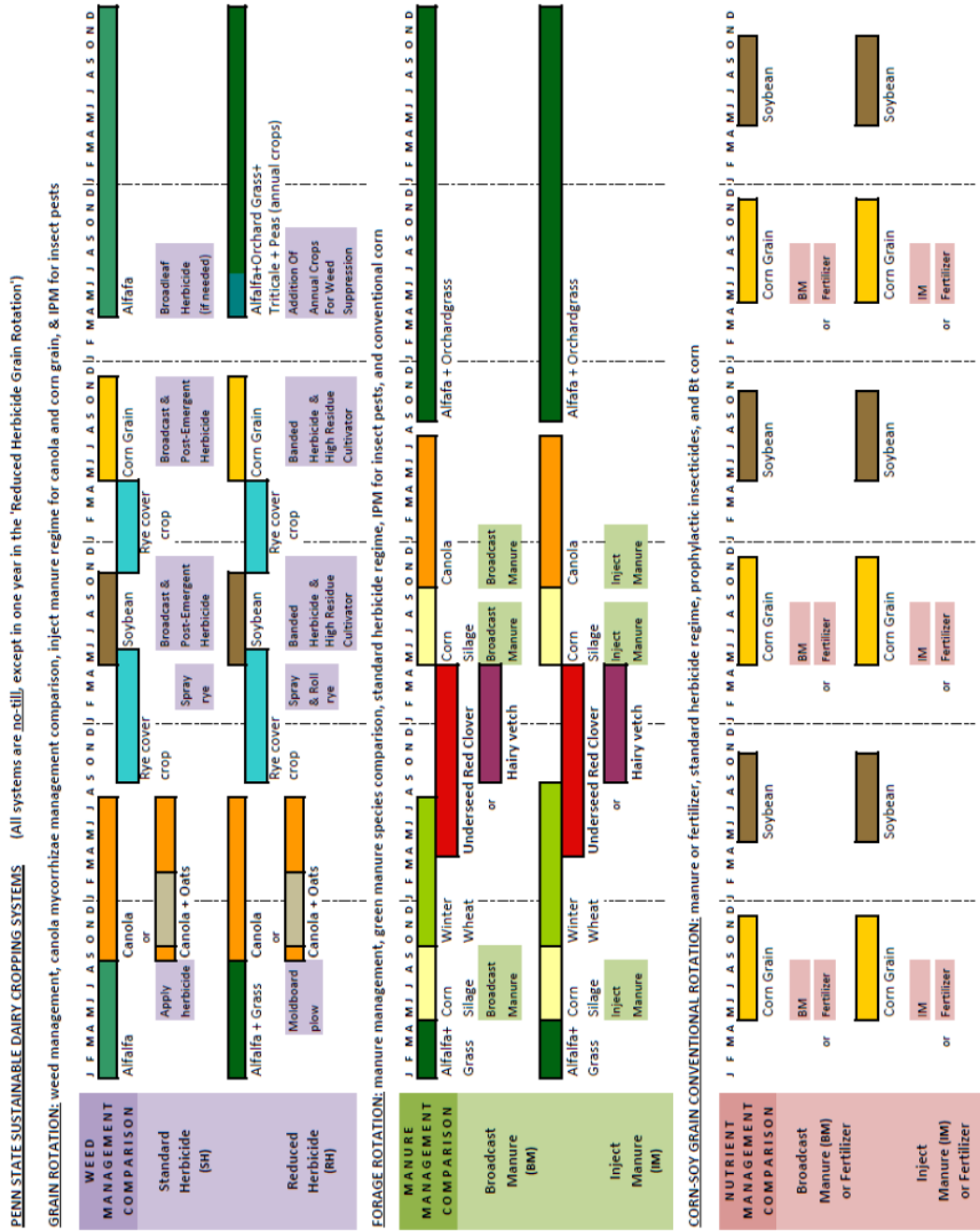


Fig. 1. Cropping Systems Schematic (2010-2012)



