



Extension

UNIVERSITY OF WISCONSIN-MADISON

Red Clover Variety Trials

2024 Report

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Additional data:

Red clover variety trial data from 2010 to 2024 is available at the Crops and Soils website (Division of Extension, UW-Madison).

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INTRODUCTION

Why red clover?

Description and adaptation¹. Red clover (*Trifolium pratense* L.) is a shorter-lived (3-4 years), upright, cool season legume well-adapted to the northern regions of the United States. It is drought tolerant, cold hardy, and highly productive.

Use¹. Red clover is a versatile crop: it can be harvested for hay and silage, as well as used in pastures for grazing. Red clover can be maintained in pasture stands by both overseeding or allowing the plants to naturally reseed.

Forage production in harvested systems². Considering seedling year as year 1, red clover stands will remain productive for 3-4 years. Systems with 3 cuts per growing season at 20% bloom typically maximize biomass production. An additional 4th cut will only contribute 5-8% of total seasonal biomass, so it is often not economical.

Grazed systems. Red clover is also suitable for grazing, and there are methods specifically tailored to select legumes for grazing-related plant stress³. Red clover-grass mixed pastures, with red clover at 10-30%

of the biomass, sustained gains of 2.2 lb/animal/day and 715 lb/acre over a 170 days grazing season under rotational stocking⁴. It is worth noting that red clover, as many other legumes, can cause bloating¹.

Nutritive value². Red clover has great nutritive value. Typical crude protein values are around 20%, while acid detergent fiber (ADF) reaches around 30% and neutral detergent fiber (NDF) around 39%. Like most forages, nutritive value in red clover declines with maturity, and harvesting between bud stage and 20% flowering tends to maximize both production and nutritive values.

Nitrogen biological fixation⁵. All legume plants have the ability to form a symbiotic relationship with rhizobia. In this relationship, the plant provides energy to rhizobia and, in exchange, rhizobia provide N to the plant. Biological N fixation costs a lot of energy to the plant – in fact, it is the most energy-consuming reaction in nature. Therefore, if there is N available from the soil or from fertilizer and manure inputs, legume plants will reduce their energy transfer to rhizobia and use these other N pools instead. In other words, biological N fixation in legumes is inhibited by N inputs.

How much N? Red clover biological N fixation depends on various factors, including soil chemical characteristics, management practices, biomass production, if they are growing alone or in mixtures, etc.⁶ In the Midwest, biological N fixation in red clover was reported to range from 23 to 82 lb N/acre⁷. Another study in central New York indicated biological N fixation in red clover ranging between 22-35 lb N/acre when established with orchardgrass (*Dactylis glomerata* L.) and 35-45 lb N/acre in monoculture over 2 years⁸.

Other benefits⁹. In addition to being a productive forage of great nutritive value, red clover provides additional benefits to the landscape. These include improvements in soil structure and water infiltration, enhancement in soil organic matter and soil microbial activity, and provision of feed resources to pollinators (**Figure 1**).

VARIETY TRIAL DESCRIPTION

Setup

Locations and years. Running variety trials at more than one location over multiple years offers a unique advantage: we have more confidence in how stable the performance of a



Figure 1. Red clover provides feed resources to pollinators. Credit: Heathcliffe Riday.

specific variety is, as well as how adapted it is to a specific soil or climate. For this reason, we run our Red Clover Variety Trial at the U.S. Dairy Forage Research Center (in Prairie Du Sac) and at Marshfield Research Station (WI), as seen in **Figure 2**.

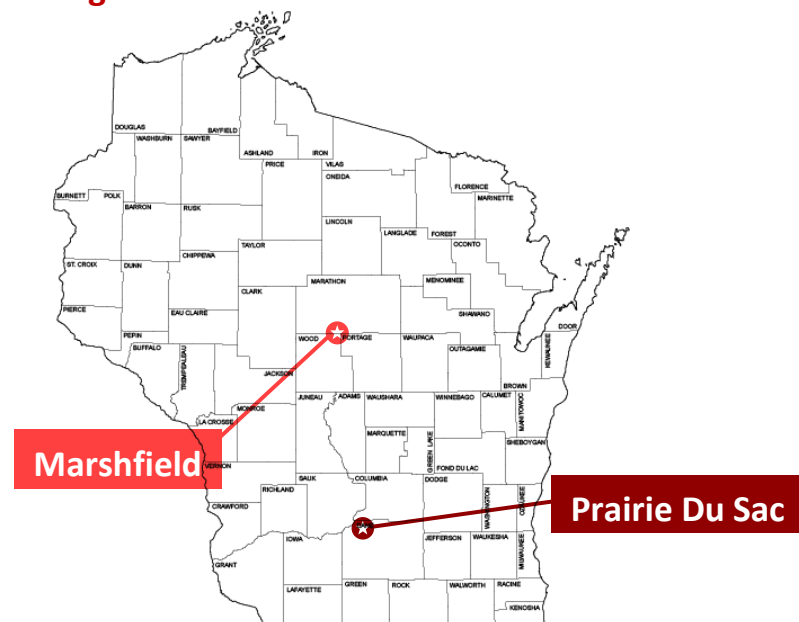


Figure 2. Approximate locations used for Red Clover Variety Trials. Map source: State Cartographer's Office.

Soil characteristics. Soils at Prairie Du Sac are as well drained Richwood Silt Loam (Fine- silty, mixed, superactive, mesic Typic Argiudolls). Soils at Marshfield are less-well drained Whithee Silt Loam (Fine-loamy, mixed, superactive, frigid Aquic Glossudalfs).

Climate. Prairie Du Sac climate is classified as Dfa and Marshfield as Dfb according to the Köppen-Geiger classification. Description is below:

D: “temperature of warmest month greater than or equal to 10 °C, and temperature of coldest month –3 °C or lower”¹⁰

f: “precipitation more evenly distributed throughout year; criteria for neither s nor w satisfied”¹⁰

a: “temperature of warmest month 22 °C or above”¹⁰

b: “temperature of each of four warmest months 10 °C or above but warmest month less than 22 °C”¹⁰

Management. Since our objective is to evaluate varieties compared to one another, we want to reduce other sources of variation in red clover performance. Therefore, management practices are the same for all varieties, and follow recommendations for red clover at Wisconsin:

Seeding rate: 16.7 lbs/acre

Seeding method: drill, 6 in spacing

Plot size: 3 × 20 ft

Experimental design: Randomized complete block design with four replicates per location

Check varieties. We always include one or more “check” varieties in our trials. These checks serve as a point of reference for the new genetic varieties– we want to make sure there is an improvement in our new genetic lines compared to existing (check) varieties. *Marathon* is the main check variety we use.

Measurements

Forage Biomass Production. This is arguably the most important trait in our variety trials. We measure yield over 4 years, with 3 to 4 cuts per growing season depending on weather.

Height. Red clover has an upright growth, so height and biomass are typically closely related (**Figure 3**). We use a visual rating to evaluate relative plant height prior to a cut if obvious height variation among plots is observed. The scale in the relative plant height rating system is: 1, Shortest; 2, Medium; 3, Tallest. We eventually also collect actual height.

Red clover variety trials - established in 2024

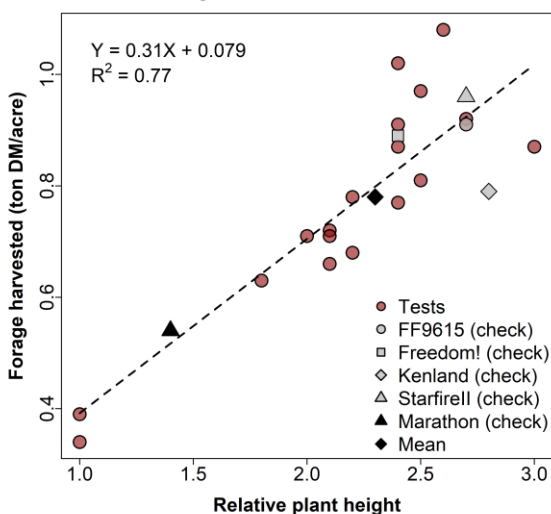


Figure 3. Correlation between forage harvested and height for several red clover varieties and test varieties in their year of establishment. This graph shows the relative plant height (visual rating) explains 77% of the variation in forage mass harvested.

Flowering. As we previously stated, red clover nutritive value decreases with maturity, which can be accessed by estimating percentage flowering. We estimate percentage flowering (Figure 4) prior to a cut if obvious flowering variation among plots is observed.



Figure 4. Red clover flowering can vary among varieties and plots. Credit: Heathcliffe Riday.

Stand (Cover). As a short-lived perennial, establishment and stand persistence (% ground cover) are important indicators for production in red clover. We evaluate stand visually as the percentage cover of red clover relative to the whole plot.

Seedling vigor. We want to make sure our red clover stand establishes well every year. We estimate seedling vigor visually when obvious variation among plots is observed, using a scale from: 1, Worst; to 4, Best.

Foliage Health. Red clover is susceptible to diseases that cause leaf discoloration (purple tips and lighter green-yellow foliage colors), which reduce nutritive value and can diminish stand persistence. We measure foliage appearance as an indicator of stand health – the darkest green healthy looking foliage indicative of the healthiest the stand. We use a scale from: 1, Darkest green; to 5, Lightest green.

How do I interpret the data?

We evaluate our varieties based on the Least Square Difference (LSD). As the name suggests, two varieties are significantly different from each other for a given trait when that difference is greater than the LSD. If the difference is smaller than the LSD

value, two varieties are considered similar. For example:

Variety A = 4.0 ton DM/acre

Variety B = 4.3 ton DM/acre

Variety C = 3.1 ton DM/acre

LSD = 0.6 ton DM/acre

Difference between Variety A and Variety B = 0.3 ton DM/acre.

Since LSD of 0.6 > 0.3, Varieties A and B are considered similar.

Difference between Variety C and Variety A is 0.9 ton DM/acre, and between Variety C and Variety B is 1.2 ton DM/acre. Since LSD of 0.6 < 0.9 and 1.2, we are confident Varieties A and B are superior to Variety C.

