



## WISCONSIN ALFALFA YIELD AND PERSISTENCE (WAYP) PROGRAM 2009 SUMMARY REPORT

### Program Objectives:

1. To verify the yield and quality of alfalfa harvested from production fields over the life of the stand beginning with the first production year (year after seeding).
2. To quantify decreases in stand productivity of alfalfa fields as they age.

### 2009 Overview:

The year 2009 marked the third year of this project. Once again, UW-Extension agents were asked to identify forage producers who would be willing to weigh and sample forage from a 2008-seeded field and continue to do so for the life of the stand. Eight such fields were identified on six separate farms. Also included in this summary are the data for the second and third production years from fields entered into the program in 2007 (2006 seedings) and 2008 (2007 seedings). As is always the case in these types of studies, there is some attrition of fields over time. This is usually the result of not being able to obtain critical yield or forage quality data for a cutting or multiple cuttings. In total, production data was collected for 23 fields in 2009. A summary of all project fields is presented in Table 1.

### 2009 Weather

Cool and dry were predominant weather patterns across most of the state in 2009. In fact, it was a record cool growing season in many regions. Extended stretches of dry weather made it easy to schedule alfalfa harvest but yield potential was reduced in many areas, especially for cuttings taken in late-July and early-August. A wet and cool October did not lend itself to any late-fall harvests.

### 2008 Weather

May was extremely dry across much of the state. Heavy and frequent rains during early June were the predominant weather anomalies in 2008. In some cases this caused a delay in first-cut harvest date and in one case resulted in the forage being chopped back onto the field. Dry weather returned later in the summer. Overall, the growing season was below normal for growing degree units.

### 2007 Weather

Weather conditions varied across locations. A frost in early April delayed initial spring growth at several locations. All sites experienced some degree of dry conditions during the growing season. Drought was especially severe in western Wisconsin.

### Data Collection

Project fields were identified and an accurate measure of field size was determined (if not previously calculated). Forage yield from an entire project field was weighed (usually this was done with an on-farm drive over scale). Both empty and full weights for all trucks/wagons used were recorded. Beginning in 2008, two forage samples from each harvest were taken and submitted to the Marshfield Soil and Forage Analysis Laboratory (only one sample was submitted per harvest in 2007) for NIR analysis. Data from the two forage samples was averaged and recorded by the local coordinator. Information was inputted into a spreadsheet and shared with the producer following each harvest. At the end of the season, all data was collected and summarized for this report.

**Table 1. Field background information**

<b>Field #</b>	<b>1<sup>st</sup> Production Year</b>	<b>County</b>	<b>Seeding Mo/Yr.</b>	<b>Seeding Rate (lb/ac)</b>	<b>Field Size (ac)</b>	<b>Notes</b>
107	2007	Outagamie	05/06	15	103.7	
207	2007	Outagamie	04/06	16	79.3	
307	2007	Outagamie	04/06	16	37.0	no '08 1 <sup>st</sup> -cut data
407	2007	Outagamie	04/06	16	156.7	no '08 1 <sup>st</sup> -cut data
507	2007	St. Croix	08/06	NA	51.0	
607	2007	Waupaca	04/06	15	24.1	dropped in 2008
707	2007	Fond du Lac	04/06	17	15.7	dropped in 2008
807	2007	Fond du Lac	04/06	17	39.7	
108	2008	Chippewa	04/07	15	18.8	
208	2008	Marathon	04/07	15	5.2	
308	2008	Winnebago	05/07	15	115	
408	2008	Winnebago	08/07	15	36.0	
508	2008	Winnebago	05/07	15	22.0	
608	2008	Outagamie	05/07	20	83.7	
708	2008	Outagamie	04/07	16	147.8	
808	2008	Outagamie	04/07	16	53.0	
908	2008	Outagamie	05/07	15	50.3	
1008	2008	Outagamie	08/07	15	194.8	dropped in 2009
109	2009	St. Croix	08/08	NA	41	
209	2009	Winnebago	04/08	15	67	
309	2009	Winnebago	08/08	15	78	
409	2009	Brown	08/08	18	75	
509	2009	Chippewa	04/08	15	16.2	
609	2009	Calumet	04/08	12	15	
709	2009	Outagamie	05/08	20	74.8	
809	2009	Outagamie	05/08	20	63	

## Harvest Schedules:

### 2007 Season:

Cutting dates varied among sites, especially for the initial spring cutting date (Table 2). Four of the fields were cut five times during the growing season (4 before Sept. 1st + 1 late fall cut in October), three of the fields were cut four times before Sept. 1<sup>st</sup>, and one field was cut three times, with the final cut on July 17<sup>th</sup>. The latter was the western Wisconsin site where drought conditions were severe.

Field ID#	1st Cut Date	2nd Cut Date	3rd Cut Date	4th Cut Date	5th Cut Date
107	22-May	23-Jun	24-Jul	31-Aug	21-Oct
207	22-May	23-Jun	25-Jul	31-Aug	21-Oct
307	22-May	23-Jun	25-Jul	31-Aug	22-Oct
407	23-May	24-Jun	26-Jul	31-Aug	22-Oct
507	16-May	19-Jun	17-Jul		
607	18-May	30-Jun	30-Jul	31-Aug	
707	26-May	29-Jun	31-Jul	30-Aug	
807	29-May	25-Jun	29-Jul	30-Aug	
<b>Mean</b>	<b>22-May</b>	<b>24-Jun</b>	<b>25-Jul</b>	<b>30-Aug</b>	<b>21-Oct</b>
<b>Earliest</b>	<b>16-May</b>	<b>19-Jun</b>	<b>17-Jul</b>	<b>30-Aug</b>	<b>21-Oct</b>
<b>Latest</b>	<b>29-May</b>	<b>30-Jun</b>	<b>31-Jul</b>	<b>31-Aug</b>	<b>22-Oct</b>

### 2008 Season:

Cutting dates for all project fields harvested in 2008 are presented in Table 3. Of the sixteen project fields, three were cut three times, eleven were cut four times (all but one of these by the end of August), and two were cut five times. Average first-cut date was 12 days later in 2008 than 2007 (May 22 vs. June 3). However, average 4<sup>th</sup>-cut date was the same for both years, which was the result of shorter intervals between cutting dates in 2008. The approach for fields in the four-cut harvest schedule was similar with cuttings generally made within a week of June 1,