A.7: NESARE PLANTING & HARVESTING INFORMATION: 2012

Rotation	Crop	Variety	Date of planting	Date of harvest / termination	Seed rate (per acre)	Seed depth (in)	Row spacing (in)	Maturity	Transgenic Traits
Forage Rotation	Alfalfa & Orchard-grass (fall plant 2011-Yr 1)	Alfalfa: Genoa Orchardgrass: Extend Bovine Bounty BMR	Replant: 4/5/12, 5/13/12, 6/7/12 (ss grass)	SS grass: 7/24, 8/30	alf: 10 lb grass: 4 lb sorgh: 65 lb	1/4-1/2	7.5		
	Alfalfa & Orchard-grass (Yr 2)	Alfalfa: Genoa Orchardgrass: Extend	See 2010/2011 table.	5/11, 6/8, 7/9, 8/3, 9/6	alf: 10 lb grass: 4 lb	1/4-1/2	7.5		
	Alf & Og (fall OAT plant 2012)	Oat: Furlong	9/6/12	will be cut in 2013	oat; 3 bu alf: 10 lb grass: 4 lb	1/4-1/3	7.5		
	Canola (spring plant 2012)	Aroostock/Rye CL5525/Canola	9/21/11 - rye 4/10/12 - spr canola	East side: 7/23 West Side: 7/26	6.5 lb	3/4	7.5		None Clearfield
	Canola (fall plant 2012) *RYE*	Rye: Aroostock	10/15/12	will be harvested in 2013	120 lb	1-1.25	7.5		
	Corn Silage before wheat	TA290-08	6/7/12	Alf before corn harvested on 5/11/2012	35 k	1.5	30	89 _{CRM}	LL
	Corn Silage before canola	TA290-08	5/18/12	9/7/12	35 k	1.5	30	89 _{CRM}	LL
	Hairy Vetch + Trit (fall plant 2011)	HV: Auburn (AU) Triticale: Trical 815	9/1/11	5/12/12	HV: 20 lb oats: 20 lb	≤1	7.5		
	Hairy Vetch + Triticale (fall plant 2012)	HV: Auburn (AU) Triticale: Trical 815	8/30/12	will be killed in 2013	HV: 30 lb trit: 30 lb	≤1	7.5		
	Red Clover (spring plant 2011)	Freedom	4/21/11	5/12/12	12 lb	3/8	7.5		
	Red Clover (spring plant 2012)	Freedom	3/14/12	8/22 cutting, will be killed in 2013	12 lb	3/8	7.5		
	Winter Wheat (fall plant 2011)	FS 801 [SRW]	10/11/11	7/6	120 lb	1-1.25	7.5		
	Winter Wheat (fall plant 2012)	FS 801 [SRW]	10/12/12	will be harvested in 2013	120 lb	1-1.25	7.5		
Corn-Soy Rotation	Corn Grain	Pioneer 35F48AM	5/1/12		32 k	1.5	30	105 _{CRM}	HXX, LL, RR2
	Soybean	Growmark HS32A90	5/31/12 replant drilled: 6/15	10/25/12	200 k	1-1.5	7.5/30	3.2	RR

A.7 (cont.): NESARE PLANTING & HARVESTING INFORMATION: 2012

Rotation	Crop	Variety	Date of planting	Date of harvest / termination	Seed rate (per acre)	Seed depth (in)	Row spacing (in)	Maturity	Transgenic Traits
Grain Rotation	Alfalfa (establish)/ Yr 1	Genoa	4/5/12	6/20, 7/30, 9/6	18 lb	1/4-1/2	7.5		
	Triticale, Peas, Alfalfa, & Orchard- grass (establish)/ Yr 1	Triticale: 718 Peas: 40-10	4/5/12	6/20, 7/30, 9/6	trit: 30 lb pea: 30 lb alf: 10 lb grass: 4 lb	1/4-1/2	7.5		
	Alfalfa (Yr 2)	Genoa	See 2011 table.	5/25, 6/26, 7/24, 8/22	18 lb	1/4-1/2	7.5		
	Alfalfa (Yr 3)	Genoa	See 2010 table.	5/25, 6/26, 7/24 terminated: 8/8	18 lb	1/4-1/2	7.5		
	Alfalfa & Orchard- grass (Yr 2)	Alfalfa: Genoa Orchardgrass: Extend	See 2011 table.	5/11, 6/8, 7/9, 8/3, 9/6	alf: 10 lb grass: 4 lb	1/4-1/2	7.5		
	Alfalfa & Orchard- grass (Yr 3)	Alfalfa: Genoa Orchardgrass: Extend	See 2010 table.	5/11, 6/8, 7/9, 8/3 terminated: 8/8	alf: 10 lb grass: 4 lb	1/4-1/2	7.5		
	Canola & Canola+Oats (fall plant 2011 + spring plant 2012)	Canola: Witchita Oats: Blaze Canola: CL5525	9/14/11 replant spr canola: 4/10/12 (SH/III & IV only)	7/3/12 7/23/12	can: 6.5 lb oats: 20 lb can: 6.5 lb	3/4	7.5		None Clearfield
	Canola & Canola+Oats (fall plant 2012)	Canola: Witchita Oats: Blaze	8/25/12	will be cut in spring	can: 6.5 lb oats: 20 lb	3/4	7.5		
	Corn Grain	Pioneer 35F38	5/1/12		32 k	1.5	30	105 _{CRM}	None
	Soybeans	Growmark HS28A12 (1/2 drill, 1/2 plant)	5/31/12 replant drilled: 6/15	10/25/12	200 k	1-1.5	7.5/30	2.7	RR
	Rye	Aroostock	Ca,R: 9/21/11 R,S,R: 10/10/11	Ca,R: 4/21/12 R,S,R (SH): 4/21/12 R,S,R (RH): 5/12/12	120 lb	1-1.25	7.5		
	Rye (fall plant 2012)	Aroostock	Ca,R: 9/24/12 R,S,R: 10/26/12	to be killed in spring	120 lb	1-1.25	7.5		