2021-2024 CONDITIONS

Climate and weather. Monthly and 30-yr average temperature and precipitation at Sauk City (closest weather station to Prairie Du Sac) and Marshfield are presented in **Figure 5**. We use the 30-yr average as a good representative of what to expect (climate), and compare it to annual data (weather).

For temperature, we can observe there is a lot more variability in the

winter months (December to March) than in the peak of the growing season.

For precipitation, 2023 had a particularly dry summer while 2024 had a very wet growing season overall.

2021-2024 CYCLE

Forage production for a full 4-yr cycle of evaluation (from establishment to termination) at Marshfield are presented in **Table 1**.

Forage production for a full 4-yr cycle of evaluation (from establishment to termination) at Prairie Du Sac is presented in **Figures 6 to 9**. Forage production per cut and per year are presented as columns, and average biomass $\pm$ LSD is represented by the point and error bars. These data and all additional measurements (relative plant height, percentage flowering, stand cover, etc.) are also presented in **Tables 2 to 5**. We can observe that biomass production is greatest over the first 3 years of production, with 4th year biomass reaching ~40% of the annual biomass observed in years 1-3.

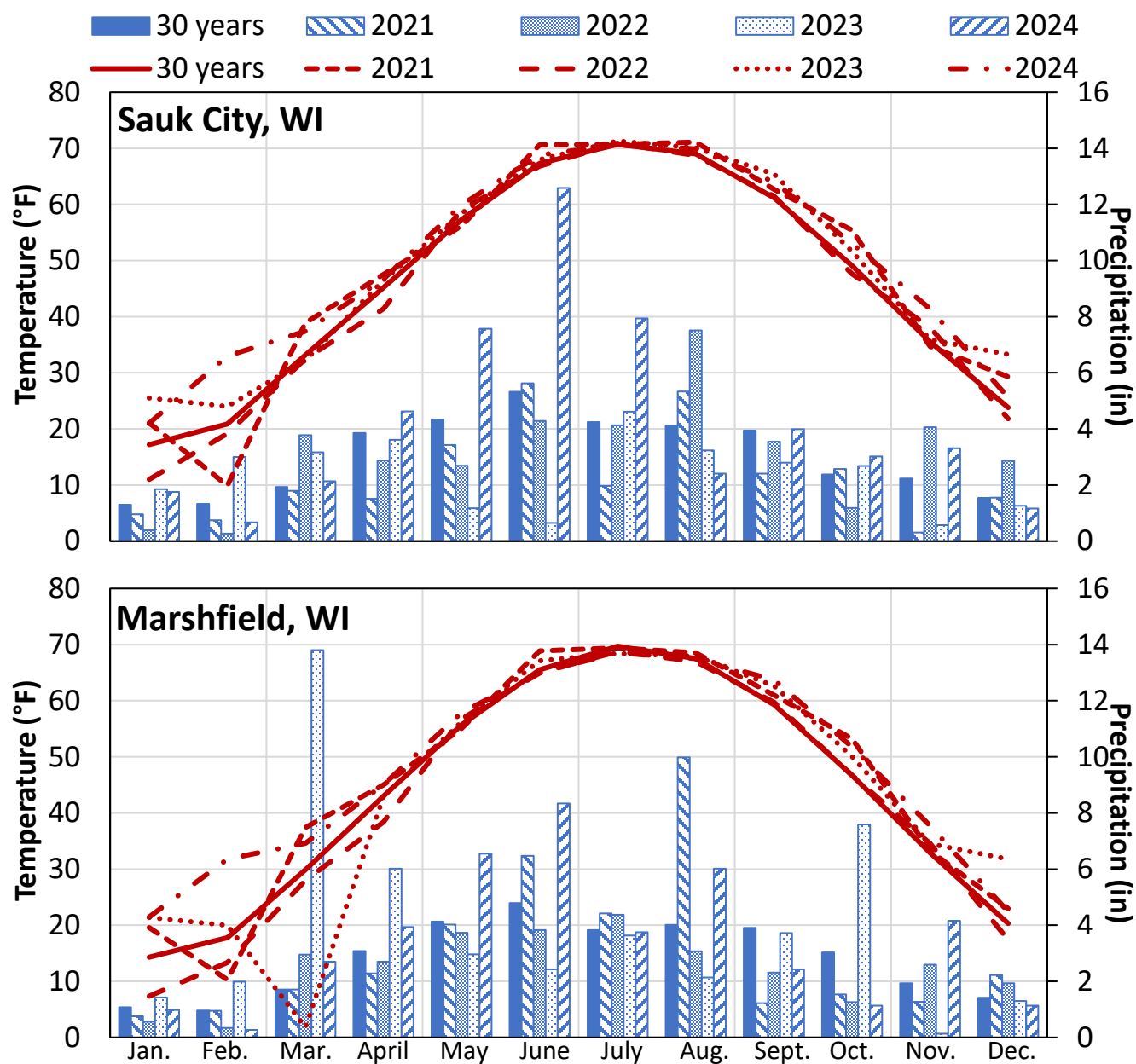


Figure 5. Average temperature and precipitation at variety trial locations. Data from Sauk City is used for Prairie Du Sac.

Forage production per cut (2021-2024)

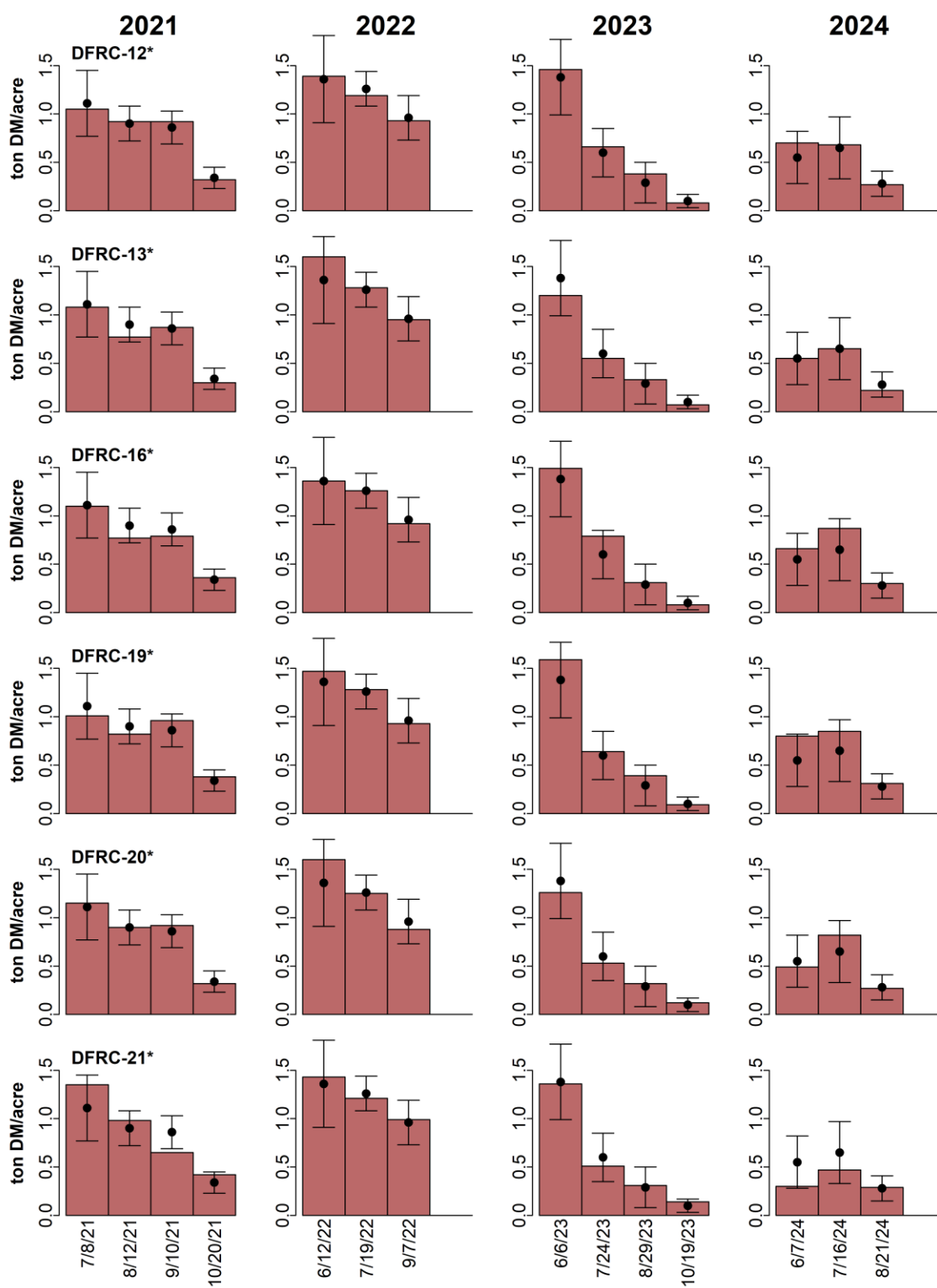


Figure 6. Red clover production per cut over 4-yr at Prairie Du Sac, 2021-2024 cycle. Biomass at each cut is presented as columns, and average biomass $\pm$ LSD is represented by the point and error bars.

