate (lbs.)				
		0	2	6	12	Average
2	June 4	1893	343	811	442	872
	Aug. 6	131	341	685	291	362
	Sept. 3	13	92	124	203	108
6	June 4	1833	506	440	702	870
	Aug. 6	616	558	408	608	547
	Sept. 3	44	26	104	207	96
12	June 4	2341	362	566	827	1024
	Aug. 6	1403	206	814	540	740
	Sept. 3	101	23	121	162	102
Total		2037	776	1620	936	1342
	2	2493	1090	952	1517	1513
	6	3845	591	1501	1529	1866
	Ave.	2791	819	1357	1327	

VIKING SEEDING RATE X CLIMAX SEEDING RATE

Height and vigor of components, June 1959

Viking seedling rate (lbs.)	Component	Climax seeding rate (lbs.)				
		0	2	6	12	Average
2	Height*					
	Viking	9.5	10.5	8.0	6.0	8.5
	Climax	-	15.5	15.8	15.5	15.9
	Vigor+	10.0	6.0	1.5	1.5	4.8
6	Height*					
	Viking	11.5	11.5	9.8	4.0	9.2
	Climax	-	19.5	15.9	16.0	16.2
	Vigor+	9.0	6.0	4.3	2.5	5.5
12	Height*					
	Viking	-	12.0	7.5	8.8	9.4
	Climax	-	19.5	17.0	14.8	17.3
	Vigor+	9.0	8.0	4.0	3.5	6.1
Average	Height*					
	Viking	10.5	11.3	8.4	6.2	9.1
	Climax	-	18.1	16.2	15.4	16.5
	Vigor+	9.5	6.6	3.2	2.5	5.4

* height in inches of separated components

+ Viking vigor ratings: 1 = least; 10 = most (field notes)

GRASS VARIETIES FOR SEED PRODUCTION - 1958 (129)

Location: Section D, Range 18.

Date Seeded: May 1958.

Objectives: To determine the ability of some grass species to produce seed in Ontario and to obtain data on the seed production of some varieties of these species.

Methods: (1) Rate of seeding - Timothy - 8 lbs.

Bromegrass - 15 lbs.

Orchardgrass - 10 lbs.

(2) Varieties used - Timothy - Common, S-48, Climax.

Brome - Canada Common, Lyon, Saratoga, Lincoln.

Orchard - Frode, Oron, Danish, S-37, Hercules.

(3) Design - modified randomized block with 6 replications. Plots 6 x 22 feet.

Variety	Yield - lbs. per acre	Seed weight 100 seeds (mg.)
<hr/>		
Orchardgrass		
Hercules	243	89.3
Frode	278	77.9
S-37	213	91.6
Oron	227	95.8
Danish	247	92.4
<hr/>		
Bromegrass		
Lincoln	429	284.1
Lyon	443	287.7
Saratoga	352	315.0
Canadian brome	551	302.1

HARVESTING TIMOTHY FOR SEED

Location - Brampton

Seeded: August, 1958

Harvesting Methods

Harvesting method	Yield seed lbs./ac.	Percent hulled	Percent germination
Binder	287	29	90
Swath	308	49	81
Combine	287	38	84

Cylinder Speed - Direct Combine

Cylinder R.P.M.	Percent hulling
1100	27
1300	38
1450	50
1675	71

Hulling

Treatment	Percent germination
Unhulled	97
Hulled	79

PUBLICATIONS AND PAPERS PREPARED OR PUBLISHED IN 1959-1960

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Tanner, J., E.E. Gamble and W.E. Tossell. Determination of botanical composition of two-component forage mixtures. Can. J. Plant Sci. (in press).

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Staff. Timothy seed production. Ont. Dept. Agr. Pub. 393. 1960.

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