Field ID#	1st Cut Date	2nd Cut Date	3rd Cut Date	4th Cut Date	5th Cut Date
107	6-Jun	30-Jun	30-Jul	29-Aug	
207	6-Jun	30-Jun	28-Jul	30-Aug	
307	NA	30-Jun	30-Jul	28-Aug	
407	NA	30-Jun	30-Jul	29-Aug	
507	8-Jun	8-Jul	29-Jul		
807	30-May	5-Jul	5-Aug	17-Sep	
108	6-Jun	13-Jul	14-Aug		
208	23-Jun	30-Jul	3-Sep		
308	27-May	25-Jun	27-Jul	27-Aug	29-Oct
408	27-May	24-Jun	26-Jul	27-Aug	
508	27-May	25-Jun	26-Jul	27-Aug	29-Oct
608	28-May	3-Jul	4-Aug	6-Sep	
708	6-Jun	30-Jun	28-Jul	30-Aug	
808	6-Jun	1-Jul	30-Jul	28-Aug	
908	6-Jun	30-Jun	1-Aug	29-Aug	
1008	NA	1-Jul	29-Jul	31-Aug	
<b>Mean</b>	<b>3-Jun</b>	<b>2-Jul</b>	<b>1-Aug</b>	<b>30-Aug</b>	<b>29-Oct</b>
<b>Earliest</b>	<b>27-May</b>	<b>24-Jun</b>	<b>26-Jul</b>	<b>27-Aug</b>	<b>29-Oct</b>
<b>Latest</b>	<b>23-Jun</b>	<b>30-Jul</b>	<b>3-Sep</b>	<b>17-Sep</b>	<b>29-Oct</b>

July 1, August 1, and September 1 (the exception was a Sept. 17 harvest date for one farm). However, there was a wide variation in how the three-cut schedule was implemented (the final cutting ranged from July 29 to September 3).

2009 Season:

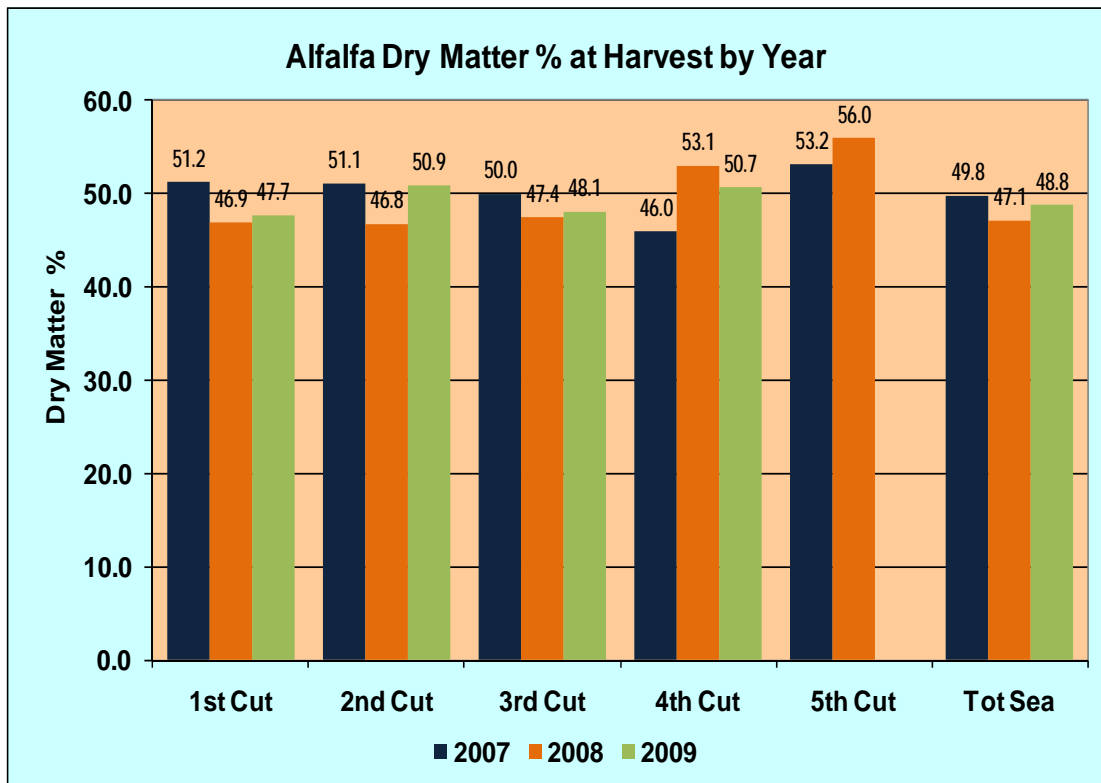
Cutting dates for all project fields harvested in 2009 are presented in Table 4. Of the twenty-three project fields, nineteen were harvested on a 4-cut schedule and four were harvested on a 3-cut schedule. It was the first year of the study when no fields were cut five times (a cool, wet October being largely to blame). The average first-cut date of May 31<sup>st</sup> was three days earlier than 2008 but significantly later than 2007 (May 22<sup>nd</sup>). The first-cut date ranged from May 18<sup>th</sup> to June 10<sup>th</sup>. This was the first year that the average 4<sup>th</sup>-cut date pushed into September. Like 2008, cutting dates for 4-cut fields were largely within a week of June 1, July 1, August 1, and September 1. Three of the four 3-cut fields were cut early in June, mid-July, and late-August. The one exception was field 109, which was cut mid-May, mid-June, and mid-July.

