UW Extension
Marinette County

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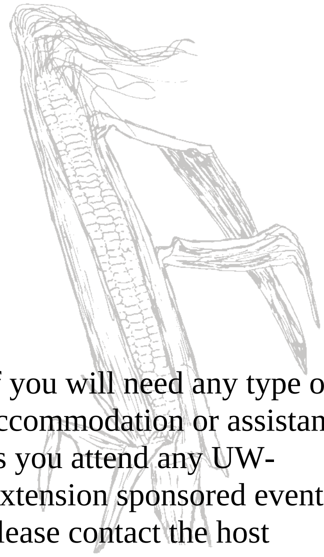

If you will need any type of accommodation or assistance as you attend any UW-Extension sponsored event, please contact the host county or Scott at the Marinette County office at least two days prior to the event. All requests will be confidential.

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May, 2016 Newsletter

Most importantly, I hope this edition finds you and your family and workers safe as we are speeding full-bore through another planting season and progressing quickly toward harvest season. The next page has some various cropping thoughts arranged by farm type and taking into account current economic conditions.

Scott Reuss

Tractor & Machinery Safety Training

Plans are now being finalized for a tractor & machinery safety training course. It will be held in early July in the Pound/Coleman area and will cost approximately $35. The flier will be in the June newsletter.

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<u>Local program Calendar of Events</u>

May 10 — 6 pm — Harmony Arb. — Selecting Perennial Flowers
May 11, 18, 25, June 1,8 — Alfalfa forage quality collection dates
May 12 — 7 pm — Pound Town Hall — Meat Animal Quality Assur.
May 21 — 9 - Noon — Harmony Arb. — Spring Plant Sale & Kid's Vegetable Gardening
May 26 — 6:30 p.m. — Harmony Arb. — Growing Veggies in Containers
June 2 — 6:30 p.m. — Harmony Arb. — Weed ID and Control
June 7 — 6:30 p.m. — Harmony Arb. — Perennials Mgmt. & Maint.
June 12 — Oconto County Breakfast on the Farm - Riewe Farms (flier in June edition, some info on page 12)
June 15-18 — Marinette & Oconto County Youth 4-H Camp
June 15 — 1 pm — Freedom — Organic Dairy Pasture Walk
(Contact Kirsten Jurcek at 920-342-9504 for details)
June 15/16 — Dubuque, IA — 4-State Dairy Nutrition Conference
June 21 — 6 p.m. — Pulaski — Meat Animal Quality Assurance
(Must register by June 8 via email to kmsanty@pulaskischools.org or by calling 920-737-6893).
June 26 — Marinette County Breakfast on the Farm at Fendryk Brothers Farm. Flier will be in June edition, but contact Corey Kuchta at 920-660-4182 if you want to donate, volunteer, or otherwise assist.

If you sell any type of product directly from your farm (or road-side stand, etc..) read and respond to this notice!

Whatever product you sell, be it maple syrup, fruit, vegetables, eggs, meat products, shares of a CSA, or anything else, we want & need your information. We publicize this information free of charge via the Marinette, Florence, and Oconto Counties' Produce Growers Guide. This guide is used by residents and visitors to the area to purchase locally-produced products.

We continually update our web page version, whenever we get new information. In June, we will be reprinting the paper version, which gets distributed to about 7,000 households in the area. Thus, we want to add any operations who are not currently in the guide. Any operation that is based in Oconto, Marinette, or Florence Counties is eligible to have their information included.

We need your information for these guides to be complete:

- Name &/or business name
- Phone number
- Mailing Address
- Place/address of where products are sold
- What products are sold
- When these products are available for sale
- Any special information that applies to your operation, such as certified organic, call ahead for orders larger than 10 lbs, or whatever else is appropriate.

If you have any questions, please call Scott or Gina at 715-732-7510, or send your information to:
Marinette County UW-Extension; 1926 Hall Avenue; Marinette, WI 54143

Crop Thoughts (not to be confused with the old SNL "Deep Thoughts")

<u>Dairy Farms</u> To say the least, the milk price outlook is not conducive to spending any unwarranted funds on crops. Thus, plan accordingly. We certainly need to prioritize getting enough high-quality haylage and corn silage off our own acres. But, this may be a year to consider other, less costly, crops on marginal (too dry, too wet, too uneven) acres. Small grain forages, Italian ryegrass, or mixes of other alternative forages are going to cost a lot less than an acre of corn or soybeans; will yield at least a ton or two of dry matter; and will give you some additional manure spreading, fall seeding, or cover cropping options.