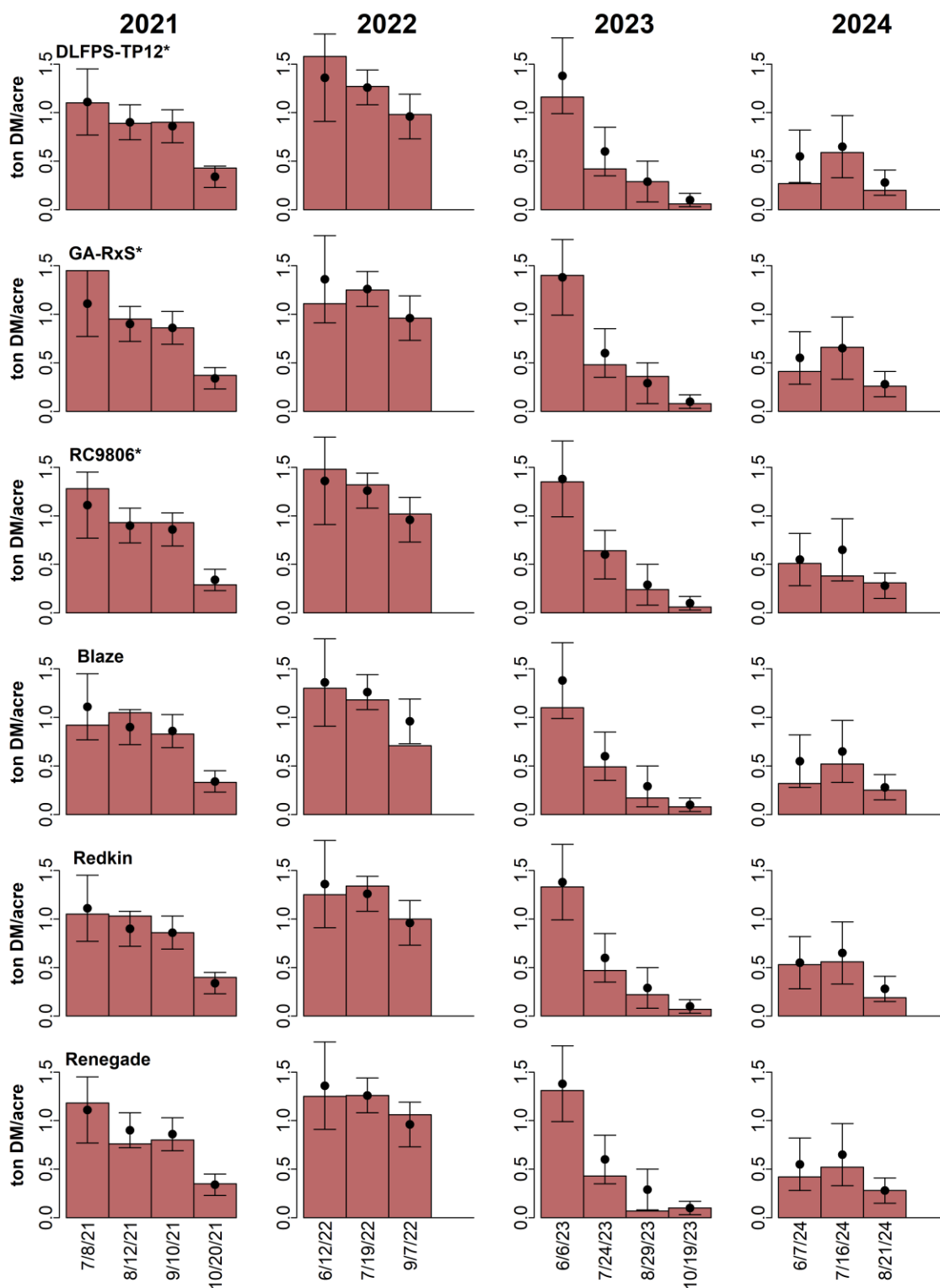


Figure 7. Red clover production per cut over 4-yr at Prairie Du Sac, 2021-2024 cycle. Biomass at each cut is presented as columns, and average biomass $\pm$ LSD is represented by the point and error bars.

Forage production per year (2021-2024)

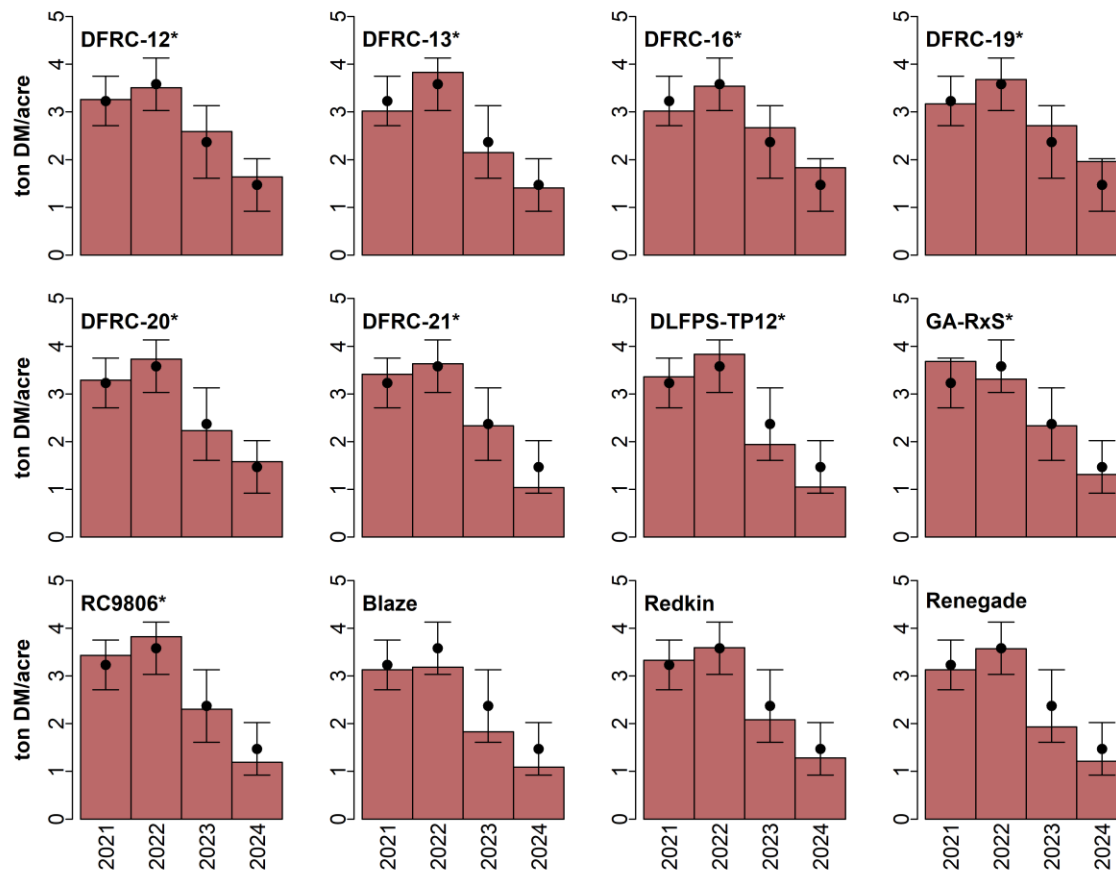


Figure 8. Annual forage production for red clover at Prairie Du Sac, 2021-2024 cycle. Biomass at each year is presented as columns, and average biomass $\pm$ LSD is represented by the point and error bars.

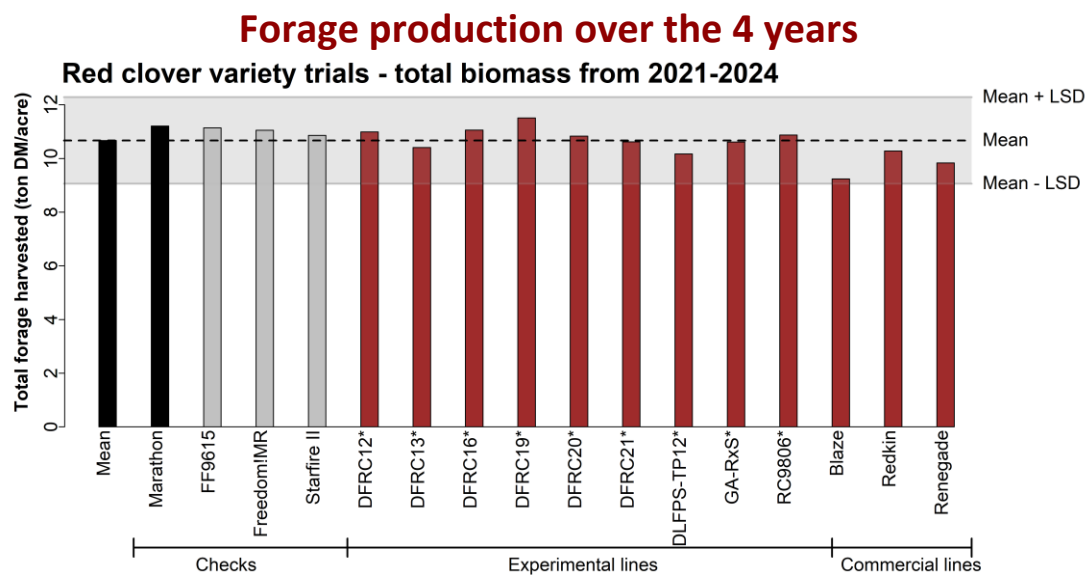


Figure 9. Total forage production for red clover (sum over 4-yr) at Prairie Du Sac.

Table 1. Forage production for red clover varieties at Marshfield, 2021-2024 cycle. Ordered from least to most productive over the 4-yr period.