**Table 4.** Summary of 2009 Cutting Dates

Field ID#	1st Cut Date	2nd Cut Date	3rd Cut Date	4th Cut Date
107	29-May	1-Jul	2-Aug	7-Sep
207	29-May	1-Jul	4-Aug	8-Sep
307	4-Jun	2-Jul	3-Aug	8-Sep
407	3-Jun	1-Jul	3-Aug	7-Sep
507	18-May	22-Jun	14-Jul	26-Aug
807	2-Jun	4-Jul	11-Aug	12-Sep
108	4-Jun	10-Jul	23-Aug	
208	10-Jun	15-Jul	31-Aug	
308	30-May	28-Jun	31-Jul	2-Sep
408	30-May	29-Jun	30-Jul	2-Sep
508	30-May	28-Jun	30-Jul	2-Sep
608	2-Jun	30-Jun	3-Aug	3-Sep
708	29-May	1-Jul	4-Aug	9-Sep
808	4-Jun	3-Jul	2-Aug	7-Sep
908	3-Jun	2-Jul	3-Aug	8-Sep
109	18-May	22-Jun	19-Jul	
209	30-May	28-Jun	31-Jul	3-Sep
309	30-May	28-Jun	31-Jul	2-Sep
409	4-Jun	4-Jul	14-Aug	13-Sep
509	6-Jun	10-Jul	23-Aug	
609	2-Jun	29-Jun	3-Aug	6-Sep
709	3-Jun	30-Jun	3-Aug	3-Sep
809	3-Jun	1-Jul	4-Aug	3-Sep
<b>Mean</b>	<b>31-May</b>	<b>1-Jul</b>	<b>4-Aug</b>	<b>5-Sep</b>
<b>Earliest</b>	<b>18-May</b>	<b>22-Jun</b>	<b>14-Jul</b>	<b>26-Aug</b>
<b>Latest</b>	<b>10-Jun</b>	<b>15-Jul</b>	<b>31-Aug</b>	<b>13-Sep</b>

**Forage Dry Matter at Harvest:**

Alfalfa was harvested as haylage for all but five individual cuttings over the three years. Harvest dry matter data from the five dry hay harvests was not included in the forage dry matter data summary. Average harvested forage dry matter content was once again slightly below 50 percent (Figure 1). Only five of the twenty-three fields had total-season forage dry matter levels (weighted average) below 45 percent. In 2009, there did not seem to be significant differences between cuttings. October harvested forage harvested in 2007 and 2008 tended to be higher in dry matter than most other cuttings.



**Range for individual fields:**

**2007:**  
For individual cutting:  
 Wettest: 33.9% DM  
 Driest: 67.6% DM  
For total season:  
 Wettest: 41.6% DM  
 Driest: 54.2% DM

**2008:**  
For individual cutting:  
 Wettest: 33.0% DM  
 Driest: 63.3% DM  
For total season:  
 Wettest: 37.0% DM  
 Driest: 54.4% DM

**2009:**  
For individual cutting:  
 Wettest: 27.7% DM  
 Driest: 66.6% DM  
For total season:  
 Wettest: 37.9% DM  
 Driest: 59.2% DM

**Figure 1.** Average dry matter of harvested forage by cutting and as a weighted average for the total season (2007-2009).

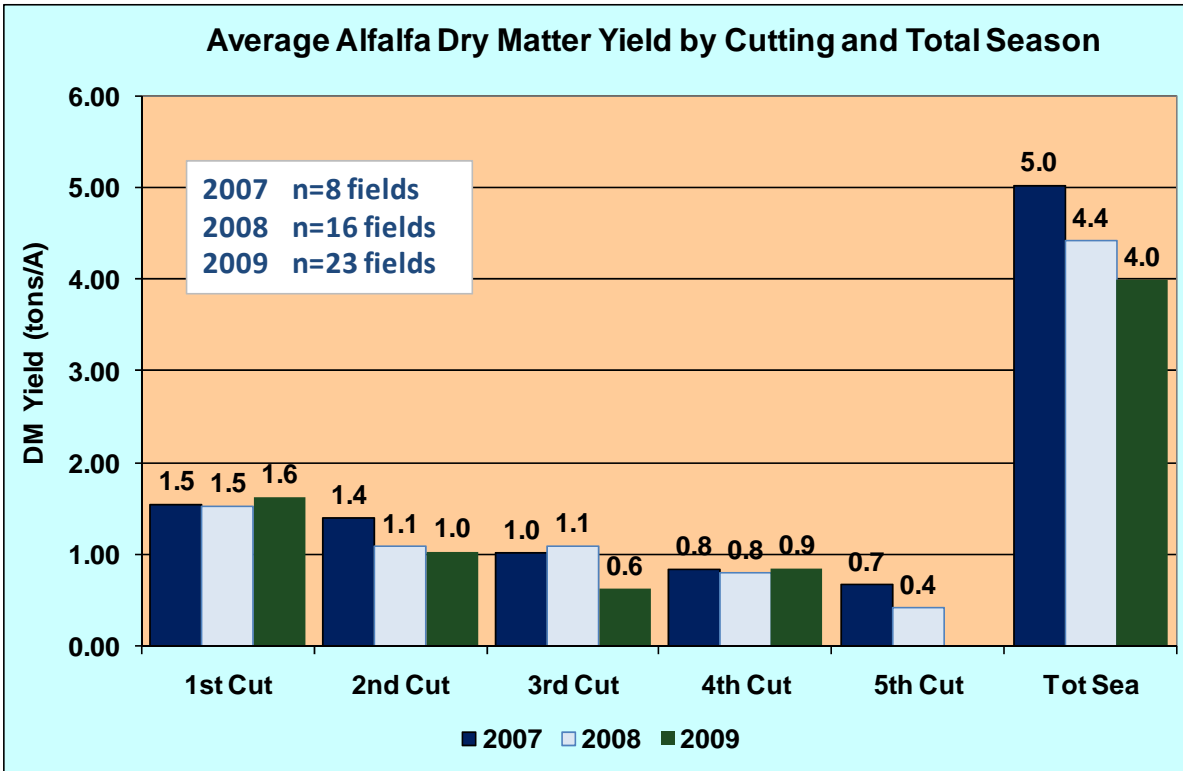
**Discussion Point!**

Although project participants were not asked about storage structure, there is good reason to believe most of the farms are storing this forage in bunker/pile silos. Average harvested dry matter percent reported in this project for the first three years is well above that recommended by ag engineers to obtain optimum fermentation and silage porosity. Conversely, many nutritionists are recommending drier alfalfa haylage to offset the wetter corn silage component of the diet, decrease the percentage of soluble protein, and to avoid any chance of butyric acid formation. Clearly, the latter strategy is being followed on these farms and presumably many others.