Regarding our normal crops, provide enough but don't go overboard. We need good weed control, but check on generics or lower-cost alternatives that fit your weed spectrum. Crops need sufficient nutrients, but this could be a good year to draw down the phosphorus banks in the soil, and maybe even potassium where you know you have enough. That said, we can't skimp on nitrogen (but take manure and alfalfa credits into account) any lower than about 100 lbs. Actual nitrogen, nor can we afford to not have sufficient potassium for forage crops. It is a bit heretical to say it, but can you book fall corn grain for less than you can produce it???, again especially on those marginal acres.

<u>Grain Farms</u> There may be fewer viable alternatives, but consider working with neighboring livestock farms. Selling corn silage vs. drying and selling grain may be a viable option. Planting longer maturity soybeans and getting maximum soybean production, rather than trying to plant winter wheat after soybeans (can you make money on less than $5 wheat?) may be a valid thought this year. Is it the year to put a cover crop in on marginal acres to build soil organic matter, rather than trying to harvest an unprofitable crop?

<u>This is just a couple things to consider, talk to me or your farm's consultants to do your own version of a cropping plan double-check.</u>

Using High-Input Systems for Soybean Management Increases Yield but Not Profitability

David A. Marburger, Department of Agronomy, University of Wisconsin-Madison; John M. Orlowski, Delta Research and Extension Center, Mississippi State University; Bryson J. Haverkamp, Department of Agronomy, Kansas State University; Randall G. Laurenz, Department of Plant, Soil, and Microbial Sciences, Michigan State University; Eric W. Wilson, Department of Agronomy and Plant Genetics, University of Minnesota; Shaun N. Casteel, Department of Agronomy, Purdue University; Seth L. Naeve, Department of Agronomy and Plant Genetics, University of Minnesota; Emerson D. Nafziger, Department of Crop Sciences, University of Illinois; Kraig L. Roozeboom, Department of Agronomy, Kansas State University; William J. Ross, Department of Crop, Soil, and Environmental Sciences, University of Arkansas; Kurt D. Thelen, Department of Plant, Soil, and Microbial Sciences, Michigan State University; Chad D. Lee, Department of Plant and Soil Sciences, University of Kentucky; Shawn P. Conley, Department of Agronomy, University of Wisconsin-Madison

IN A BEAN POD…

☑ High-input management systems significantly increased yield on average in the Central (IA, IL, IN) and North (MI, MN, WI) regions, but not in the South (AR, KS, KY) region.

☑ Although the high-input management systems increased yield, the probability of breaking-even on the investment was less than 10% for most of the different yield and sale price combinations analyzed.

☑ Cultivar selection and high-input system use rarely interacted, suggesting these two management decisions can remain independent.

INTRODUCTION

Increased soybean commodity prices in the last 10 years have generated interest in developing high-input systems to increase yield. However, little peer-reviewed information exists about the effects of input-intensive, high-yield management on soybean yield and profitability, as well as their interactions with basic agronomic practices.

In 2009, the United Soybean Board funded a study called the "Kitchen Sink Project" to begin examining some of these questions. The research was conducted in six states (Arkansas, Iowa, Kentucky, Louisiana, Michigan, and Minnesota) from 2009 to 2011. While there were several projects within this study, one of the main projects focused on row spacing and a "kitchen sink" approach to input use. The "kitchen sink" treatment included additional soil-applied fertilizer, seed treatment fungicides and insecticide, seed-applied inoculant, foliar fertilizer, and foliar fungicide. Some of the highlights from this particular study included:

☑ Narrow row spacing (≤20 in) produced the highest yields.

☑ Wide row spacing with the "kitchen sink" treatment yielded similar to narrow row spacing without the "kitchen sink" treatment.

☑ Foliar fungicide was the input that gave the most consistent positive yield response.

More information regarding the "Kitchen Sink Project" can be found at http://www.usb-extremebeans.com.

Beginning in 2012, the United Soybean Board funded a follow-up multi-state project, nicknamed "SOYA," to build off of the research conducted in the "Kitchen Sink Project." One of the main objectives of this project was to investigate the effects of more inputs and more combinations of these inputs as part of high-input systems on soybean and profitability. Other objectives were to investigate how these high-input systems interact with other agronomic practices. Two of these experiments will be presented in this article.

Field experiments were established at 20 locations spanning nine states from 2012 to 2014 (Figure 1). Study locations were managed by cooperating researchers at the eight major land-grant universities who participated in the study.