A.8: NESARE NUTRIENT MANAGEMENT: 2012 (Green manure [RC and HV] and cover crops [Rye] do not receive additional nutrients.)

Rotation	Crop	Manure App Date	Actual Rate of Manure App	Fertilizer at Planting	Sidedress N (lb N/A)	POST Fertilizer App Date	POST Rate of Fertilizer Application
Forage Rotation	Alf & Og - Yr. 1 *BMR Sorghum Sudangrass in '12				6/14/12: 50 lbs N AMS 9/7/12: 50 lbs N 20-10-10		
	Alf & Og - Yr. 2					5/20/12 9/17/12	Potash: #250; 0-0-60 #250, 0-0-60
	Alf & Og (Fall 2012)					Spring 2013	TBD
	Spring Canola /rye in previous fall	10/11/11	BM: 22.3 T/A IM: 23.1 T/A			5/17/12	BM: 100 lbs AMS and 150 lbs Urea IM: 100 lbs AMS and 100 lbs Urea
	Rye/Spring Canola (Fall 2012)	10/11/12	BM: 24.0 T/A IM: 23.0 T/A			TBD	TBD
	Corn Silage (before wheat)	April 10	BM: 22.1 T/A IM: 21.5 T/A	100 lb 13-26-9	7/3 & 7/5/12: BM: 50, IM: 0		
	Corn Silage (before canola)	April 10	BM: 21.9 T/A IM: 21.3 T/A	100 lb 13-26-9	none.		
	Winter Wheat (planted Fall 2011)					March 19	#350; 21-0-0-24
	Winter Wheat (planted Fall 2012)					Spring 2013	TBD

A.8 (cont.): NESARE NUTRIENT MANAGEMENT: 2012 (Green manure [RC and HV] and cover crops [Rye] do not receive additional nutrients.)

Rotation	Crop	Manure App Date	Actual Rate of Manure App	Fertilizer at Planting	Sidedress N (lb N/A)	POST Fertilizer App Date	POST Rate of Fertilizer Application
Grain Rotation	Alf (SH) - Yr. 1					6/28/12 9/14/12	Potash: #200, 0-0-60 #150, 0-0-60
	Alf (SH) - Yr. 2					6/6/12 9/17/12	Potash: #200, 0-0-60 #200, 0-0-60
	Alf (SH) - Yr. 3					6/6/12	Potash: #100, 0-0-60
	Alf & Og, Trit & Peas (RH) Yr. 1					6/28/12 9/14/12	Potash: #200, 0-0-60 #150, 0-0-60
	Alf & Og (RH) Yrs. 2					5/20/12	Potash: #200, 0-0-60
	Alf & Og (RH) Yrs. 3					5/20/12	Potash: #200, 0-0-60
	Canola & Canola+Oats (Planted Fall 2011)	8/22/11	BM: 22.7 T/A IM: 22.3 T/A			3/26/12 5/17/12	AMS: #500, 21-0-0-24 Blocks I,II,south half III AMS: #500, 21-0-0-24 SH: Blocks III, IV
	Canola & Canola+Oats (Planted Fall 2012)	8/7/12	BM: 27.5 T/A IM: 27.4 T/A			TBD	TBD
	Corn Grain	Apr 9	IM: 22.1 T/A	100 lb 13-26-9	6/26/12: 70		none.
Soybeans					5/31/12	Potash: #50, 0-0-60	
Corn-Soy Rotation	Corn Grain	Apr 10	BM: 22.0 T/A IM: 20.8 T/A	100 lb 13-26-9 Fert Plots only: 100 lb 13-26-9 30 lb N/A liq.	6/26/12: BM: 70 IM: 50 Fert: 70	5/20/12	Potash: #50, 0-0-60
	Soybean					5/31/12	Potash: #50, 0-0-60