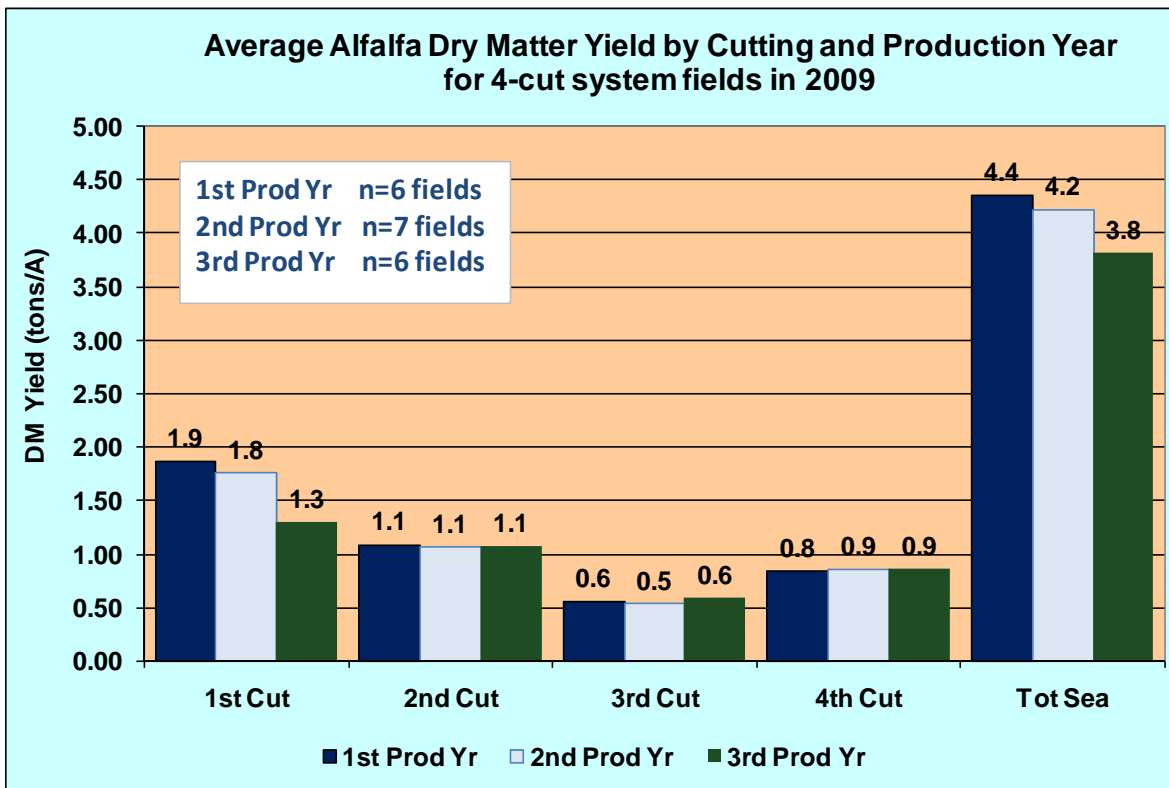
**Forage Dry Matter Yield:**

Weather conditions across most of the state did not accommodate high total season dry matter yields in 2009. This was the first year when no project field exceeded 6.0 tons d.m./A for the total season. The mean average yield was about 4.0 tons d.m./A, well below the average yield of 2007 and 2008 (Tables 5, 6, and 7). This decline can be attributed to weather conditions, the inclusion of six 3<sup>rd</sup> production year fields in the overall average, and the lack of any fields cut five times. First-cut dry matter yield was actually slightly higher than that obtained in 2007 and 2008 (Figure 2). Third cutting, primarily harvested in late July and early August, was exceptionally poor (average of only 0.6 tons/A) across the state. In fact, only two of the twenty-three measured fields had a 3<sup>rd</sup>-cut yield of over 1 ton/A (Table 7). Fourth cutting yields were about the same as those obtained in 2007 and 2008.

A comparison of 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> production year fields cut four times in 2009 shows a steady decline in overall yield (Figure 3). Most of the difference can be attributed to first-cut yield between the three stand ages. As is always the case, there is extreme yield variability between fields that can be attributed to cutting schedule and environment (Table 7).



**Figure 2.** Average dry matter yield by cutting and for the total season. Data is segregated by calendar year.



**Figure 3.** Average dry matter yield by cutting and for the total season. Data is segregated by stand production year.

**Table 5.** Dry matter yield by cutting and for the total season in 2007

Field ID#	1st Cut DM Yld	2nd Cut DM Yld	3rd Cut DM Yld	4th Cut DM Yld	5th Cut DM Yld	Tot Sea DM Yld
107	1.57	1.53	0.95	0.59	0.34	4.98
207	1.52	1.33	1.00	0.70	0.73	5.27
307	1.54	1.51	1.30	0.90	0.88	6.12
407	1.41	1.57	1.11	0.80	0.71	5.59
507	1.00	1.02	0.37			2.39
607	1.79	1.77	1.20	1.14		5.90
707	1.75	1.23	0.81	0.63		4.41
807	1.79	1.19	1.42	1.10		5.51
<b>Mean</b>	<b>1.55</b>	<b>1.39</b>	<b>1.02</b>	<b>0.84</b>	<b>0.67</b>	<b>5.02</b>
<b>Low</b>	<b>1.00</b>	<b>1.02</b>	<b>0.37</b>	<b>0.59</b>	<b>0.34</b>	<b>2.39</b>
<b>High</b>	<b>1.79</b>	<b>1.77</b>	<b>1.42</b>	<b>1.14</b>	<b>0.88</b>	<b>6.12</b>