EXPERIMENT 1: EVALUATING INPUT-INTENSIVE MANAGEMENT SYSTEMS

The objective of this study was to investigate the effects of individual inputs, including seed treatments, growth promoters, defoliant, soil-applied nitrogen fertilizer, foliar fertilizer, N,N'-diformyl urea, foliar fungicide, and foliar insecticide, as well as combinations of these inputs on soybean seed yield and economic break-even probabilities (Orlowski et al., 2016). The individual inputs, as well as several high-input systems, were evaluated against the standard practice. The standard practice consisted of university recommendations for fertilizer and weed control programs, narrow spacing (≤20 in), optimal plant-

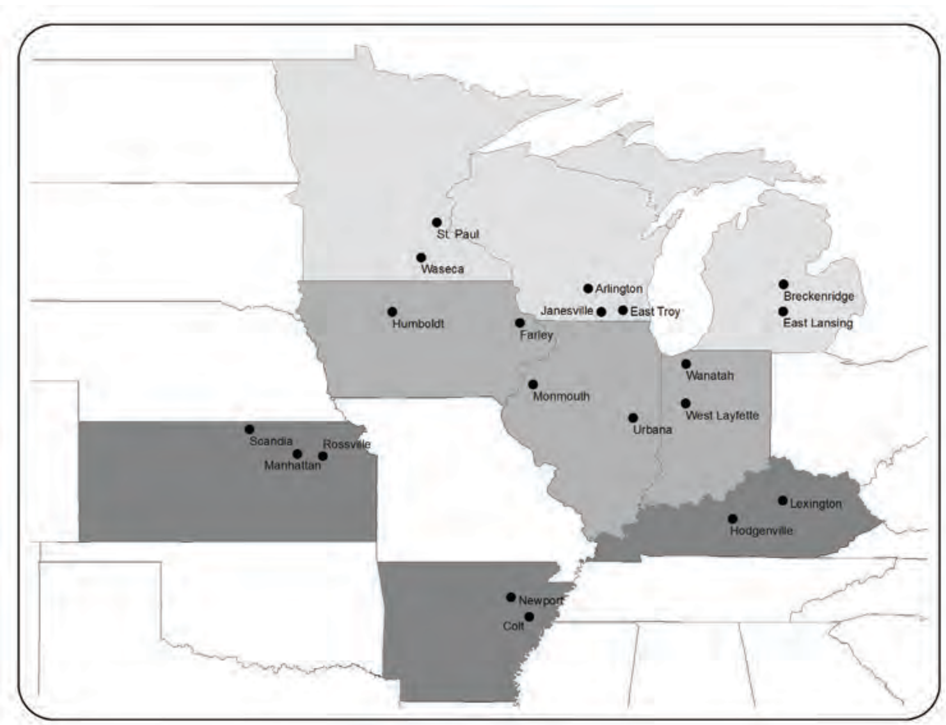

Figure 1. Field experiment locations from 2012 to 2014. States were grouped into regions which were South (dark gray), Central (gray), and North (light gray).

Table 1. Component products, active ingredients, and application rates and timings for the 16 treatments used in Experiment 1 between 2012 and 2014.

					TREATMENTS §															
					SEED TREATMENT			FOLIAR-APPLIED							COMBINATION					
Product†	Active ingredient	Rate	Timing	SP‡	F ST	F + I ST	Max ST	D	N	F	DU	FF	FI	FF + FI	SOYA	SOYA+ D	SOYA- N	SOYA- FF	SOYA-FF and FI
Acceleron F	pyraclostrobin + metal-axyl + fluxapyroxad	1.6 fl oz/ 100 lb seed	Seed	-	+	+	+	-	-	-	-	-	-	-	+	+	+	+	+
Acceleron I	imidacloprid	4 fl oz/ 100 lb seed	Seed	-	-	+	+	-	-	-	-	-	-	-	+	+	+	+	+
Poncho/Votivo	clothianidin + *Bacillus firmus*	1 fl oz/ 100 lb seed	Seed	-	-	+	+	-	-	-	-	-	-	-	+	+	+	+	+
Optimize	*Bradyrhizobium japonicum* + LCO ¶	2.8 fl oz/ 100 lb seed	Seed	-	-	-	+	-	-	-	-	-	-	-	+	+	+	+	+
Ratchet	LCO ¶	4 fl oz/a	V4-V6	-	-	-	+	-	-	-	-	-	-	-	+	+	+	+	+
Cobra	lactofen	12 fl oz/a + 1% v/v COC	V4	-	-	-	-	+	-	-	-	-	-	-	-	+	-	-	-
Urea#	46-0-0 %N-P_2O_5-K_2O	75 lb/a	V4	-	-	-	-	-	+	-	-	-	-	-	+	+	-	+	+
ESN	44-0-0 %N-P_2O_5-K_2O	75 lb/a	V4	-	-	-	-	-	+	-	-	-	-	-	+	+	-	+	+
Task Force II	11-8-5-0.1-0.05-0.040.02-0.00025-0.00025 %N-P_2O_5-K_2O-Fe-Mn-Zn-B-Co-Mo	64 fl oz/a	R1	-	-	-	-	-	-	+	-	-	-	-	+	+	+	+	+
Bio-Forge	N,N′-diformyl urea	16 fl oz/a	R3	-	-	-	-	-	-	-	+	-	-	-	+	+	+	+	+
Priaxor††	pyraclostrobin + fluxapy-roxad	8 fl oz/a	R3	-	-	-	-	-	-	-	-	+	-	+	+	+	+	-	-
Endigo††	lambda-cyhalothrin + thiamethoxam	4 fl oz/a	R3	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+	-