	2021			2022					2023				2024		2021-2024	
Marshfield	8/19	10/5	Total	6/17	7/18	8/16	9/15	Total	7/18	8/16	9/15	Total	6/10	Total	Total	Yield % of Marathon
	ton DM/acre			ton DM/acre					ton DM/acre				ton DM/acre		ton DM/acre	
DFRC13*	1.2	1.04	2.24	1.15	1.29	0.77	0.33	3.53	0.57	0.52	0.16	1.25	1.73	1.73	8.74	96.3
GA-RxS*	0.98	0.93	1.91	1.39	1.15	0.65	0.34	3.53	0.43	0.49	0.17	1.09	2.35	2.35	8.87	97.7
DFRC12*	1.03	1.04	2.07	1.25	1.26	0.78	0.33	3.61	0.54	0.48	0.14	1.16	2.05	2.05	8.9	98
Marathon (Check)	1.09	0.94	2.03	1.17	1.23	0.67	0.32	3.4	0.46	0.44	0.21	1.11	2.55	2.55	9.08	100
FF 9615 (Check)	0.89	0.87	1.76	1.17	1.21	0.84	0.36	3.57	0.55	0.63	0.25	1.43	2.33	2.33	9.09	100.1
Starfire II (Check)	0.96	0.73	1.69	1.25	1.46	0.84	0.36	3.9	0.53	0.55	0.22	1.3	2.22	2.22	9.1	100.2
DFRC19*	1.11	0.95	2.06	1.44	1.29	0.75	0.32	3.8	0.52	0.45	0.23	1.2	2.08	2.08	9.14	100.7
DFRC20*	1.06	0.88	1.95	1.28	1.21	0.77	0.31	3.57	0.52	0.51	0.2	1.23	2.56	2.56	9.3	102.4
FreedomIMR (Check)	1.06	0.93	1.99	1.4	1.38	0.75	0.34	3.87	0.59	0.48	0.2	1.27	2.31	2.31	9.43	103.9
DFRC16*	1.08	0.97	2.05	1.26	1.33	0.84	0.36	3.78	0.58	0.54	0.21	1.32	2.42	2.42	9.57	105.5
DFRC21*	1.2	1.06	2.26	1.44	1.34	0.67	0.37	3.82	0.47	0.46	0.14	1.06	2.54	2.54	9.68	106.6
Desire	1.13	1.1	2.24	1.47	1.43	0.75	0.38	4.03	0.64	0.57	0.22	1.43	2.22	2.22	9.92	109.3
Mean	1.07	0.95	2.02	1.3	1.3	0.76	0.34	3.7	0.53	0.51	0.19	1.24	2.28	2.28	9.23	
LSD (0.05)	0.19	0.25	0.41	0.31	0.17	0.12	0.08	0.51	0.11	0.13	0.09	0.27	0.61	0.61	1.21	
CV%	12.7	17.8	14.2	16.6	9	10.9	15.3	9.5	14.5	17.6	32.5	15.2	18.3	18.3	9.1	

* Experimental Varieties

Table 2. Forage production for red clover varieties at Prairie Du Sac, 2021-2024 cycle. Ordered from least to most productive over the 4-yr period.

	2021					2022				2023					2024				2021-2024
Prairie du Sac	7/8	8/12	9/10	10/20	Total	6/12	7/19	9/7	Total	6/6	7/24	8/29	10/19	Total	6/7	7/16	8/21	Total	Total
	ton DM/acre					ton DM/acre				ton DM/acre					ton DM/acre				ton DM/acre
Blaze	0.92	1.05	0.83	0.33	3.13	1.3	1.18	0.71	3.18	1.1	0.49	0.17	0.08	1.83	0.32	0.52	0.25	1.09	9.24
Renegade	1.18	0.76	0.8	0.35	3.13	1.25	1.26	1.06	3.57	1.31	0.43	0.07	0.1	1.93	0.42	0.52	0.28	1.21	9.83
DLFPS-TP12*	1.1	0.89	0.9	0.43	3.36	1.58	1.27	0.98	3.83	1.16	0.42	0.29	0.06	1.94	0.27	0.59	0.2	1.05	10.17
Redkin	1.05	1.03	0.86	0.4	3.33	1.25	1.34	1	3.59	1.33	0.47	0.22	0.07	2.08	0.53	0.56	0.19	1.28	10.28
DFRC13*	1.08	0.77	0.87	0.3	3.02	1.6	1.28	0.95	3.83	1.2	0.55	0.33	0.07	2.15	0.55	0.65	0.22	1.41	10.41
GA-RxS*	1.45	0.95	0.86	0.37	3.68	1.11	1.25	0.96	3.31	1.4	0.48	0.36	0.08	2.33	0.41	0.66	0.26	1.31	10.61
DFRC21*	1.35	0.98	0.65	0.42	3.41	1.43	1.21	0.99	3.63	1.36	0.51	0.31	0.14	2.33	0.3	0.47	0.29	1.04	10.62
DFRC20*	1.15	0.9	0.92	0.32	3.29	1.6	1.25	0.88	3.73	1.26	0.53	0.32	0.12	2.23	0.49	0.82	0.27	1.58	10.83
Starfire II (Check)	1.05	0.78	0.92	0.34	3.09	1.38	1.25	0.95	3.57	1.49	0.62	0.33	0.08	2.52	0.67	0.72	0.28	1.68	10.86
RC9806*	1.28	0.93	0.93	0.29	3.43	1.48	1.32	1.02	3.82	1.35	0.64	0.24	0.06	2.3	0.51	0.38	0.31	1.19	10.87
DFRC12*	1.05	0.92	0.92	0.32	3.26	1.39	1.19	0.93	3.51	1.46	0.66	0.38	0.08	2.59	0.7	0.68	0.27	1.64	10.99
Freedom!MR (Check)	0.99	0.99	0.89	0.32	3.19	1.1	1.41	1.05	3.56	1.46	0.67	0.35	0.15	2.63	0.6	0.7	0.37	1.67	11.05
DFRC16*	1.1	0.77	0.79	0.36	3.02	1.36	1.26	0.92	3.54	1.49	0.79	0.31	0.08	2.67	0.66	0.87	0.3	1.83	11.06
FF 9615 (Check)	0.94	0.95	0.86	0.28	3.08	1.18	1.17	1.03	3.38	1.6	0.8	0.31	0.14	2.87	0.74	0.71	0.38	1.82	11.14
Marathon (Check)	1.08	0.91	0.88	0.28	3.14	1.3	1.26	1.03	3.6	1.52	0.83	0.38	0.14	2.88	0.83	0.78	0.23	1.83	11.21
DFRC19*	1.01	0.82	0.96	0.38	3.17	1.47	1.28	0.93	3.68	1.59	0.64	0.39	0.09	2.71	0.8	0.85	0.31	1.96	11.51
Mean	1.11	0.9	0.86	0.34	3.23	1.36	1.26	0.96	3.58	1.38	0.6	0.29	0.1	2.37	0.55	0.65	0.28	1.47	10.67
LSD (0.05)	0.34	0.18	0.17	0.11	0.52	0.45	0.18	0.23	0.55	0.39	0.25	0.21	0.07	0.76	0.27	0.32	0.13	0.55	1.61
CV%	17.8	11.4	11.5	18.6	9.3	19.1	8.3	14	8.9	16.4	23.6	40.6	41.6	18.1	28	27.5	25.9	20.8	8.5

* Experimental Varieties

Table 3. Stand cover for red clover varieties at Prairie Du Sac, 2021-2024 cycle. Ordered from least to most productive over the 4-yr period.

	2021	2022	2023				2024		
Prairie du Sac	Initial†	7-Sep	6-Jun	24-Jul	29-Aug	19-Oct	7-Jun	16-Jul	21-Aug
	Stand %	Stand %	Stand %				Stand %		
Blaze	89	67	53	50	40	35	30	43	12
Renegade	95	92	70	65	48	33	13	8	5
DLFPS-TP12*	92	84	60	30	23	13	6	4	1
Redkin	98	88	63	68	42	28	23	30	5
DFRC13*	96	86	76	40	53	47	15	9	8
GA-RxS*	96	90	75	74	55	45	21	13	3
DFRC21*	93	86	74	70	53	43	6	9	6
DFRC20*	91	80	72	47	40	33	20	12	4
Starfire II (Check)	94	82	78	79	67	55	48	38	13
RC9806*	91	65	87	75	75	45	15	20	8
DFRC12*	95	89	83	80	73	68	40	78	15
Freedom!MR (Check)	96	92	78	83	75	52	45	19	12
DFRC16*	95	88	80	67	78	78	52	60	15
FF 9615 (Check)	95	74	73	85	63	68	35	30	15
Marathon (Check)	93	70	84	79	73	80	48	48	28
DFRC19*	95	83	86	83	77	68	62	73	17
Mean	94	82	74	67	58	49	30	31	10
LSD (0.05)	6	18	29	43	54	47	47	47	20
CV%	3.6	13	22.4	36.4	53.5	54.4	87.8	86.5	106.9

* Experimental Varieties

† Average of % stand ratings taken 7/21/21, 8/11/21, 10/20/21, and 7/19/22

Table 4. Relative plant height for red clover varieties at Prairie Du Sac, 2021-2024 cycle. Ordered from least to most productive over the 4-yr period.

	2021	2022		2023	2024	
Prairie du Sac	8/12	7/19	9/7	6/6	7/16	Average
	Relative Plant Height‡	Relative Plant Height‡		Relative Plant Height‡	Relative Plant Height‡	Relative Plant Height‡
Blaze	2.9	2	1.6	1.4	1.7	1.9
Renegade	2.2	1.8	1.7	1.1	1.7	1.7
DLFPS-TP12*	2.3	2.4	1.9	1.5	1.1	1.9
Redkin	2.7	2.3	2.3	2.1	1.7	2.2
DFRC13*	1.8	1.8	1.8	1.5	1.3	1.6
GA-RxS*	2.3	2.2	2.2	1.5	1.7	2
DFRC21*	1.9	1.9	2	1.5	1.3	1.8
DFRC20*	2.6	1.8	1.7	1.9	1.7	1.9
Starfire II (Check)	2	2	1.8	1.9	2.1	2
RC9806*	2.3	2.2	1.8	1.7	1.7	2
DFRC12*	2.5	1.8	1.6	2.1	1.9	2
Freedom!MR (Check)	2.9	2.3	1.8	1.5	1.9	2.1
DFRC16*	2	2	1.7	2.3	2.6	2.1
FF 9615 (Check)	2.3	2	1.9	1.9	2.3	2.1
Marathon (Check)	2.1	1.8	1.8	1.7	2.6	2
DFRC19*	2.5	2.3	1.9	2.2	2.6	2.3
Mean	2.3	2	1.8	1.8	1.9	2
LSD (0.05)	0.7	0.9	0.8	1.3	1	0.6
CV%	17.3	24.6	24.4	38.5	29.8	18.1

* Experimental Varieties

‡ Relative Plant Height Visual Score: 1 - Shortest; 2 - Medium; and 3 - Tallest

Table 5. Flowering for red clover varieties at Prairie Du Sac, 2021-2024 cycle. Ordered from least to most productive over the 4-yr period.

