SARE Report 12/17/07

Growing Winter Spelt as an Organic Grain or Forage for Dairy Cows

Henry Perkins
Bullridge Farm
Albion, ME

What I did and how I measured my results:

Working with Rick Kersbergen, we mapped out 18 plots on a field that had been previously in small grains, but had been fallowed for weed control tillage. Manure and lime were applied prior to planting.

We used organic winter spelt from Lakeview Organic Grain (Lot # o-wps-kum-5-06)
Planting dates we selected were: 9/1/06 120 lbs /acre (PD1)
9/15/06 120 lbs/acre (PD2)
10/14/06 120/lbs/acre (PD3)

Here are some pictures from the plots in late October of 2007. After the last planting date, we had significant rainfall that continued through December of 2007.

Top left- 3 planting dates

Left- 9/1/06 planting and 10/15/06 planting

Above- 3 planting dates (early in the distance to late close)

Note: Significant rains occurred shortly after the 10/15/06 planting

One Lely cultivation was done on the early planted plots on 10/14/06 and on the PD3 plots just prior to planting.

In late March, I spun on red clover seed with a 4-wheeler and electric spin spreader attachment. The resulting stand of clover that appeared at harvest provided significant forage yield of high quality material in September of 2007.

Here is a picture that shows the significant clover stand appearing at harvest.

On May 31st 2007, I worked with the University farm crew to harvest the "boot stage" spelt forage. Samples were collated for nutrient analysis.

Boot stage harvest
5/31/07 28" X 10 ' plots kg

9/1/06 planting	9/15/06 planting	10/14/06 planting
23 % dry matter	21% dry matter	23% dry matter
R1PD1 2.78Kg	R1 PD2 2.36Kg	R1PD3 1.54Kg
R2PD1 3.90	R2 PD2 3.12	R2PD3 .56
R3PD1 4.16	R3PD2 2.96	R3PD3 .58
Ave 3.61Kg	2.81Kg	.89 kg Kg
7.43 tons/acre	5.78 tons/acre	1.8 tons/acre
1.71 tons dry matter/acre	1.3 tons/acre dry matter	.42 tons/acre dry mater

Stem counts along a one meter rule take 5/31/07

9/1/06	R1 pd 1	***126***	***162***	R2 pd1	***107***	***114***	R3 PD1	***86***	***156***	Ave ***125***
9/15/06	R1 pd 2	***103***	***137***	R2 PD2	***59***	***103***	R3 PD2	***131***	***110***	Ave ***107***
10/15/06	R1 pd3	***70***	***115***	R2 pd 3	***81***	***63***	R3 PD 3	***99***	***75***	Ave ***84***

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Dairy One

FORAGE TESTING LABORATORY
DAIRY ONE, INC.
730 WARREN ROAD
ITHACA, NEW YORK 14850
607-257-1272 (fax 607-257-1350)

Sampled	Recvd	Printed	ST	CO
	06/04/07	06/05/07		

HENRY PERKINS
HENRY PERKINS
156 BOG RD
ALBION, ME 04910

ENERGY TABLE - NRC 2001
BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.61	1.35	Dry
40	0.59	1.29	18
60	0.56	1.24	27
80	0.53	1.18	36
100	0.50	1.10	45
120+	0.46	1.01	54+
NEM3X	0.59	1.30	
NEG3X	0.33	0.72	
ME1X	1.00	2.20	
DE1X	1.19	2.63	
TDN1X,%	60		

COMMENTS:

1. NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

RICHARD KERSBERGER

Sample Description	Farm	Code	Sample
FR WHEAT FORAGE		295	11143810

9/01/06 SPELT BOOT STAGE

Analysis Results

Components	As Fed	DM
% Dry Matter	19.7	
% Neutral Detergent Fiber	11.6	59.0
% Crude Protein	1.9	9.5
% Calcium	.06	.29
% Phosphorus	.07	.37
% Magnesium	.02	.10
% Potassium	.43	2.21
% Sodium	.001	.006
PPM Copper	1	7
PPM Iron	37	190
PPM Manganese	4	21
PPM Zinc	3	16
% Acid Detergent Fiber	6.8	34.4
% NFC	4.4	22.3
% TDN	12	60
NEL, Mcal/Lb	.11	.55
NEM, Mcal/Lb	.11	.55
NEG, Mcal/Lb	.06	.30
Relative Feed Value		98
% Moisture	80.3	
% Adjusted Crude Protein	1.9	9.5
PPM Molybdenum	.2	.8
Horse TDN, %	9	47
Horse DE, Mcal/lb	.18	.94

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	06/04/07	06/05/07		

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156 BOG RD
ALBION, ME 04910

ENERGY TABLE - NRC 2001
BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.63	1.38	Dry
40	0.60	1.32	18
60	0.57	1.27	27
80	0.54	1.20	36
100	0.51	1.12	45
120+	0.47	1.04	54+
NEM3X	0.60	1.33	
NEG3X	0.34	0.75	
ME1X	1.02	2.24	
DE1X	1.21	2.67	
TDN1X,%	60		

COMMENTS:

1.NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

RICHARD KERSBERGER

Sample Description	Farm	Code	Sample
FR WHEAT FORAGE		295	11143800

9/15/06 SPELT BOOT STAGE LATE PLANT

Analysis Results

Components	As Fed	DM
% Dry Matter	19.8	
% Neutral Detergent Fiber	11.5	58.4
% Crude Protein	2.3	11.8
% Calcium	.07	.35
% Phosphorus	.08	.42
% Magnesium	.02	.12
% Potassium	.56	2.84
% Sodium	.002	.009
PPM Copper	1	8
PPM Iron	47	240
PPM Manganese	4	22
PPM Zinc	4	19
% Acid Detergent Fiber	7.0	35.5
% NFC	4.2	21.3
% TDN	12	60
NEL, Mcal/lb	.11	.56
NEM, Mcal/lb	.11	.56
NEG, Mcal/lb	.06	.30
Relative Feed Value		98
% Moisture	80.2	
% Adjusted Crude Protein	2.3	11.8
PPM Molybdenum	.2	.9
Horse TDN, %	9	48
Horse DE, Mcal/lb	.19	.96

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	06/04/07	06/05/07		

HENRY PERKINS
HENRY PERKINS
156 BOG RD
ALBION, ME 04910

ENERGY TABLE - NRC 2001
BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.66	1.45	Dry
40	0.63	1.39	18
60	0.60	1.33	27
80	0.57	1.26	36
100	0.54	1.18	45
120+	0.50	1.09	54+
NEM3X	0.63	1.40	
NEG3X	0.37	0.82	
ME1X	1.06	2.34	
DE1X	1.25	2.77	
TDN1X,%	61		

COMMENTS:

1. NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

RICHARD KERSBERGER

Sample Description	Farm	Code	Sample
FR WHEAT FORAGE		295	11143820

10/15 planting SPELT BOOT

Analysis Results

Components	As Fed	DM
% Dry Matter	21.0	
% Neutral Detergent Fiber	11.4	54.2
% Crude Protein	3.3	15.6
% Calcium	.10	.47
% Phosphorus	.10	.47
% Magnesium	.03	.14
% Potassium	.67	3.21
% Sodium	.002	.010
PPM Copper	2	9
PPM Iron	71	339
PPM Manganese	7	34
PPM Zinc	4	20
% Acid Detergent Fiber	6.7	32.1
% NFC	4.7	22.3
% TDN	13	61
NEL, Mcal/lb	.12	.59
NEM, Mcal/lb	.12	.58
NEG, Mcal/lb	.07	.32
Relative Feed Value		110
% Moisture	79.0	
% Adjusted Crude Protein	3.3	15.6
PPM Molybdenum	.2	1.0
Horse TDN, %	11	53
Horse DE, Mcal/lb	.22	1.07