† Acceleron® (Monsanto Co.); Poncho®/Votivo® (Bayer Crop Science); Optimize® (Novozymes); ESN [environmentally smart nitrogen (polymer-coated urea)] (Agrium); Ratchet™ (Novozymes); Cobra® (Valent USA Corp.); Task Force® 2 (Loveland Products, Inc.); Bio-Forge® (Stoller USA, Inc.); Priaxor™ (BASF Corp.); Endigo® (Syngenta Crop Protection).

‡ SP, standard practice. This consisted of following university guidelines for fertilizer and herbicide applications. No other inputs were used.

§ F ST, fungicide seed treatment; F + I ST, fungicide + insecticide seed treatment; D, defoliant; N, soil-applied nitrogen fertilizer; F, foliar fertilizer; DU, N,N′-diformyl urea; FF, foliar fungicide; FI, foliar insecticide; FF + FI, foliar fungicide + foliar insecticide.

¶ LCO; lipo-chitooligosaccharide.

Treated with Agrotain® [N-(n-butyl) thiophosphoric triamide] (Koch Agronomic Services, LLC) at a rate of 95 fl oz/ton.

†† Headline® fungicide (BASF Corp.) was used in 2012. Warrior II® insecticide (Syngenta Crop Protection, LLC) was used in 2012.

ing dates, and a seeding rate of 175,000 seeds/a. No other inputs were used in the standard practice. Products and rates for the 16 different treatments evaluated in this study are listed in Table 1.

Sixty site-years of data were collected. Analyzing the yields within each individual site-year revealed significant differences among the treatments were observed in 26 of 60 site-years (43%), and the majority of the responsive site-years were found in the northern Midwest.

When the site-years were grouped by region (see Figure 1), the analysis for the South region showed no differences in yield among any of the input treatments. Economic break-even probabilities in the South region were ≤2% for all high-input systems (i.e., the SOYA treatments) across all yield levels and sale prices (Table 2). The only input which demonstrated a break-even probability >50% for any of the yield and sale price combinations was the defoliant.

In the Central region, the defoliant significantly decreased yield by 4.7% compared to the standard practice. The only treatment which increased yield compared to the standard practice was the SOYA treatment. However, break-even probabilities for all five high-input systems were 0% for all yield and sale price combinations (Table 3). Foliar insecticide was the only input that achieved break-even probabilities over 50%.

Table 2. Percent relative yield change and break-even probabilities for input treatments compared to the standard practice at multiple yield levels and soybean sale prices for studies across the South region (Arkansas, Kansas, and Kentucky) between 2012 and 2014. Average yield for the standard practice in the South region across all three years of the experiment was 61.1 bu/a.