	2021	2022			2023		2024	
Prairie du Sac	12-Aug	12-Jun	19-Jul	7-Sep	6-Jun	7/24††	16-Jul	
	Flower %	Flower %			Flower%		Flower %	Flower average %
Blaze	30	17	8	60	83	100	93	56
Renegade	10	45	25	90	85	108	95	66
DLFPS-TP12*	37	75	68	94	93	115	93	82
Redkin	22	40	30	80	87	107	87	65
DFRC13*	2	37	12	63	52	102	92	51
GA-RxS*	8	32	53	85	58	110	93	63
DFRC21*	2	60	18	87	80	110	96	68
DFRC20*	20	20	7	47	78	97	90	51
Starfire II (Check)	4	5	5	47	50	95	87	42
RC9806*	7	63	25	82	65	95	78	56
DFRC12*	12	17	20	70	48	98	48	45
Freedom!MR (Check)	25	28	27	81	77	113	92	63
DFRC16*	6	9	4	40	78	95	87	46
FF 9615 (Check)	17	6	8	65	65	100	85	50
Marathon (Check)	8	23	7	53	73	98	93	48
DFRC19*	8	3	4	40	62	97	70	40
Mean	14	30	20	68	71	102	86	56
LSD (0.05)	20	39	33	25	34	16	25	19
CV%	84.2	75.9	95.2	21.9	26.4	8.9	16.6	19.3

* Experimental Varieties

†† Stands at time of evaluation were very mature. %Flower ratings above 100% represent 100% flower plus % of brown flowers (or more mature flowers)

2022-2024 CYCLE

We have three years of data for this cycle, with one more year for data

collection planned for 2025. Data from the 2022-2024 red clover variety trial is presented in **Tables 6 to 10**.

Table 6. Forage production for red clover varieties at Marshfield, 2022-2024 cycle. Ordered from least to most productive over the 3-yr period.

	2023				2024					2023-2024	
Marshfield	7/7/23	8/4/23	9/5/23	Total	6/10/24	7/12/24	8/7/24	9/9/24	Total	Total	Yield % of Marathon
	ton DM/acre				ton DM/acre				ton DM/acre	ton DM/acre	
Ruby Red	0.82	0.82	0.42	2.05	1.89	0.58	0.92	0.66	4.06	6.11	73.5
F4172*	0.74	1.13	0.52	2.38	1.91	0.85	0.95	0.74	4.45	6.83	82.3
F4168*	0.90	1.19	0.51	2.59	1.80	0.85	0.92	0.71	4.28	6.87	82.7
BARTPV23*	0.92	1.09	0.51	2.52	1.97	0.83	0.96	0.74	4.49	7.01	84.4
Starfire II (Check)	0.90	1.22	0.52	2.64	1.89	0.83	0.98	0.73	4.43	7.07	85.2
DFRC26*	0.82	1.25	0.53	2.59	1.94	0.79	1.04	0.78	4.54	7.14	85.9
DFRC13*	0.82	1.12	0.47	2.41	1.96	0.87	1.19	0.78	4.80	7.21	86.9
L20-LARC-1*	0.93	1.21	0.57	2.71	2.07	0.86	1.00	0.63	4.56	7.27	87.5
DFRC27*	0.99	1.19	0.51	2.68	1.88	0.87	1.10	0.74	4.59	7.28	87.6
FreedomIMR	0.95	1.12	0.52	2.59	1.89	1.01	1.04	0.77	4.71	7.29	87.9
DFRC25*	1.01	1.25	0.57	2.84	2.01	0.84	1.01	0.73	4.59	7.43	89.4
BY-RC31*	1.04	1.20	0.58	2.82	2.06	0.89	1.02	0.76	4.72	7.54	90.8
GATP1403*	1.00	1.27	0.61	2.88	1.94	0.98	1.01	0.74	4.68	7.56	91.0
F4167*	1.05	1.29	0.61	2.95	1.95	0.79	1.09	0.77	4.61	7.56	91.1
F4164*	0.95	1.33	0.60	2.88	2.11	0.91	1.07	0.73	4.82	7.70	92.7
F4166*	1.10	1.17	0.62	2.89	2.03	1.05	1.09	0.79	4.96	7.85	94.6
DFRC15*	1.05	1.27	0.56	2.88	2.07	0.98	1.09	0.86	5.00	7.87	94.8
DFRC12*	1.10	1.25	0.58	2.93	2.15	0.90	1.06	0.86	4.96	7.89	95.0
FF 9615 (Check)	1.13	1.42	0.76	3.31	1.95	0.83	1.16	0.73	4.67	7.98	96.1
Marathon (Check)	1.07	1.42	0.68	3.17	2.11	1.04	1.15	0.84	5.14	8.30	100.0
Mean	0.96	1.21	0.56	2.73	1.98	0.88	1.04	0.76	4.65	7.39	
LSD (0.05)	0.28	0.26	0.16	0.57	0.29	0.24	0.14	0.12	0.56	0.94	
CV%	20.2	14.9	19.5	14.8	10.4	19.0	9.7	11.6	8.5	9.0	

* Experimental Varieties

Table 7. Forage production for red clover varieties at Prairie Du Sac, 2022-2024 cycle. Ordered from least to most productive over the 3-yr period.

	2022				2023					2024					2023-2024	
Prairie du Sac	7/2	9/6	10/19	Total	6/7	7/21	8/28	10/18	Total	6/6	7/15	8/13	9/25	Total	Total	Yield% of Marathon
	ton DM/acre				ton DM/acre					ton DM/acre					ton DM/acre	
F4167*	1.26	1.33	0.24	2.83	2.10	1.29	0.66	0.38	4.42	0.96	0.94	0.14	0.19	2.23	9.48	85.1
F4166*	1.19	1.42	0.29	2.91	1.94	1.39	0.62	0.33	4.27	0.86	1.09	0.14	0.23	2.32	9.49	85.2
GATP1403*	1.47	1.43	0.27	2.79	2.02	1.48	0.70	0.33	4.53	0.83	1.01	0.13	0.33	2.29	9.61	86.2
Marathon (Check)	1.33	1.44	0.21	2.98	2.21	1.36	0.61	0.42	4.60	0.78	0.98	0.23	0.26	2.25	9.82	88.2
Renegade	1.47	1.49	0.39	3.35	2.07	1.53	0.76	0.33	4.69	0.44	0.96	0.14	0.25	1.80	9.83	88.3
Redkin	1.26	1.51	0.20	2.97	2.16	1.36	0.61	0.35	4.48	0.90	1.05	0.21	0.33	2.49	9.93	89.1
Medallion	1.21	1.44	0.31	2.95	2.18	1.59	0.70	0.35	4.82	0.80	1.13	0.18	0.20	2.29	10.07	90.4
F4172*	1.33	1.29	0.19	2.81	2.15	1.54	0.75	0.32	4.76	1.06	1.10	0.36	0.20	2.72	10.28	92.3
DFRC27*	1.40	1.28	0.35	3.03	2.06	1.31	0.76	0.42	4.54	0.89	1.27	0.42	0.25	2.82	10.39	93.2
F4164*	1.35	1.38	0.31	3.03	2.16	1.42	0.76	0.39	4.72	0.95	1.10	0.32	0.28	2.64	10.39	93.3
Gallant	1.10	1.26	0.29	3.02	1.99	1.52	0.63	0.40	4.53	1.18	1.19	0.24	0.31	2.93	10.48	94.1
F4168*	1.44	1.32	0.34	3.09	2.20	1.54	0.72	0.38	4.83	0.91	1.12	0.28	0.33	2.64	10.56	94.8
FF 9615 (Check)	1.59	1.35	0.32	3.26	2.03	1.55	0.76	0.19	4.52	1.09	1.17	0.26	0.28	2.80	10.58	95.0
DFRC26*	1.20	1.43	0.31	2.94	2.01	1.60	0.78	0.44	4.81	0.97	1.28	0.33	0.26	2.84	10.60	95.1
DFRC25*	1.37	1.45	0.35	3.17	2.01	1.51	0.71	0.44	4.65	0.86	1.25	0.37	0.32	2.79	10.62	95.3
Ruby Red	1.30	1.44	0.39	3.13	1.81	1.63	0.80	0.44	4.67	1.05	1.23	0.26	0.31	2.84	10.64	95.5
DFRC12*	1.20	1.49	0.23	2.92	2.14	1.57	0.67	0.29	4.68	1.16	1.25	0.35	0.30	3.06	10.66	95.7
Freedom!MR	1.46	1.45	0.32	3.23	2.17	1.59	0.69	0.35	4.80	1.13	1.22	0.31	0.23	2.89	10.91	98.0
Evolve	1.43	1.46	0.34	3.23	2.16	1.57	0.69	0.50	4.92	1.06	1.08	0.32	0.33	2.78	10.92	98.0
DFRC15*	1.38	1.38	0.34	3.10	2.04	1.60	0.63	0.40	4.67	1.19	1.43	0.42	0.25	3.30	11.06	99.3
BY-RC31*	1.44	1.41	0.35	3.19	2.14	1.53	0.70	0.40	4.78	1.25	1.29	0.33	0.30	3.17	11.14	100.0
L20-LARC-1*	1.34	1.48	0.35	3.17	2.12	1.64	0.73	0.39	4.87	1.15	1.38	0.33	0.34	3.20	11.24	100.9
Starfire II (Check)	1.34	1.58	0.36	3.29	2.14	1.64	0.68	0.44	4.90	0.96	1.36	0.42	0.37	3.10	11.29	101.3
BARTPV23*	1.36	1.62	0.41	3.39	2.28	1.73	0.78	0.51	5.29	0.83	1.17	0.30	0.43	2.72	11.40	102.3
Mean	1.34	1.42	0.31	3.07	2.09	1.52	0.70	0.38	4.70	0.97	1.17	0.28	0.29	2.70	10.47	
LSD (0.05)	0.28	0.22	0.13	0.44	0.31	0.18	0.17	0.16	0.49	0.34	0.26	0.13	0.13	0.49	0.75	
CV%	14.9	10.9	29.7	10.1	10.3	8.4	17.2	30.1	7.3	24.5	15.9	33.7	31.4	12.8	5.0	

* Experimental Varieties

Table 8. Seedling vigor and stand cover for red clover varieties at Prairie Du Sac, 2022-2024 cycle. Ordered from least to most productive over the 3-yr period.