**Table 6.** Dry matter yield by cutting and for the total season in 2008

Field ID#	1st Cut DM Yld	2nd Cut DM Yld	3rd Cut DM Yld	4th Cut DM Yld	5th Cut DM Yld	Tot Sea DM Yld
107	1.28	1.11	1.07	0.43		3.89
207	1.34	1.08	1.14	0.68		4.23
307	NA	0.86	0.91	0.78		---
407	NA	1.14	1.09	0.68		---
507	1.95	1.08	0.76			3.79
807	2.23	1.73	1.31	0.82		6.08
108	1.38	0.74	1.15			3.27
208	2.08	1.54	0.84			4.46
308	1.46	0.83	1.27	0.93	0.45	4.95
408	0.86	0.49	0.85	0.50		2.70
508	2.01	0.72	1.20	0.98	0.37	5.29
608	1.39	1.78	1.54	0.92		5.63
708	1.28	1.05	1.18	0.89		4.40
808	1.81	1.20	1.27	0.79		5.07
908	0.73	0.94	0.89	1.12		3.68
1008	NA	1.06	0.97	0.83		---
<b>Mean</b>	<b>1.52</b>	<b>1.08</b>	<b>1.09</b>	<b>0.80</b>	<b>0.41</b>	<b>4.42</b>
<b>Low</b>	<b>0.73</b>	<b>0.49</b>	<b>0.76</b>	<b>0.43</b>	<b>0.37</b>	<b>2.70</b>
<b>High</b>	<b>2.23</b>	<b>1.78</b>	<b>1.54</b>	<b>1.12</b>	<b>0.45</b>	<b>6.08</b>

**Table 7.** Dry matter yield by cutting and for the total season in 2009

Field ID#	1st Cut DM Yld	2nd Cut DM Yld	3rd Cut DM Yld	4th Cut DM Yld	Tot Sea DM Yld
107	0.95	1.06	0.30	0.99	3.31
207	1.28	1.23	0.53	1.00	4.04
307	1.02	1.23	0.69	0.93	3.87
407	1.59	1.02	0.53	0.85	3.99
507	1.38	0.90	0.49	0.76	3.53
807	1.56	0.99	0.98	0.62	4.15
108	1.52	0.83	0.80		3.15
208	1.77	1.18	1.33		4.28
308	1.24	0.94	0.56	1.15	3.89
408	1.80	0.80	0.20	0.64	3.43
508	1.74	1.00	0.59	0.98	4.32
608	2.19	1.23	0.88	0.78	5.07
708	1.40	1.34	0.63	0.98	4.35
808	2.07	1.16	0.59	0.55	4.37
908	1.88	0.99	0.30	0.95	4.13
109	0.57	0.55	1.09		2.21
209	1.92	1.60	0.69	1.06	5.27
309	1.14	0.84	0.43	1.05	3.46
409	1.45	1.24	0.35	0.32	3.37
509	2.05	0.88	0.57		3.49
609	2.36	0.58	0.20	0.95	4.10
709	2.27	1.25	0.82	0.92	5.26
809	2.08	1.03	0.85	0.72	4.68
<b>Mean</b>	<b>1.62</b>	<b>1.04</b>	<b>0.63</b>	<b>0.85</b>	<b>3.99</b>
<b>Low</b>	<b>0.57</b>	<b>0.55</b>	<b>0.20</b>	<b>0.32</b>	<b>2.21</b>
<b>High</b>	<b>2.36</b>	<b>1.60</b>	<b>1.33</b>	<b>1.15</b>	<b>5.27</b>

**Discussion Point!**

Just how profitable is it to take a 5<sup>th</sup> cutting in October? During 2007-2008 there were five fields where this cutting strategy was used. The yield range was from 0.34 to 0.88 tons/A (average was 0.58 tons/A). Given the potential for reduced yield in the subsequent growing season (more on this later) and the cost of harvesting such a small amount of forage per acre, is such a practice viable in Wisconsin? Perhaps the “need for feed” might justify the practice in some years, but long term it’s likely not a sustainable or profitable management practice.

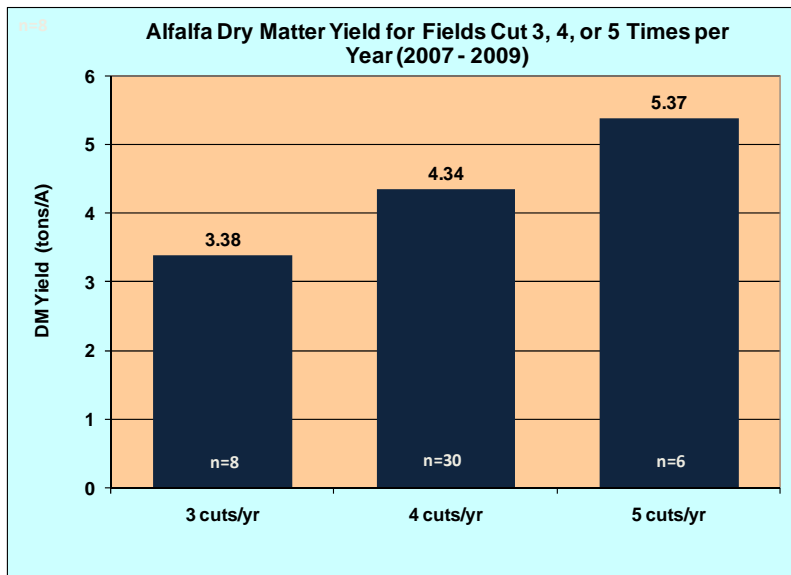
## Cutting schedule x yield

It's often interesting to look at cutting schedule as a function of yield. The average yield of alfalfa harvested for fields cut 3, 4, or 5 times per year is presented in Figure 4. Not surprisingly, more harvests per year translated to higher total season yields. It should be noted that this is a simple average that did not take into account the previous year cutting schedule. Further, these comparisons are made across a range of environments and locations.

## Alfalfa Persistence:

### In-season

An analysis was done to determine the percent of total season yield for each cutting (Table 8). Data was summarized for 3-, 4-, and 5-cut systems for all project years. Five-cut fields were also included in the 4-cut summary with the final fall harvest not included in the total season yield. It's significant to note the wide variation in percent yield for an individual cutting. In some cases this is the result of environmental conditions (e.g. drought) previous to the harvest while in other situations it's simply a function of cutting date (Tables 2, 3, and 4). Compared to past years, the percentage of yield attributed to first-cut increased in the 2009 combined analysis, while third-cut declined.