Input	Cost ($/a)	RYC (%)†	45 bu/a $9	45 bu/a $12	45 bu/a $15	60 bu/a $9	60 bu/a $12	60 bu/a $15	75 bu/a $9	75 bu/a $12	75 bu/a $15
			% probability of break-even								
Fungicide ST	$8.75	-1.5	13	18	21	18	22	25	21	25	27
Fungicide + Insecticide ST	$21.25	-1.0	2	7	11	7	13	18	11	18	23
Max ST	$24.25	1.2	7	17	27	17	30	39	27	39	47
Foliar Fertilizer	$19.00	0.2	9	19	27	19	29	36	27	36	42
Defoliant (D)	$18.11	1.2	31	47	57	47	60	67	57	67	72
Nitrogen fertilizer(N)	$44.22	0.0	0	0	2	0	2	6	2	6	12
N,N'-diformyl urea	$20.80	-0.5	4	9	15	9	17	23	15	23	28
Foliar Fungicide (FF)	$38.90	0.5	0	0	2	0	3	6	2	6	11
Foliar Insecticide (FI)	$13.79	-1.5	8	13	18	13	19	23	18	23	27
Foliar Fungicide + Insecticide	$44.69	0.0	0	0	1	0	1	4	1	4	8
SOYA‡	$152.96	4.4	0	0	0	0	0	0	0	0	0
SOYA + D	$171.07	3.7	0	0	0	0	0	0	0	0	0
SOYA - N	$108.74	2.9	0	0	0	0	0	0	0	0	1
SOYA - FF	$114.06	3.4	0	0	0	0	0	0	0	0	2
SOYA - FF and FI	$108.27	1.5	0	0	0	0	0	0	0	0	0

Column groups: Yield level (45 bu/a, 60 bu/a, 75 bu/a); Soybean sale price ($9, $12, $15).

† RYC, percent relative yield change compared to the standard practice. Average yield for the standard practice in the South region was 61.1 bu/a.

‡ SOYA, high-input treatment consisting of the max ST, nitrogen fertilizer, foliar fertilizer, N,N'-diformyl urea, foliar fungicide, and foliar insecticide.

Field trial in East Troy, WI in June 2014 depicting the 16 input treatments evaluated in Experiment 1.

Table 3. Percent relative yield change and break-even probabilities for input treatments compared to the standard practice at multiple yield levels and soybean sale prices for studies across the Central region (Illinois, Indiana, and Iowa) between 2012 and 2014. Average yield for the standard practice in the Central region across all three years of the experiment was 60.1 bu/a.

			Yield level								
			45 bu/a			60 bu/a			75 bu/a		
			Soybean sale price								
Input	**Cost ($/a)**	**RYC (%)†**	**$9**	**$12**	**$15**	**$9**	**$12**	**$15**	**$9**	**$12**	**$15**
			--------------------- % probability of break-even ---------------------								
Fungicide ST	$8.75	-0.5	9	16	21	16	23	28	21	28	32
Fungicide + Insecticide ST	$21.25	0.5	0	1	2	1	3	6	2	6	10
Max ST	$24.25	-0.5	0	0	1	0	1	2	1	2	5
Foliar Fertilizer	$19.00	-0.7	0	1	2	1	3	5	2	5	9
Defoliant (D)	$18.11	-4.7	0	0	0	0	0	0	0	0	0
Nitrogen fertilizer(N)	$44.22	1.2	0	0	0	0	0	2	0	2	6
N,N'-diformyl urea	$20.80	-0.2	0	1	2	1	3	7	2	7	11
Foliar Fungicide (FF)	$38.90	2.5	0	0	2	0	4	13	2	13	28
Foliar Insecticide (FI)	$13.79	1.5	19	37	49	37	53	62	49	62	69
Foliar Fungicide + Insecticide	$44.69	3.5	0	0	3	0	6	22	3	22	43
SOYA‡	$152.96	5.2	0	0	0	0	0	0	0	0	0
SOYA + D	$171.07	3.2	0	0	0	0	0	0	0	0	0
SOYA - N	$108.74	3.5	0	0	0	0	0	0	0	0	0
SOYA - FF	$114.06	2.7	0	0	0	0	0	0	0	0	0
SOYA - FF and FI	$108.27	2.7	0	0	0	0	0	0	0	0	0

† RYC, percent relative yield change compared to the standard practice. Average yield for the standard practice in the Central region was 60.1 bu/a.

‡ SOYA, high-input treatment consisting of the max ST, nitrogen fertilizer, foliar fertilizer, N,N'-diformyl urea, foliar fungicide, and foliar insecticide.

As demonstrated from the individual site-year analysis, more yield responses to the input treatments were observed in the North region. Similar to results in the Central region, using the defoliant led to decreased yield (by 4.1%) compared to the standard practice. On the other hand, the treatments that yielded significantly greater than the standard practice were: max seed treatment, nitrogen fertilizer, foliar fungicide, foliar insecticide, foliar fungicide + foliar insecticide, and all five SOYA treatments.