	2022	2022		2023	2024			
Prairie du Sac	5/22	7/2	10/19	10/18	6/6	7/15	8/13	9/24
	Seedling vigor†	Stand %		Stand %	Stand %			
F4167*	2.3	61	78	89	76	53	16	16
F4166*	2.5	75	84	87	58	39	31	24
GATP1403*	2.1	74	84	89	63	54	44	56
Marathon (Check)	1.6	53	69	79	39	23	11	8
Renegade	3.0	80	86	84	16	30	6	4
Redkin	0.8	34	53	78	67	46	35	45
Medallion	3.0	74	88	83	59	55	31	24
F4172*	3.0	68	88	97	96	88	79	69
DFRC27*	2.8	72	93	92	81	93	83	88
F4164*	3.1	79	95	92	72	64	70	68
Gallant	2.3	80	89	96	97	91	68	69
F4168*	3.0	79	88	91	83	79	71	80
FF 9615 (Check)	3.3	83	90	93	91	89	75	74
DFRC26*	2.4	84	88	94	81	76	70	69
DFRC25*	1.6	85	86	93	59	71	65	76
Ruby Red	2.1	80	95	95	67	68	53	63
DFRC12*	2.1	70	85	92	91	76	64	59
Freedom!MR	3.1	76	91	90	82	85	69	81
Evolve	2.8	73	86	96	78	73	56	56
DFRC15*	2.5	76	87	94	87	80	78	85
BY-RC31*	2.6	73	86	93	87	75	70	69
L20-LARC-1*	2.8	83	91	96	85	89	80	75
Starfire II (Check)	2.4	70	85	95	86	79	76	73
BARTPV23*	3.3	83	95	97	76	74	66	79
Mean	2.5	73	86	91	74	69	57	59
LSD (0.05)	1.0	18	12	8	31	28	20	24
CV%	28.6	17.8	9.8	6.6	29.3	28.7	25.1	29.4

* Experimental Varieties

† Relative visual seedling vigor rating: 1 - Worst, 4 - Best

Table 9. Relative plant height, plant height, and foliage color for red clover varieties at Prairie Du Sac, 2022-2024 cycle. Ordered from least to most productive over the 3-yr period.

Prairie du Sac	2022		2023		2022-2023	2023		2023
	Relative Plant Height‡		Relative Plant Height		Relative Plant Height	Plant Height		Foliage Color‡‡
	7/10	9/6	7/21	8/28	Average††	6/7	7/10	8/28
	visual score		visual score		visual score	cm	cm	
F4167*	1.3	1.6	1.2	1.6	1.3	73	33	4.3
F4166*	1.4	2.2	1.4	1.2	1.6	76	34	3.8
GATP1403*	1.5	2.3	2.3	1.8	1.9	77	35	2.8
Marathon (Check)	1.8	2.0	1.7	1.5	1.8	78	37	1.5
Renegade	2.3	2.0	2.8	2.8	2.6	81	46	4.3
Redkin	1.4	2.0	1.8	1.5	1.8	80	33	3.0
Medallion	1.7	2.5	2.6	2.2	2.3	80	38	4.3
F4172*	1.5	1.9	2.3	2.4	2.0	78	35	1.0
DFRC27*	1.8	2.0	2.1	1.9	1.9	78	33	1.3
F4164*	1.9	2.1	1.8	1.8	2.0	79	37	1.5
Gallant	2.1	1.9	2.1	1.9	2.1	78	38	2.0
F4168*	2.0	2.3	1.8	2.3	2.0	76	31	3.5
FF 9615 (Check)	1.7	1.9	1.7	2.1	2.0	80	32	1.0
DFRC26*	1.6	2.3	2.2	1.8	1.9	76	37	1.3
DFRC25*	2.0	2.6	1.6	2.0	2.1	78	33	2.5
Ruby Red	1.9	2.4	2.3	2.0	1.9	73	39	2.3
DFRC12*	1.6	2.0	2.2	1.9	2.0	79	35	1.8
Freedom!MR	1.9	2.3	2.5	2.6	2.3	79	38	3.0
Evolve	1.6	1.9	1.9	1.6	1.7	76	33	2.5
DFRC15*	1.5	1.9	2.0	1.8	1.9	79	34	2.5
BY-RC31*	2.0	2.0	2.4	1.9	2.1	78	36	2.0
L20-LARC-1*	1.6	2.3	2.3	2.1	1.8	73	37	1.8
Starfire II (Check)	1.8	2.2	2.0	1.9	2.1	79	36	1.5
BARTPV23*	1.9	2.4	2.4	2.2	2.0	75	38	2.3
Mean	1.8	2.1	2.1	2.0	2.0	77	36	2.4
LSD (0.05)	0.6	0.8	0.4	0.6	0.5	6	5	1.1
CV%	22.6	27.3	13.0	22.3	16.4	5.9	9.6	32.5

* Experimental Varieties; † Relative visual seedling vigor rating: 1 - Worst, 4 – Best; †† Observations 7/10/23 and 7/23/23 weighted as one observation; ‡ Relative Plant Height Visual Score: 1 - Shortest; 2 - Medium; and 3 – Tallest. For average height 6/7/23 and 7/10/23 range transformed $([hgt-73]/8*2)+1$ and $([hgt-31]/15*2)+1$; observations 7/10/23 and 7/23/23 weighted as one observation; ‡‡ Relative foliage color: 1 - Darkest green; 5 - Lightest green.

Table 10. Flowering for red clover varieties at Prairie Du Sac, 2022-2024 cycle. Ordered from least to most productive over the 3-yr period.

	2022	2023				2024				2022-2024
Prairie du Sac	7/20	6/7	7/10	7/21	8/28	6/6	7/15	8/13	9/24	%Flower Average††
	Flower %	Flower %				Flower %				Flower %
F4167*	28	69	3	65	10	55	56	42	95	49
F4166*	25	79	4	48	15	43	79	49	95	51
GATP1403*	25	59	10	83	18	50	79	37	71	48
Marathon (Check)	18	44	5	38	10	33	61	31	91	39
Renegade	53	68	81	100	68	28	95	68	88	70
Redkin	20	79	23	76	23	63	40	40	89	50
Medallion	44	54	20	100	44	75	93	58	94	65
F4172*	24	23	3	21	28	14	8	36	86	29
DFRC27*	23	10	3	5	9	14	9	38	76	23
F4164*	40	50	3	14	11	35	19	46	79	36
Gallant	37	46	7	76	16	33	26	40	89	41
F4168*	47	48	11	61	20	45	39	39	93	46
FF 9615 (Check)	20	11	3	24	11	20	11	14	66	21
DFRC26*	22	33	4	15	9	25	30	31	66	28
DFRC25*	46	35	3	14	14	33	31	30	74	34
Ruby Red	49	43	10	70	14	38	43	38	85	43
DFRC12*	25	16	8	43	15	15	30	38	93	32
Freedom!MR	26	59	30	94	53	48	68	49	89	56
Evolve	16	38	5	43	13	28	31	33	90	34
DFRC15*	19	38	4	14	11	25	10	29	75	27
BY-RC31*	42	53	7	81	11	35	46	15	79	41
L20-LARC-1*	23	33	6	69	13	43	30	21	81	35
Starfire II (Check)	32	70	9	74	13	38	33	28	90	43
BARTPV23*	41	43	11	73	14	45	55	31	85	44
Mean	31	46	11	54	19	36	42	37	84	41
LSD (0.05)	31	25	11	17	14	17	35	25	19	9
CV%	71.1	38.7	69.7	21.9	53.2	33.4	57.8	48.1	16.1	15.8

* Experimental Varieties

†† Observations 7/10/23 and 7/23/23 weighed as one observation

2023-2024 CYCLE

We have two years of data for this cycle, with two more years for data

collection planned (2025 and 2026). Data from the 2023-2024 red clover variety trial is presented in **Tables 11** to **14**.

Table 11. Forage production for red clover varieties at Marshfield, 2023-2024 cycle. Ordered from least to most productive over the 2-yr period.

	2023		2024					2023-2024	
Marshfield	9/5	Total	6/10	7/12	8/7	9/9	Total	Total	Yield % of Marathon
	ton DM/acre		ton DM/acre					ton DM/acre	
Marathon (Check)	1.33	1.33	2.61	0.82	1.27	0.82	5.52	6.85	100.0
DFRC28*	1.16	1.16	2.19	0.94	1.43	0.89	5.45	6.61	96.5
Freedom!MR (Check)	1.10	1.10	2.32	0.86	1.34	0.93	5.45	6.55	95.6
FF 9615 (Check)	1.28	1.28	2.09	0.86	1.36	0.94	5.25	6.54	95.4
Starfire II (Check)	1.26	1.26	2.11	0.90	1.37	0.88	5.26	6.52	95.2
Kenland (Check)	1.15	1.15	2.29	0.80	1.34	0.89	5.32	6.47	94.5
C/W-202*	1.13	1.13	2.09	0.90	1.38	0.89	5.26	6.39	93.3
DFRC30*	1.22	1.22	1.96	0.97	1.30	0.87	5.10	6.32	92.3
Freedom! (Check)	1.15	1.15	2.18	0.80	1.26	0.89	5.13	6.28	91.6
C/W-040040*	1.28	1.28	2.15	0.69	1.22	0.95	5.00	6.27	91.6
DFRC21*	1.07	1.07	2.11	0.95	1.33	0.77	5.15	6.22	90.9
DFRC29*	1.26	1.26	1.98	0.87	1.21	0.90	4.96	6.22	90.8
Mean	1.20	1.20	2.17	0.86	1.32	0.88	5.24	6.44	
LSD (0.05)	0.28	0.28	0.52	0.17	0.14	0.18	0.67	0.73	
CV%	16.3	16.3	16.6	13.7	7.4	14.1	8.9	7.8	

* Experimental Varieties

Table 12. Forage production for red clover varieties at Prairie Du Sac, 2023-2024 cycle. Ordered from least to most productive over the 2-yr period.