**Figure 4.** Alfalfa dry matter yield for fields cut 3, 4, or 5 times per year (2007-2009).

<b>Table 8.</b> Average percent of total season yield by cutting for 3, 4 and 5 cut harvest systems*					
<b>3-cut system (N=7 site years)</b>					
	<b>1st cut</b>	<b>2nd cut</b>	<b>3rd cut</b>		
<b>Mean</b>	44	30	27		
<b>Low</b>	26	23	16		
<b>High</b>	59	43	50		
<b>4-cut system (N=36 site years)</b>					
	<b>1st cut</b>	<b>2nd cut</b>	<b>3rd cut</b>	<b>4th cut</b>	
<b>Mean</b>	36	26	19	19	
<b>Low</b>	20	14	5	10	
<b>High</b>	58	37	32	30	
<b>5-cut system (4+1 fall) (N=6 site years)</b>					
	<b>1st cut</b>	<b>2nd cut</b>	<b>3rd cut</b>	<b>4th cut</b>	<b>5th cut</b>
<b>Mean</b>	30	23	21	15	11
<b>Low</b>	25	14	19	12	7
<b>High</b>	38	31	26	19	14

\* high and low figures are for individual cuttings and will not add to 100%

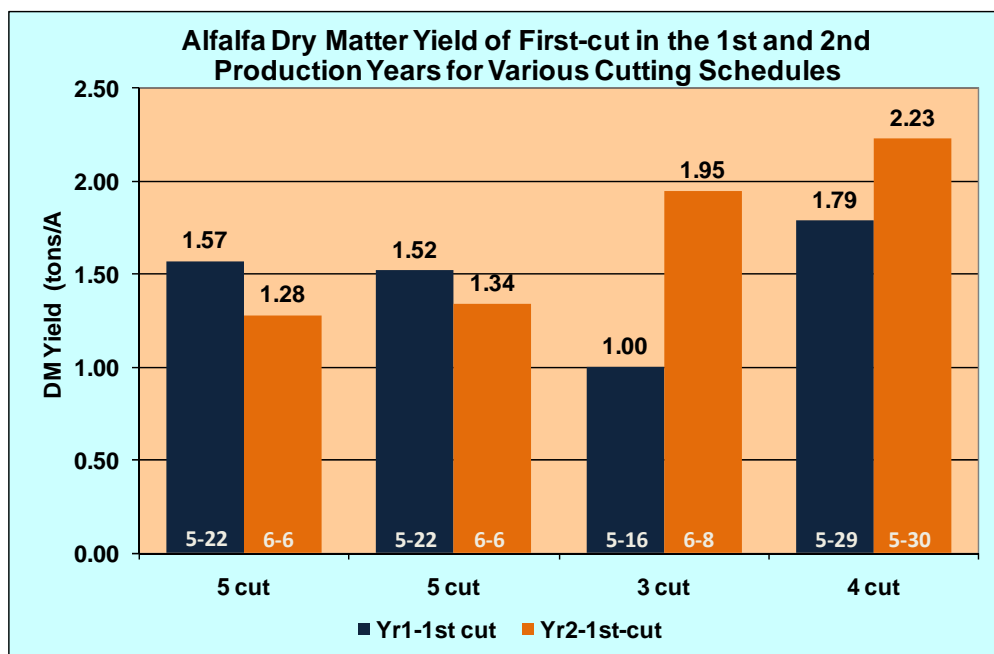
### Between years

Being only three years into the project, it's difficult to draw too many firm conclusions on stand persistence across years. Persistence is influenced over time by the age of the stand, cutting schedule, and environment. For this project, persistence is being measured as a percent of first production year dry matter yield. Persistence data in Table 9 consists of 2006 and 2007-seeded fields and is averaged over all cutting schedules. Although ranges indicate a wide variation, to date the 2<sup>nd</sup> production year fields have exactly matched the yields obtained in the first production year. For the 2006-seeded fields that were in their 3<sup>rd</sup> production year in 2009, total season yield declined to 83% of that obtained in the 1<sup>st</sup> production year.

<b>Table 9.</b> Percent of 1 <sup>st</sup> production year yield by cutting and total season for 2 <sup>nd</sup> and 3 <sup>rd</sup> production year stands.					
<b>2<sup>nd</sup> Production Year Stands (N=15 site years)</b>					
	1st cut	2nd cut	3rd cut	4th cut	Tot Sea
<b>Mean</b>	131	103	82	93	100
<b>Low</b>	82	57	23	69	78
<b>High</b>	257	163	205	128	159
<b>3<sup>rd</sup> Production Year Stands (N=6 site years)</b>					
	1st cut	2nd cut	3rd cut	4th cut	Tot Sea
<b>Mean</b>	92	80	65	115	83
<b>Low</b>	61	65	32	56	63
<b>High</b>	138	93	132	169	148

### Discussion Point!

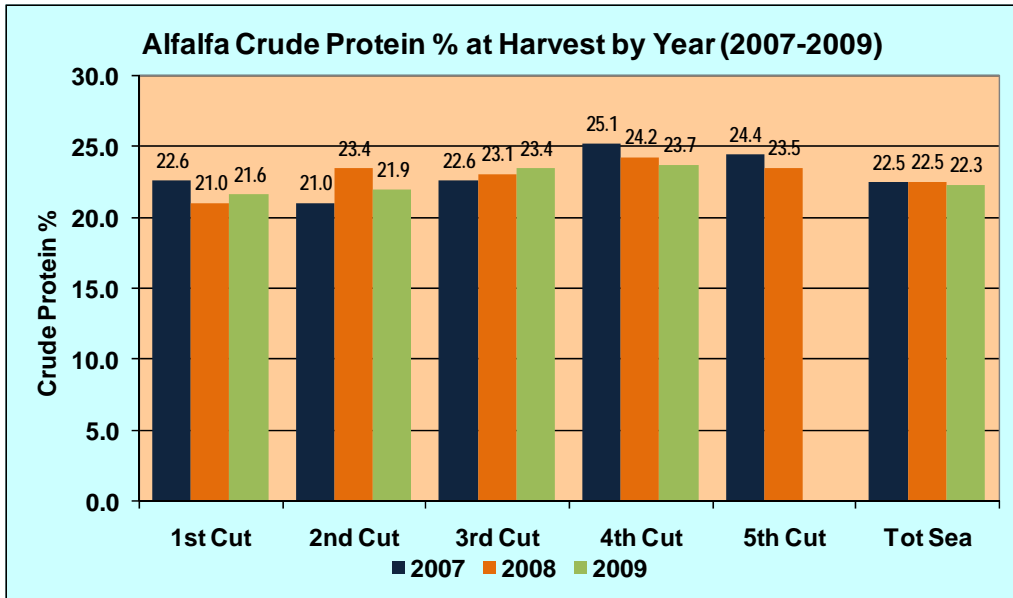
Just how much does taking a late fall 5th crop harvest reduce yield of first-cut the following spring? Research indicates the reduction is at least equal to the yield of the fall harvest. This reduction is caused by reduced plant vigor or, in extreme cases, plant death from winterkill. During the first year of this project (2007), Fields 107 and 207 had a 5th-cut taken in the fall while Fields 807 (4-cut) and 507 (3-cut) did not. Figure 5 shows the first-cut yields for these fields in both 2007 and 2008. Note that 2nd-year first-cut yields were lower for both fields cut in the fall of 2007 but higher for those fields (807 and 507) not cut in the fall. A similar scenario occurred in 2009 for fields 308, 408, and 508.