For the high-input systems, break-even probabilities were <40% at all yield and sale prices for SOYA, SOYA + D, and SOYA – FF and FI (Table 4). However, two of the high-input systems (SOYA – N and SOYA – FF) achieved a break-even probability >50%, but only at the highest yield and grain sale price. For the other input treatments that significantly increased yield compared to the standard practice, the max seed treatment had ≥50% break-even probabilities at all but the lowest yield level and soybean sale price. The nitrogen fertilizer and foliar fungicide treatments only achieved a break-even probability at, or above, 50% at the highest yield level and grain sale price. In contrast, break-even probabilities (≥98%) were observed for the foliar insecticide and foliar fungicide + foliar insecticide treatments at nearly all yield and sale price scenarios.

It is important to remember that the break-even probabilities calculated in this study were based off the costs we were able to obtain for each input (Tables

Table 4. Percent relative yield change and break-even probabilities for input treatments compared to the standard practice at multiple yield levels and soybean sale prices for studies across the North region (Michigan, Minnesota, and Wisconsin) between 2012 and 2014. Average yield for the standard practice in the North region across all three years of the experiment was 61.1 bu/a.

			Yield level								
			45 bu/a			60 bu/a			75 bu/a		
			Soybean sale price								
Input	**Cost ($/a)**	**RYC (%)†**	**$9**	**$12**	**$15**	**$9**	**$12**	**$15**	**$9**	**$12**	**$15**
			% probability of break-even								
Fungicide ST	$8.75	1.0	27	39	46	39	48	54	46	54	59
Fungicide + Insecticide ST	$21.25	1.7	1	5	13	5	15	25	13	25	36
Max ST	$24.25	3.9	18	50	71	50	76	87	71	87	93
Foliar Fertilizer	$19.00	2.4	5	17	30	17	34	47	30	47	57
Defoliant (D)	$18.11	-4.1	0	0	0	0	0	0	0	0	0
Nitrogen fertilizer(N)	$44.22	3.9	0	0	5	0	9	27	5	27	50
N,N′-diformyl urea	$20.80	1.0	1	7	15	7	18	29	15	29	39
Foliar Fungicide (FF)	$38.90	4.6	0	3	16	3	23	47	16	47	67
Foliar Insecticide (FI)	$13.79	7.1	99	99	99	99	99	99	99	99	99
Foliar Fungicide + Insecticide	$44.69	11.2	64	98	99	98	99	99	99	99	99
SOYA‡	$152.96	11.9	0	0	0	0	0	1	0	1	36
SOYA + D	$171.07	7.5	0	0	0	0	0	0	0	0	0
SOYA - N	$108.74	9.0	0	0	0	0	0	12	0	12	63
SOYA - FF	$114.06	10.7	0	0	0	0	1	31	0	31	86
SOYA - FF and FI	$108.27	6.3	0	0	0	0	0	0	0	0	2

† RYC, percent relative yield change compared to the standard practice. Average yield for the standard practice in the South region was 61.1 bu/a.

‡ SOYA, high-input treatment consisting of the max ST, nitrogen fertilizer, foliar fertilizer, N,N′-diformyl urea, foliar fungicide, and foliar insecticide.

Field trial in Arlington, WI in early October 2014 depicting the six soybean cultivars near maturity (R8) which were grown under the three different input systems in Experiment 2.

2-4). Our input costs were derived from publicly available sources and industry representatives. Application costs were included for some inputs, but not for others. For example, it was assumed that the defoliant treatment could be applied to the soybean crop in a tank mix with a standard post-emergence herbicide application at V4, and therefore, no additional application costs would be incurred by the soybean producer. We understand these input costs will vary. Using your own input costs, you can determine whether or not input costs were covered based on the relative yield changes (RYC) listed for your region (Tables 2-4), your average yield, and your grain sale price.

EXPERIMENT 2: EVALUATING CULTIVAR AND HIGH-INPUT SYSTEM INTERACTIONS

The objective of this study was to evaluate cultivar × input system interactions on soybean yield and yield components (Marburger et al., 2016). Six soybean cultivars, representing high-yield potential cultivars suitable for each specific location, were chosen by the collaborating university agronomist from each state. The six chosen cultivars were evaluated under three input systems: the standard practice, SOYA, and SOYA – FF. See Table 1 product rates and inputs for each input system.

Fifty-three site-years of data were used for analysis. Analyzing the yields within each individual site-year found only 3 of 53 (5.7%) site-years had a significant cultivar × input system interaction. Because of this low percentage, this suggests that cultivar selection and the high-input systems used as part of this study can most often remain as separate management decisions. When the data were analyzed by each region, both high-input systems (SOYA and SOYA-FF) increased yield compared to the standard practice within all three regions, but a yield increase from fungicide use (i.e., part of the SOYA treatment) was only observed in the North region. Across all site-years, the SOYA and SOYA-FF treatments yielded 3.4 (5.5%) and 2.2 bu/a (3.5%) more than the standard prac-

tice, respectively. Furthermore, the yield component measurements (seeds m^{-2}, seed mass, early-season and final plant stand, pods $plant^{-1}$, and seeds pod^{-1}) indicated the positive yield responses for the high-input systems were due to increased seeds m^{-2} and seed mass.