A.9: NESARE PEST MANAGEMENT INFORMATION: 2012

Rotation	Crop	Date of planting	Seed Treatments	Pre-emergence Treatment(s) or Burn-downs	Post-emergence Treatment(s)
Forage Rotation	Alfalfa and Orchardgrass [emergency BMR Sorghum sudan-grass planted] (Year 1)	Aug 24, 2011 (reseed: Apr 5, May 13, June 7 [BMR Sorg sudangrass])	Alf - Mefenoxam fungicide BMR SorSudGrs - ipconazole & metalaxyl fungicides + Storcide II: chlorpyrifos-methyl, deltamethrin, 1,2,4-trimethylbenzene, xylene, ethylbenzene insecticides	Apr 3: Roundup Powermax before replant at 44 oz/A 6/10: Roundup Powermax at 32 oz/A to kill volunteer canola and any alfalfa + orchard grass that came up before BMR sorg sudangrass planted.	N/A
	Alfalfa and Orchardgrass (Year 2)	Apr 15, 2010	Alf - Mefenoxam fungicide	N/A	Leaf hoppers controlled by harvesting.
	Alfalfa and Orchardgrass (Planted Fall 2012)	See 2011 table.	Alf - Mefenoxam fungicide	7/30: Plots were mowed and rotary harrowed to stimulate canola germination. 8/21: Weeds and volunteer canola killed with 32 oz Roundup Powermax and 16 oz 2,4 D-LVE.	None until 2013.
	Canola (Planted Fall 2011)	Rye: 10/10/11 Spr Canola: Apr 10, 2012		No burn-down necessary before rye was planted this fall.	7/30: Canola stubble and weeds were mowed down. 7/30: Plot was rotary harrowed to stimulate volunteers.
	Canola (Planted Fall 2012)	Rye: 10/15/12	None	9/13: Roundup Powermax @ 32 oz/A.	None until 2013 if at all.
	Corn Silage (before wheat)		None	5/26: Alf+grass killed with 44 oz Roundup Powermax + 16 oz each of 2,4 D-LVE and Clarity.	7/7: 29 oz/A Ignite.
	Corn Silage (before canola)	5/18/12	None	5/12: RC/HV killed with 32 oz Roundup Powermax + 1 pt 2,4 D-LVE + 12 oz Clarity/Banvel + AMS. HV: 5/17, Rye rolled down with roller crimper.	6/14: 29 oz/A Ignite.
	Hairy Vetch + Oats (Planted Fall 2012)			8/16: 22 oz Roundup Powermax + 16 oz 2,4 D-LVE.	None for cover crop.
	Red Clover	Mar 14	None	none.	none.
	Winter Wheat (Planted Fall 2011)	Oct 11, 2011	Difenoconazole & mefenoxam fungicides		March 22 (HV split-split plots only): Sprayed with Harmony Extra at 0.7 oz/A.
Winter Wheat (Planted Fall 2012)		Difenoconazole & mefenoxam fungicides	9/29: 28 oz Roundup Powermax + 16 oz 2,4D-ester.	None until 2013.	