Conclusions from Boot stage harvest:
Obviously, we suffered a huge yield penalty from the late planting dates, indicating that if growers want a forage yield from a winter grain, they should be planting in September if at all possible. Interestingly, maturity of the crop was also impacted by planting dates, with crude protein dropping dramatically from the early planting to the late planting. This would suggest that a mid-late September planning may be more desirable for forage quality if your harvest window is late May or early June. Stem counts indicated a decrease in tillering and plant counts from the early to late planting as well. There was not a severe decline from 9/1/06 to the 9/15/06 dates.

In July, I again went out and harvested subplots for forage yield and quality in the "soft dough" stage

7/10/07 Soft dough stage harvest 28" x 10' plots Kg

R1PD1 5.22 Average yield 4.8 Average dry matter 37.1
R2PD1 5.84 9.88 tons 3.66 tons of dry matter
R3PD1 3.34

R1PD2 4.64 Average yield 4.57 Average dry Matter 34.3
R2PD2 4.92 9.41 tons 3.23 tons of dry matter
R3PD2 4.16

R3PD3 2.8 Average yield 2.21 Average dry matter 34.7
R1PD3 1.6 4.55 tons 1.58 tons of dry matter
R2PD3 2.24

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Sampled	Recvd	Printed	ST	CO
	07/12/07	07/16/07		

SPELT/SOFT DOUGH 9/01/06
HENRY PERKINS
156 BOG RD
ALBION, ME 04910

ENERGY TABLE - NRC 2001
BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.59	1.31	Dry
40	0.57	1.25	18
60	0.54	1.20	27
80	0.52	1.14	36
100	0.48	1.06	45
120+	0.44	0.98	54+
NEM3X	0.57	1.25	
NEG3X	0.31	0.68	
ME1X	0.97	2.14	
DE1X	1.16	2.57	
TDN1X,%	59		

COMMENTS:

1. THIS SAMPLE WAS TESTED TWICE FOR CRUDE PROTEIN TO CONFIRM THE VALUE LISTED.
2. NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

RICHARD KERSBERGER

Sample Description	Farm	Code	Sample
FR WHEAT FORAGE		295	11279030

Analysis Results

Components	As Fed	DM
% Dry Matter	37.1	
% Neutral Detergent Fiber	22.6	61.0
% Crude Protein	2.4	6.6
% Calcium	.07	.20
% Phosphorus	.09	.25
% Magnesium	.04	.10
% Potassium	.28	.76
% Sodium	.002	.004
PPM Copper	3	8
PPM Iron	26	69
PPM Manganese	6	16
PPM Zinc	7	20
% Acid Detergent Fiber	14.7	39.5
% NFC	8.4	22.6
% TDN	22	59
NEL, Mcal/lb	.20	.53
NEM, Mcal/lb	.20	.54
NEG, Mcal/lb	.11	.29
Relative Feed Value		89
% Moisture	62.9	
% Adjusted Crude Protein	2.4	6.6
PPM Molybdenum	.2	.6
Horse TDN, %	15	41
Horse DE, Mcal/lb	.31	.83

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	07/12/07	07/13/07		

SPELT/SOFT DOUGH 9/15 planting
HENRY PERKINS
156 BOG RD
ALBION, ME 04910

ENERGY TABLE - NRC 2001
BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.58	1.28	Dry
40	0.55	1.22	18
60	0.53	1.17	27
80	0.50	1.11	36
100	0.47	1.04	45
120+	0.43	0.96	54+
NEM3X	0.55	1.22	
NEG3X	0.30	0.65	
ME1X	0.95	2.10	
DE1X	1.15	2.52	
TDN1X,%	58		

COMMENTS:

1. NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

RICHARD KERSBERGER

Sample Description	Farm	Code	Sample
FR TRITICALE/PEA FOR		291	11279040

Analysis Results

Components	As Fed	DM
% Dry Matter	34.3	
% Neutral Detergent Fiber	22.1	64.4
% Crude Protein	2.1	6.3
% Calcium	.06	.18
% Phosphorus	.08	.23
% Magnesium	.04	.11
% Potassium	.28	.83
% Sodium	.001	.003
PPM Copper	3	8
PPM Iron	21	61
PPM Manganese	6	17
PPM Zinc	7	19
% Acid Detergent Fiber	14.5	42.2
% NFC	7.3	21.2
% TDN	20	58
NEL, Mcal/Lb	.17	.50
NEM, Mcal/Lb	.18	.52
NEG, Mcal/Lb	.09	.27
Relative Feed Value		81
% Moisture	65.7	
% Adjusted Crude Protein	2.1	6.3
PPM Molybdenum	.3	.8
Horse TDN, %	14	40
Horse DE, Mcal/lb	.28	.80

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	07/12/07	07/13/07		

SPELT/SOFT DOUGH 10/15/06

HENRY PERKINS
156 BOG RD
ALBION, ME 04910

ENERGY TABLE - NRC 2001

BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.57	1.25	Dry
40	0.54	1.20	18
60	0.52	1.15	27
80	0.49	1.08	36
100	0.46	1.01	45
120+	0.42	0.93	54+
NEM3X	0.54	1.19	
NEG3X	0.28	0.62	
ME1X	0.93	2.06	
DE1X	1.13	2.49	
TDN1X,%	57		

COMMENTS:

1. NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

RICHARD KERSBERGER

Sample Description	Farm	Code	Sample
FR TRITICALE/PEA FOR		291	11279050

Analysis Results

Components	As Fed	DM
% Dry Matter	34.7	
% Neutral Detergent Fiber	23.8	68.6
% Crude Protein	2.3	6.6
% Calcium	.09	.27
% Phosphorus	.10	.29
% Magnesium	.04	.12
% Potassium	.36	1.03
% Sodium	.001	.003
PPM Copper	3	8
PPM Iron	31	89
PPM Manganese	6	17
PPM Zinc	8	22
% Acid Detergent Fiber	15.9	46.0
% NFC	6.0	17.3
% TDN	20	57
NEL, Mcal/lb	.16	.46
NEM, Mcal/lb	.17	.50
NEG, Mcal/lb	.09	.25
Relative Feed Value		72
% Moisture	65.3	
% Adjusted Crude Protein	2.3	6.6
PPM Molybdenum	.5	1.6
Horse TDN, %	14	39
Horse DE, Mcal/lb	.27	.79

At the soft dough stage of harvest, the nutrient qualities between the early planting and late planting were reversed, with the early planting having the lower fiver levels and higher digestible energy. I was disappointed with the quality of this forage, but we may have been a little early for the harvest. From talking to Rick Kersbergen, harvest stage for soft dough is a short window, and we may have been a little early to see good grain/starch levels in the seed head.

In August, (8/2/07) at the field day we held at my farm, we again did a harvest of the grain from the sub plots.

Grain sample weights from Henry Perkins spelt taken on 08/02/2007

Rep/plot	Pd 1 (g) lbs/acre	Pd 2 (g) lbs/acre	Pd 3 (g) lbs/acre
Rep 1	214.3 1014lb	149.8 709	27 128
Rep 2	184.2 872	168.5 798	14.1 68
Rep 3	131 620	226.8 1074	22.7 107
	Ave 835 lbs/acre	Ave 860 lbs/acre	Ave 100 lbs/acre

Lbs/acre at 87 % dry matter equivalent

This data was from small plots and combined through a small plot combine. We had significant loss during the combining process, but the relative yields are important. There was a significant penalty from the delayed planting beyond the 9/15/07 planting date.