**Figure 5.** Alfalfa dry matter yield of first-cut in the 1<sup>st</sup> and 2<sup>nd</sup> production years for various 1<sup>st</sup>-year cutting schedules. Cutting dates are displayed at the base of each bar.

## Forage Quality:

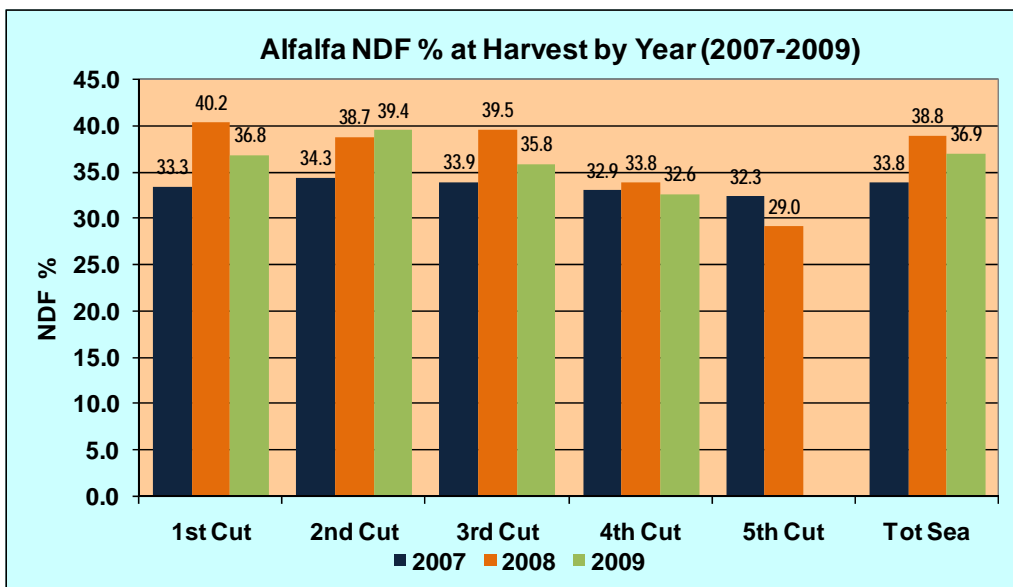
Overall, harvested forage quality in 2009 was intermediate between 2007 and 2008. In all three years, forage quality has been exceptionally high. The cool, dry season of 2009 provided ideal conditions for harvesting high quality forage. Forage quality, although extremely important, is not the primary focus of this project. However, it is impossible to evaluate changes in management to maximize yield and persistence without considering the impact on forage quality. Figures 6 through 10 summarize the forage quality obtained in the project for 2007-2009.



### CP% range by cutting in 2009:

	High	Low
1st cut	24.3	18.9
2nd cut	24.7	19.9
3rd cut	26.9	20.4
4th cut	26.1	20.8
5th cut	NA	NA
Tot Sea	23.5	20.5

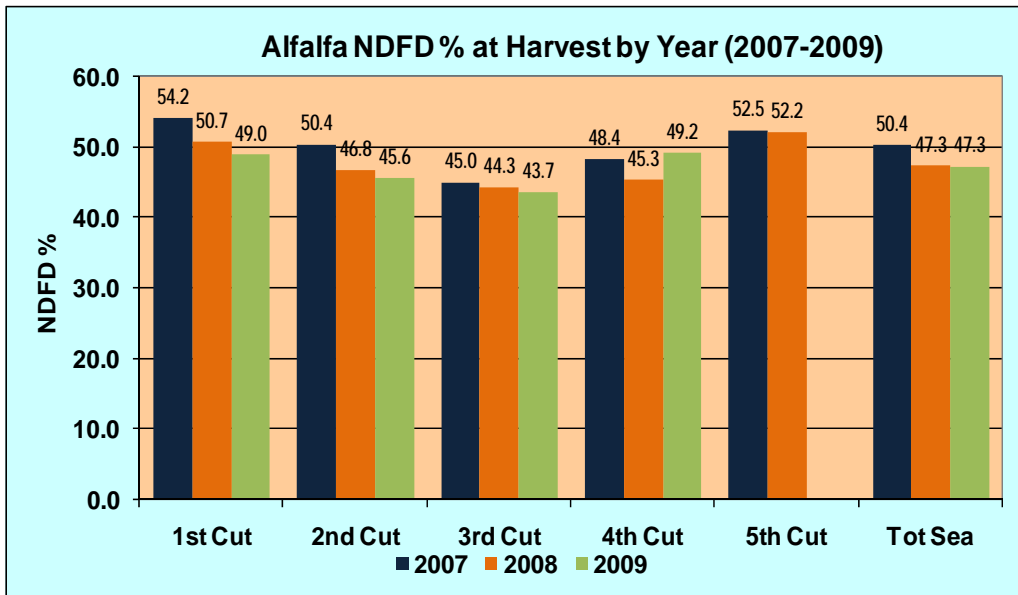
**Figure 6.** Average crude protein percent by cutting and weighted average for the total season (2007-2009).