	2023				2024					2023-2024	
Prairie du Sac	7/28	8/29	10/18	Total	5/30	7/10	8/12	9/23	Total	Total	Yield % of Marathon
	ton DM/acre				ton DM/acre					ton DM/acre	
Marathon (Check)	1.5	0.4	0.3	2.1	1.5	1.1	0.6	0.5	3.6	5.70	100.0
Redkin	1.34	0.28	0.27	1.89	1.68	1.30	0.39	0.49	3.86	5.75	100.8
C/W-202*	1.35	0.39	0.54	2.28	1.48	1.04	0.47	0.51	3.50	5.78	101.4
DFRC30*	1.2	0.4	0.4	2.1	1.5	1.0	0.6	0.5	3.7	5.8	101.7
Starfire II (Check)	1.43	0.52	0.46	2.41	1.31	1.14	0.61	0.44	3.5	5.91	103.6
FF 9615 (Check)	1.34	0.53	0.53	2.40	1.43	1.17	0.54	0.44	3.6	5.97	104.8
Medallion	1.45	0.34	0.53	2.32	1.77	0.97	0.59	0.41	3.7	6.05	106.2
DFRC21*	1.53	0.45	0.39	2.37	1.58	1.04	0.54	0.56	3.7	6.09	106.8
Renegade	1.46	0.52	0.57	2.55	1.46	1.21	0.46	0.43	3.6	6.11	107.1
DFRC28*	1.49	0.42	0.38	2.28	1.45	1.11	0.73	0.56	3.8	6.13	107.5
Kenland (Check)	1.43	0.53	0.66	2.61	1.21	1.15	0.79	0.50	3.6	6.26	109.8
DFRC29*	1.67	0.38	0.41	2.45	1.73	0.99	0.67	0.45	3.8	6.29	110.3
Freedom! (Check)	1.54	0.63	0.48	2.65	1.43	1.19	0.59	0.55	3.8	6.41	112.5
C/W-040040*	1.44	0.45	0.45	2.34	1.74	1.10	0.80	0.45	4.1	6.43	112.7
Freedom!MR	1.59	0.54	0.58	2.72	1.52	1.28	0.71	0.47	4.0	6.70	117.5
Evolve	1.72	0.62	0.66	3.00	1.36	1.14	0.69	0.53	3.7	6.72	117.9
Mean	1.47	0.46	0.47	2.41	1.51	1.12	0.61	0.48	3.72	6.13	
LSD (0.05)	0.34	0.22	0.18	0.58	0.31	0.21	0.17	0.15	0.45	0.68	
CV%	16.1	32.5	26.1	16.8	14.5	13.3	19.1	21.7	8.5	7.8	

* Experimental Varieties

Table 13. Stand cover and flowering for red clover varieties at Prairie Du Sac, 2023-2024 cycle. Ordered from least to most productive over the 2-yr period.

	2023		2024			2023		2024				2023-2024
Prairie du Sac	7/27	10/18	7/10	8/12	9/23	7/27	8/29	5/30	7/10	8/12	9/23	Average
	Stand %		Stand %			Flower %		Flower %				Flower %
Marathon (Check)	49	78	68	80	73	25	1	2	22	13	54	19
Redkin	25	63	71	60	81	61	4	6	29	24	79	35
C/W-202*	68	85	73	78	84	48	6	5	38	25	83	33
DFRC30*	83	91	84	89	73	20	6	2	3	31	59	24
Starfire II (Check)	84	92	86	91	83	34	3	7	13	31	73	30
FF 9615 (Check)	94	92	83	83	58	7	2	3	5	16	45	15
Medallion	66	90	69	75	90	46	10	20	19	36	91	41
DFRC21*	92	93	68	73	88	55	9	7	23	45	88	41
Renegade	91	98	87	69	73	10	7	13	62	35	78	28
DFRC28*	88	86	87	94	58	13	2	1	5	8	44	13
Kenland (Check)	94	98	94	94	86	19	4	14	73	15	84	27
DFRC29*	76	85	79	90	60	9	2	3	3	16	54	17
Freedom! (Check)	98	99	80	83	80	26	7	11	63	46	81	34
C/W-040040*	86	98	85	91	69	4	1	4	25	10	55	15
Freedom!MR	96	98	93	90	69	11	4	5	19	19	66	21
Evolve	100	98	89	85	78	40	8	3	2	9	66	25
Mean	81	90	81	83	75	27	5	6	25	24	69	26
LSD (0.05)	19	8	18	14	25	25	4	6	35	19	28	9
CV%	16.2	6.2	15.8	11.9	23.7	65.6	66.1	66.0	97.0	57.1	28.4	25.5

* Experimental Varieties

Table 14. Plant relative height and foliage color for red clover varieties at Prairie Du Sac, 2023-2024 cycle. Ordered from least to most productive over the 2-yr period.

	2023			2024	2023-2024	2024		
Prairie du Sac	7/27	8/29	10/18	8/12	Average‡	7/10	8/12	Average
	Relative Plant Height‡			Relative Plant Height‡	Relative Plant Height‡	Foliage Color†		Foliage Color†
Marathon (Check)	1.2	1.0	1.5	1.8	1.5	1.8	2.4	2.1
Redkin	2.2	1.0	1.3	1.2	1.5	2.2	3.0	2.6
C/W-202*	2.0	1.6	2.1	1.7	1.9	2.2	2.2	2.2
DFRC30*	1.8	2.0	1.8	1.8	1.9	2.4	3.2	2.8
Starfire II (Check)	1.6	1.4	1.9	1.8	1.7	2.6	2.4	2.5
FF 9615 (Check)	1.3	2.0	2.1	2.0	1.9	2.0	2.2	2.1
Medallion	1.8	2.0	2.0	1.7	1.9	3.4	3.5	3.5
DFRC21*	1.8	1.7	1.9	1.6	1.8	2.0	2.8	2.4
Renegade	1.6	2.7	2.6	2.2	2.2	5.0	4.2	4.6
DFRC28*	1.8	1.3	1.9	2.2	1.8	1.8	2.6	2.2
Kenland (Check)	2.1	2.2	2.6	2.8	2.5	3.8	3.6	3.7
DFRC29*	1.8	1.3	1.5	1.8	1.7	2.2	3.0	2.6
Freedom! (Check)	2.0	3.0	3.0	2.8	2.6	4.8	4.6	4.7
C/W-040040*	1.6	1.5	1.8	2.0	1.8	2.8	1.8	2.3
Freedom!MR	2.0	1.6	2.5	2.4	2.1	3.8	3.6	3.7
Evolve	2.3	2.2	2.4	1.9	2.2	2.2	3.0	2.6
Mean	1.8	1.8	2.0	2.0	1.9	2.8	3.0	2.9
LSD (0.05)	0.7	0.8	0.5	0.4	0.3	0.9	1.2	0.8
CV%	25.5	29.8	16.0	14.7	9.3	22.1	27.6	18.8

* Experimental Varieties

‡ Relative Plant Height Visual Score: 1 - Shortest; 2 - Medium; and 3 - Tallest

† Relative foliage color: 1 - Darkest green; 5 - Lightest green (Towards yellowish & purple tipped leaves)

2024 ESTABLISHMENT

The next section of this report focuses on the first-year production of red clover varieties established in 2024. You will note that we do not include stand evaluation (cover) in

the table below, as it was 100% for all varieties. Data is presented in **Table 15** and **Figures 8-11**. No data was collected at Marshfield for 2024-established red clover.

Table 11. Forage production, flower percentage, and relative plant height for red clover varieties established in 2024 at Prairie Du Sac.

Prairie du Sac	9/12/2024			Yield% of Marathon
	Forage biomass ton DM/acre	Flower %	Relative plant height ‡	
F4287*	0.34	0	1	63.3
Amerigan	0.39	0	1	72.6
Marathon (Check)	0.54	3	1.4	100
F5058*	0.63	8	1.8	116.7
DFRC32*	0.66	2	2.1	121.9
DFRC28*	0.68	1	2.2	126.5
DFRC33*	0.71	2	2	131.6
F5059*	0.71	4	2.1	132.1
DFRC15*	0.72	3	2.1	133.5
DFRC31*	0.77	1	2.4	143.3
DFRC30*	0.78	1	2.2	144.2
Kenland (Check)	0.79	15	2.8	146.5
DFRC25*	0.81	2	2.5	150.2
DFRC29*	0.87	3	3	160.9
GA9908*	0.87	17	2.4	162.3
Freedom! (Check)	0.89	7	2.4	164.7
FF 9615 (Check)	0.91	1	2.7	168.4
SERC-V15*	0.91	2	2.4	168.8
Desire	0.91	6	2.7	169.8
BARTPV23*	0.92	4	2.7	171.2
Starfire II (Check)	0.96	10	2.7	178.6
Starburst	0.97	5	2.5	180
DFRC26*	1.02	3	2.4	190.2
DFRC27*	1.08	1	2.6	200
Mean	0.78	4	2.3	
LSD 5%	0.3	6	0.9	
CV%	26.9	100	27.4	