A.9 (cont.): NESARE PEST MANAGEMENT INFORMATION: 2012

Rotation	Crop	Date of planting	Seed Treatments	Pre-emergence Treatment(s)	Post-emergence Treatment(s)
Grain Rotation	Alfalfa (SH) (Establish- Year 1)	4/5/12	Mefenoxam fungicide	Apr 3: 22oz Roundup Powermax to kill winter weeds	5/31: 64 fl oz Butryac + 8 oz Select + 32 fl oz COC per acre were sprayed to combat weeds. 6/9: 3 oz/A of Warrior for leaf hoppers. 7/7: 3 oz/A of Warrior for leaf hoppers.
	Alf+Og, Trit+Pea (RH), (Establish- Year 1)	4/5/12	Alf - Mefenoxam fungicide	Apr 3: 22oz Roundup Powermax to kill winter weeds	6/9: 3 oz/A of Warrior for leaf hoppers. 7/13: 3 oz/A of Warrior for leaf hoppers.
	Alfalfa (SH) & (Years 2 & 3)	See 2010 and 2011 tables.	Alf - Mefenoxam fungicide	N/A	6/9: 3 oz/A of Warrior for leaf hoppers. 7/13: 3 oz/A of Warrior for leaf hoppers.
	Alf+Og (RH) (Years 2 & 3)	See 2010 and 2011 tables.	Alf - Mefenoxam fungicide	N/A	Leaf hoppers controlled by harvesting.
	Canola & Canola+Oats (Planted Fall 2011)	9/14/11 replant spr canola: 4/10/12 (SH/III & IV only)	None	See 2011 management chart.	7/30: Canola stubble and weeds were mowed down. 7/30: Plot was rotary harrowed to stimulate volunteers.
	Canola & Canola+Oats (Planted Fall 2012)	8/25/12		RH: 8/8, 8/13, 8/22, 8/25: Moldboard Plow, Disc, S-tine, Culti-pac SH: 8/7: 32 oz Roundup Powermax + 16 oz 2,4 D-LVE.	9/17: 8 oz Stinger (clopyralid), 8 oz Select 2E (clethodim), and 0.25% v/v NIS to control volunteer alfalfa and orchard grass in those plots
	Corn Grain	5/1/12	None	4/21: Rye was burned down with 22 oz Roundup Powermax and 1 pt 2,4 D-LVE. 5/1: RH: 3 oz Callisto, 1.67 pt Dual II Mag and 3 pt Prowl H2O 5/3: SH: Pre-emergence herbicide of 3 pt Prowl H2O + 1.67 pt Dual II Mag were sprayed	5/31: Intrepid 2F (a.i: methoxyfenozide) was sprayed for Armyworms at 6 oz/A. SH: 6/11, 5 oz/A Status + 0.25% NIS + 2 lb/A AMS. RH: 6/11, 1st high residue cultivation. RH: 6/11, 2nd high residue cultivation.
	Rye (fall plant 2012)		none	7/30: Plots were mowed and rotary harrowed to stimulate canola germination. 8/21: Weeds and volunteer canola killed with 32 oz Roundup Powermax and 16 oz 2,4 D-LVE.	None for cover crop.
	Soybeans	5/31/12	None	SH: 4/21, Rye was burned down with 22 oz Roundup Powermax and 1 pt 2,4 D-LVE. RH: 5/12, Headed out rye burned down with 22 oz Roundup Powermax and 1 pt 2,4 D-LVE. RH: 5/17, Rye rolled down with roller crimper. RH: 5/31, 10 in band, with 3 oz Valor XLT + 1.66 pt Dual II Magnum. SH: 5/31, 3 oz Valor XLT PRE.	SH: 7/12, 22 oz/A Roundup Powermax RH: 7/10, high residue cultivation RH: 7/17, high residue cultivation

A.9 (cont.): NESARE PEST MANAGEMENT INFORMATION: 2012

Corn-Soy Rotation	Corn Grain	5/1/12	Fludioxonil, mefenoxam, & azoxystrobin fungicides + clothianidin & thiamexotham insecticides, + tebuconazole	4/21: Weeds were burned down with 22 oz Roundup Powermax and 1 pt 2,4 D-LVE. 5/3: Pre-emergence pesticides of 1.75 pt SureStart + 1 qt Aatrex + 3.5 oz Warrior insecticide were sprayed.	6/11: 22 oz/A Roundup Powermax.
	Soybean	5/31/12	Cruiser Maxx: Thiamexotham insecticide & mefenoxam + fludioxonil fungicides	5/10: Pre-burndown of 22 oz Roundup Powermax and 1 pt 2,4 D-LVE were sprayed.	7/7: 22 oz/A Roundup Powermax.

Cg: Cruiser Extreme 250: thiamexotham insecticide + 3 fungicides (Apron [mefanoxam], Maxim [mefanoxam + fludioxonil], Dynasty [azoxystrobin])

2,4 D LVE: 2,4 D	Prowl H2O: pendimethalin
Accent: nicosulfuron	Status: dicamba + diflufenzopor
AAtrex 4L: atrazine	SureStart: acetochlor + flumetsulam + clopyralid
Buctril: bromoxynil	Valor XLT: fumioxazin + cloransulam methyl
Butyrac: 2,4 DB	
Callisto: mesotrione	Roundup Powermax: glyphosate
Clarity/Banvel: diglycolamine salt	* 22 oz (0.75 lb/A)
Dual II Mag: S-metolachlor	* 32 oz (1.125 lb/A glyphosate + 2 lb AMS/A)
Ignite: glufosinate	
Permit: halosulfuron	Warrior Insecticide: lambda-cyhalothrin