### NDF range by cutting in 2009:

	High	Low
1st cut	43.1	29.6
2nd cut	42.6	35.4
3rd cut	45.7	30.9
4th cut	37.1	29.1
5th cut	NA	NA
Tot Sea	42.9	32.5

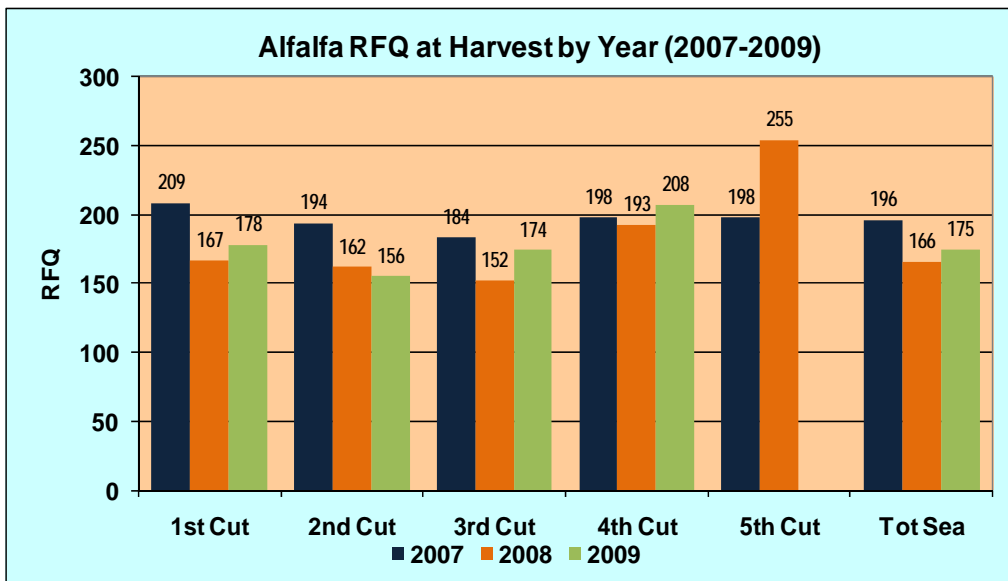
**Figure 7.** Average NDF percent by cutting and weighted average for the total season (2007-2009).



**NDFD range by cutting in 2009:**

	High	Low
1st cut	52.6	45.0
2nd cut	48.9	43.1
3rd cut	47.6	40.3
4th cut	57.1	44.6
5th cut	NA	NA
Tot Sea	51.1	44.4

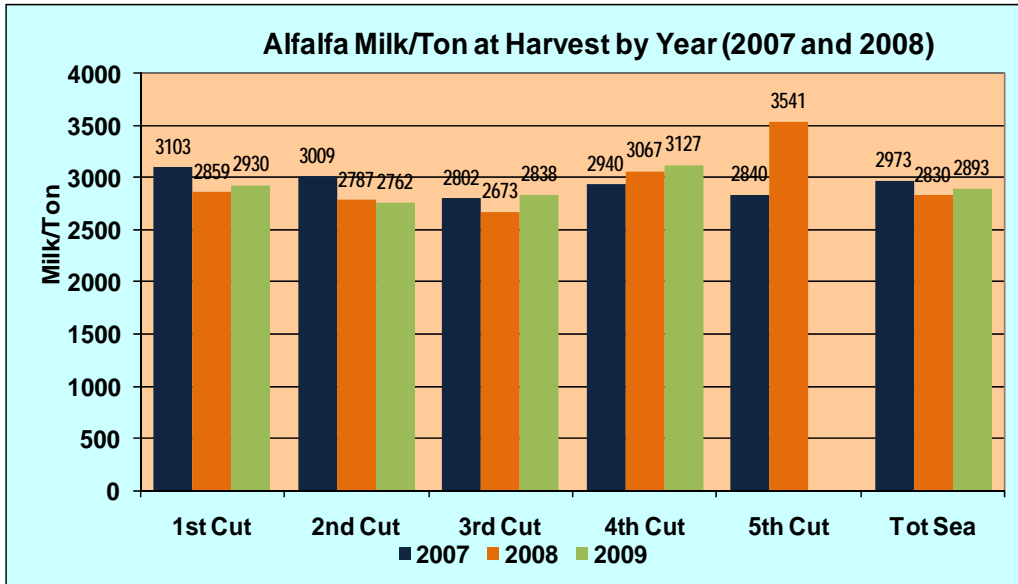
**Figure 8.** Average NDFD percent by cutting and weighted average for the total season (2007-2009).



**RFQ range by cutting in 2009:**

	High	Low
1st cut	235	148
2nd cut	186	137
3rd cut	220	117
4th cut	244	165
5th cut	NA	NA
Tot Sea	207	148

**Figure 9.** Average Relative Forage Quality (RFQ) by cutting and weighted average for the total season (2007-2009).



**Milk/Ton range by cut in 2009:**

	High	Low
1st cut	3328	2703
2nd cut	3089	2556
3rd cut	3328	2353
4th cut	3383	2745
5th cut	NA	NA
Tot Sea	3149	2664

**Figure 10.** Average Milk per Ton by cutting and weighted average for the total season (2007-2009).

**Discussion Point!**

When is forage quality too good? The “knock” on alfalfa is that dry matter yield doesn’t compete with corn silage. One strategy to increase yield is to simply delay harvest. Such a strategy lowers forage quality but the more important consideration is whether or not a little lower quality is an acceptable tradeoff for a lot more yield, especially in the spring. For every five days in late May alfalfa yield increases by 0.25 tons/A and RFQ decreases by 20 to 25 points (these are averages and actual values will vary with weather conditions). If the alfalfa is somewhere north of 200 RFQ (as it was in some of these project fields) then waiting for a bump in yield is probably a good tradeoff. Conversely, if the alfalfa is at 160 RFQ, then the tradeoff doesn’t look nearly as good.

**Summary:**

The Wisconsin Alfalfa Yield and Persistence Program is designed to provide forage growers and agricultural professionals a unique look at what is happening at the farm level. As more fields are entered and years pass, the reliability of information will increase. It’s important to keep in mind that only three years of data have been collected. Nevertheless, the information presented here can be contrasted and there certainly is enough information to begin to formulate possible trends and topics for discussion. The 2009 year was by no means for alfalfa production across most of the state, yet some producers still managed to harvest acceptable yields of high quality forage.

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First and foremost, UW-Extension Team Forage wishes to thank the producers who took the extra time and effort to obtain weights and forage samples for the project fields at each cutting.

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