* Experimental Varieties

‡ Relative Plant Height Visual Score: 1 - Shortest; 2 - Medium; and 3 - Tallest

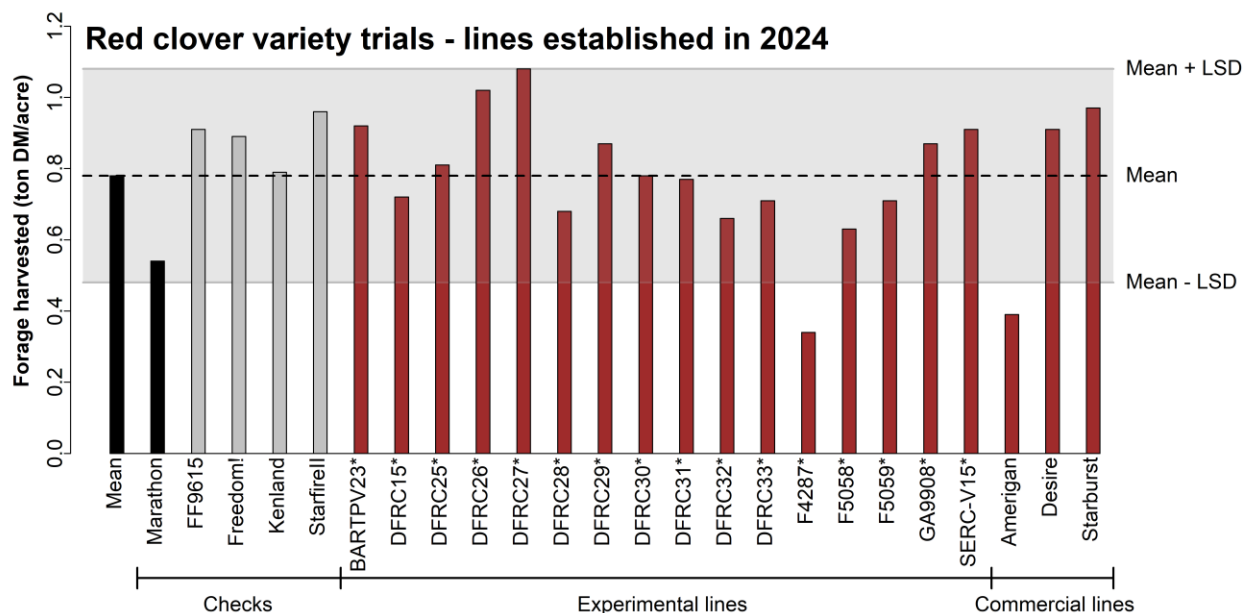


Figure 8. Forage biomass production of red clover varieties established in 2024 at Prairie Du Sac.

* Experimental Varieties. Relative Plant Height Visual Score: 1 - Shortest; 2 - Medium; and 3 - Tallest

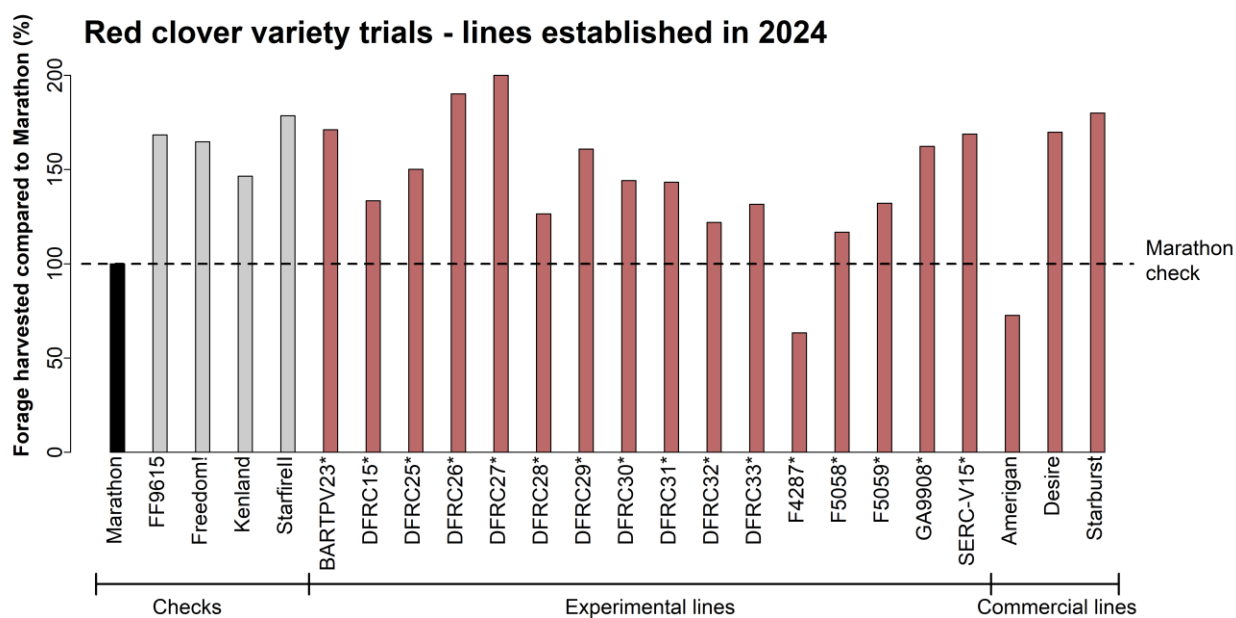


Figure 9. Forage biomass production of red clover varieties established in 2024 relative to that of Marathon (check) at Prairie Du Sac. * Experimental Varieties.

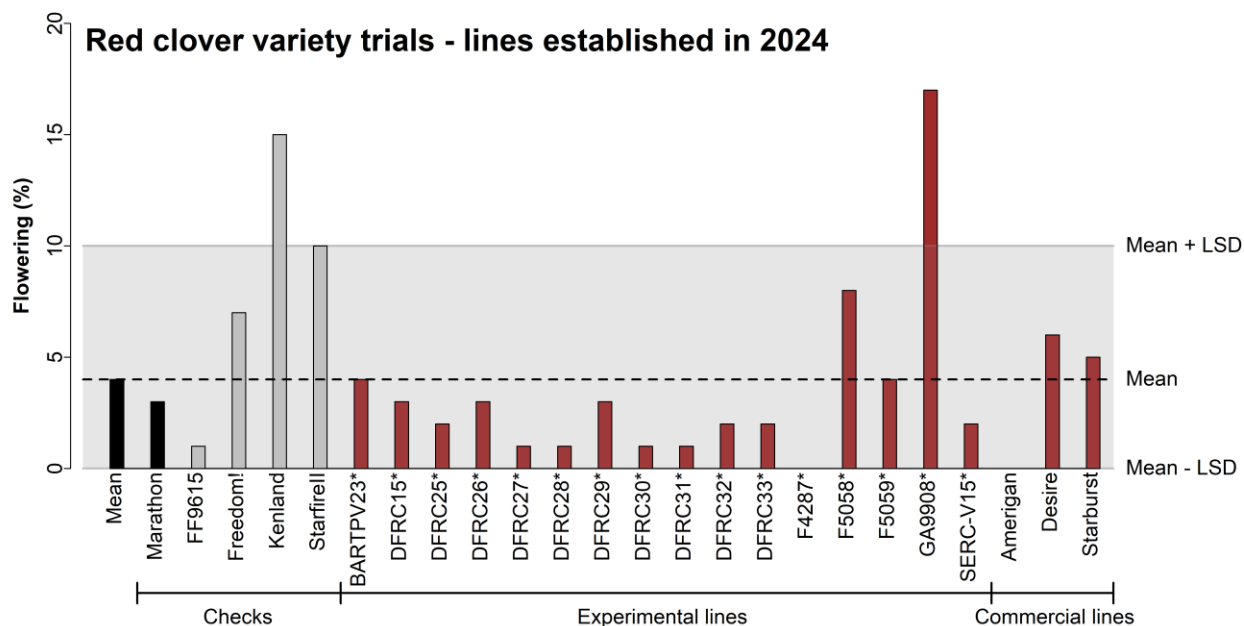


Figure 10. Flowering percentage of red clover varieties established in 2024 at Prairie Du Sac.

* Experimental Varieties.

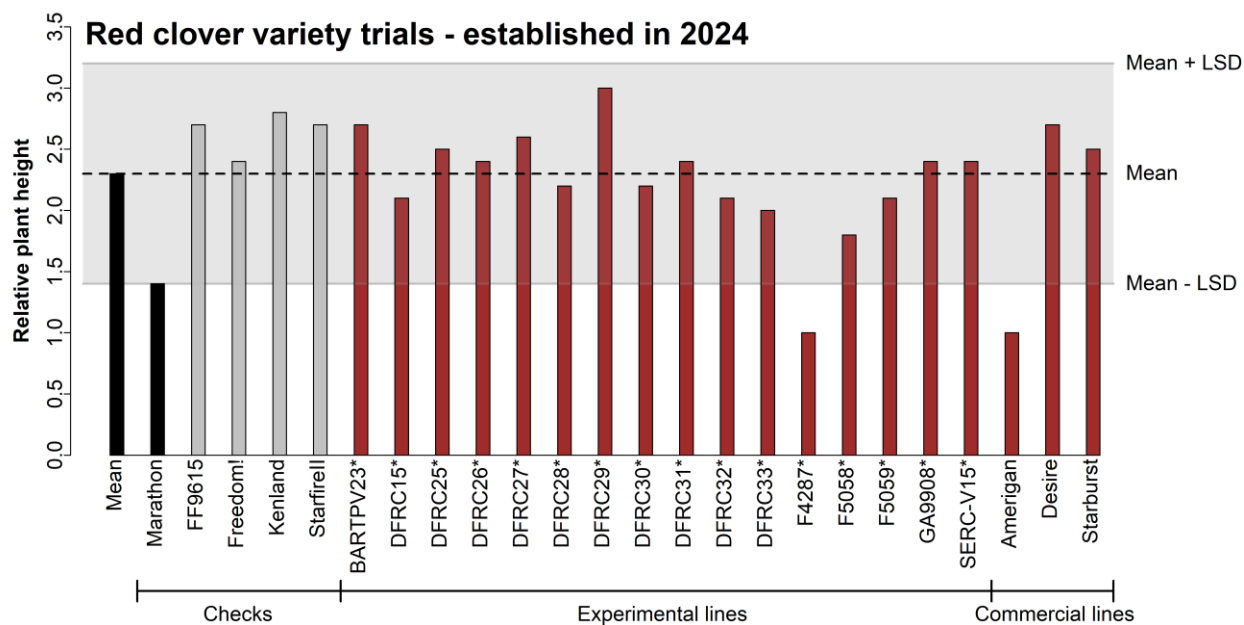


Figure 11. Relative plant height of red clover varieties established in 2024 at Prairie Du Sac.

* Experimental Varieties.

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