CONCLUSIONS AND RECOMMENDATIONS

Following established soybean management recommendations developed by university research and Extension programs will allow soybean producers to maximize soybean yield and profitability under most circumstances. Growers in the Mid-South and lower Midwest are unlikely to see positive economic returns from prophylactic use of inputs and combinations of inputs (i.e., high-input systems) in their soybean management, especially in the absence of pest pressure.

Meanwhile, growers in the upper Midwest may see responses to certain additional inputs, especially at higher yield levels and soybean prices. However, lower soybean prices will significantly decrease break-even probabilities for individual and combinations of inputs. The yield responses and subsequent break-even probabilities associated with the foliar insecticide and foliar fungicide and insecticide combination were found even though disease and insect pressure were low at most locations each year. Because this particular experiment was based on applying inputs prophylactically, it is not quite 'real world' from this aspect, as things like fungicide and insecticide resistance management were not taken into consideration. Therefore, we still recommend applying foliar fungicides and insecticides based on integrated pest management principles (IPM) and at established thresholds.

Soybean producers should continue focusing on ensuring that basic agronomic practices, such as adequate seeding rates, adapted cultivars, proper soil fertility, and IPM principles are optimized and should not expect dramatic increases in yield and profitability solely from the inclusion of additional inputs into their management systems.

Data from:

Marburger, D.A., B.J. Haverkamp, R.G. Laurenz, J.M. Orlowski, E.W. Wilson, S.N. Casteel, C.D. Lee, S.L. Naeve, E.D. Nafziger, K.L. Roozeboom, W.J. Ross, K.D. Thelen, and S.P. Conley. 2015. *Characterizing genotype × management interactions on soybean seed yield*. Crop Science 56:786-796.

Orlowski, J.M., B.J. Haverkamp, R.G. Laurenz, D.A. Marburger, E.W. Wilson, S.N. Casteel, S.P. Conley, S.L. Naeve, E.D. Nafziger, K.L. Roozeboom, W.J. Ross, K.D. Thelen, and C.D. Lee. 2015. *High-input management systems effect on soybean seed yield, yield components, and economic break-even probabilities*. 2016. Crop Science in press.

Planning First-crop Forage Harvest Timing

First, try not to let other people dictate your decision making. Yes, I fully understand the significant role that timing of custom harvesters' availability plays in your decision making, but you need to end up with the type of feed necessary for your farm. I am starting quality surveying earlier than normal this year, to help meet the stated need of some dairy farms to have higher quality (180 RFQ or more) haylage coming out of the bunker. Hopefully, there won't be too many farms which need to struggle with the decision between planting and harvesting, but if you do get into that boat and want another set of eyes to help analyze what is best for your operation, call me.

Okay, all that said, here's your annual reminder about forage quality realities:

A normally expected RFQ (Relative Forage Quality) drop per day would be about four or five points. Warm, sunny weather will accelerate maturation such that the RFQ will drop more quickly, as much as 8 or 9 pts/day. It is always a bit risky to plan on any particular number drop, but use the 5 point average as your best guess. Conditions this year make me believe that when we get some sustained warmth, the alfalfa quality is going to drop relatively quickly, as growth could be substantial. See the next page for dates when new alfalfa data will be available, or conduct your own PEAQ analysis for your fields and then plan as best you can.

What does this mean?

#1. Harvesting causes at least a 10% quality loss. Thus, you need to harvest fields by the time they reach an RFQ of 180 so that you end up with 160 RFQ hay/haylage. You also have to take into account daily drops in quality and begin early, such that all your fields are harvested according to your quality goals.

#2. Use this information to plan around your forage needs.
Grassy or weedy fields will have lower RFQ values than will pure alfalfa stands, usually by about 10-15%. Your forage needs will dictate your harvesting order. If you only need dairy-quality forage, I would start harvesting the grassy/weedy fields first and leave the pure alfalfa stands for the end, as they should still be in the correct range.
If you need lower-quality forage feedstuffs, you have some time before you get started.
If you need a mix of forages, I would strongly consider harvesting pure alfalfa stands first for high-quality forage and leaving the grassy/weedy stands for high-yielding heifer & dry cow or beef hay.

#3. Red clover stands will hold their feed value longer. These fields can likely be harvested last and will probably still have RFQ values in the 150 range.

#4. Weigh the trade-offs for your operation. Every day you wait to cut, you lose quality, but gain quantity. Decide which is most important for your operation and plan your cutting schedule on those needs.

#5. If in doubt, ask. First crop is our most critical forage crop, as it usually makes up 40-60% of our total yield for the year, depending on your cutting management. If you are uncertain what the best harvest schedule is for your operation, please call either myself at the UWEX office, 715-732-7518 or 1-877-884-4408 OR call other agronomists, your nutritionist, or other consultants that can help you weigh this very important decision point.

#6. Be ready to go with any post-harvest treatments, such as fertilization or manure spreading. You really need to get any post-harvest driving on those stands done as fast as possible, so that you minimize the wheel damage, preferably getting everything done within four days of cutting. This is particularly important if you have lower fall dormancy alfalfa cultivars in your fields.

#7. Do you know what you're doing with your alfalfa acres after harvest? I don't ask this to be rhetorical. There are going to be at least some acres of alfalfa killed and then planted to something else, or inter-seeded immediately after first-crop. Know what you're going to do, so that you have no more delays than necessary. This will be especially true if you that experienced any winter stand thinning. Those should probably also be your first fields harvested, as they will usually be lowest in forage quality due to lower density and thicker stems.

Of course, nature trumps all our planning some years!

Where to get up-to-the-minute forage quality data:

Option #1. Conduct PEAQ (Predictive Estimated Alfalfa Quality) testing on your own fields. If you need the PEAQ table, it is available all over on the web, including at http://www.uwex.edu/ces/forage/pubs/rfv-peaq.html This works very well. My comparison of doing PEAQ and Scissors Clip for many years leads me to believe that PEAQ is actually more accurate than Scissors Clip, especially on less-mature forages.

Option #2. Contact one of the following for our local First Crop Quality Data, updated weekly:

Marinette & Oconto County Scissors Clip Hotline 1-877-884-4408 or 715-732-7518.

e-mail to scott.reuss@ces.uwex.edu

Online at http://www.uwex.edu/ces/ag/scissorsclip/ to get data from across the state as well as local data. You can look at how alfalfa quality is progressing further south, and simply click on our region to see our most recent data set.

Scott will be collecting PEAQ data every Wednesday starting May 11th, going through at least June 8th. The use of PEAQ allows for a larger number of fields to be sampled, so there should be a field relatively close to your locale that you can use as an indicator.

By using PEAQ, I am able to collect data from a large number of fields, so I should have data within shouting distance of you, wherever you are located. If you're interested in having one of your fields on the rotation, let me know. The message each time will give the place and the average RFV for each individual site.

Use of Inoculant - UW-Extension does recommend use of a Lactobacillus inoculant on first cutting because bacteria levels are naturally low on alfalfa grown under cool weather conditions. The value of added inoculant to chopped forage is increased when cool or outright cold weather occurs in days leading up to harvest. Use of inoculant has been shown to be most beneficial if the forage can be ensiled rapidly; forage left laying in the field for more than two days will likely not benefit from added inoculant. Also, benefit of inoculant use for baleage is doubtful due to inability to get good coverage as forage is being baled.

Oconto County Breakfast on the Farm

Oconto County Breakfast on the Farm will be held on Sunday, June 12, 2016 at Riewe Farms, 6947 Old 15 Road, Oconto. A flag raising ceremony will begin at 7:30 am and breakfast will be served from 8 am until 1 pm! Plans for the event are well underway.

Riewe Farms is a 4th generation family owned and operated dairy farm. It was originally purchased by Adolph and Ida Riewe in 1915. Clair and Delores Riewe took over operating the farm in 1946. Richard and Diane began farming in 1982 and currently run the farm with their two sons Charles (Keriann) and Kenny (Stevie). In 2015, the farm celebrated 100 years of continuous family ownership. The farm has grown over the years to 230 acres. The family raises their own heifers and does all of their own fieldwork. They are currently milking 85 cows in a double 8 parallel parlor twice a day. A new free stall barn was constructed in 2014. The cows were moved into the barn and started milking Christmas of 2014. Milk is shipped through Agropur Cooperative.

Oconto County is home to more than 929 farms, with an average size of about 160 acres. Of those, 154 are dairy farms. The county ranks 26th in the state and among the top 100 U.S. counties in the value of dairy production. Oconto County famers own and manage 189,389 acres (30 percent) of the county's land.