We also sent spelt and other grains to Aurora Mills LLC in Houlton Maine for processing into flour. We were interested in the resulting by-products from this process as feed for our cattle. Attached are the sample analysis from three various samples we received as by-product from the mill. We felt that there is significant feeding value to this material. This product is currently being fed to an organic dairy herd in Washington County as an energy supplement.

Also attached are a news release from the field day at our farm (approx 35 people attended) and an article that Rick Kersbergen wrote for a NODPA News article that appeared in late summer.

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Sampled	Recvd	Printed	ST	CO
	11/09/07	11/12/07		

OAT WASTE
UNIV OF MAINE CO-OP EXTENSION
EXTENSION CROPS TEAM
LIBBY HALL
ORONO, ME 04469

ENERGY TABLE - NRC 2001

BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	1.05	2.31	Dry
40	1.01	2.22	18
60	0.97	2.14	27
80	0.93	2.04	36
100	0.88	1.93	45
120+	0.82	1.80	54+
NEM3X	1.01	2.23	
NEG3X	0.70	1.54	
ME1X	1.61	3.55	
DE1X	1.79	3.95	
TDN1X,%	89		

COMMENTS:
1.NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

Sample Description	Farm	Code	Sample
OATS, Dry		465	11820650

Analysis Results

Components	As Fed	DM
% Moisture	12.0	
% Dry Matter	88.0	
% Crude Protein	14.0	15.9
% Adjusted Crude Protein	14.0	15.9
% Acid Detergent Fiber	2.9	3.2
% Neutral Detergent Fiber	7.7	8.8
% NFC	59.1	67.1
% TDN	75	85
NEL, Mcal/Lb	.81	.92
NEM, Mcal/Lb	.86	.98
NEG, Mcal/Lb	.59	.67
% Calcium	.06	.06
% Phosphorus	.42	.48
% Magnesium	.12	.14
% Potassium	.36	.41
% Sodium	.002	.002
PPM Iron	54	61
PPM Zinc	32	37
PPM Copper	3	3
PPM Manganese	45	52
PPM Molybdenum	.3	.4
Horse TDN, %	78	88
Horse DE, Mcal/lb	1.56	1.77

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Sampled	Recvd	Printed	ST	CO
	11/09/07	11/12/07		

SMALL GRAIN BRAN
UNIV OF MAINE CO-OP EXTENSION
EXTENSION CROPS TEAM
LIBBY HALL
ORONO, ME 04469

Sample Description	Farm	Code	Sample
MISC., Energy Dry		460	11820730

Analysis Results

Components	As Fed	DM
% Moisture	10.3	
% Dry Matter	89.7	
% Crude Protein	12.2	13.6
% Adjusted Crude Protein	12.2	13.6
% Acid Detergent Fiber	7.0	7.8
% Neutral Detergent Fiber	18.6	20.8
% Calcium	.05	.05
% Phosphorus	.63	.70
% Magnesium	.23	.26
% Potassium	.65	.72
% Sodium	<.001	.001
PPM Iron	52	58
PPM Zinc	40	44
PPM Copper	4	5
PPM Manganese	54	60
PPM Molybdenum	.7	.8

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Sampled	Recvd	Printed	ST	CO
	11/09/07	11/12/07		

SMALL GRAIN BY PRODUCT
UNIV OF MAINE CO-OP EXTENSION
EXTENSION CROPS TEAM
LIBBY HALL
ORONO, ME 04469

ENERGY TABLE - NRC 2001

BW = 1350 Fat% = 3.7 Tprot% = 3.1

Milk, Lb	NEL Mcal/Lb	NEL Mcal/Kg	Milk, Kg
Dry	0.97	2.14	Dry
40	0.93	2.06	18
60	0.90	1.98	27
80	0.86	1.89	36
100	0.81	1.78	45
120+	0.75	1.66	54+
NEM3X	0.95	2.09	
NEG3X	0.65	1.42	
ME1X	1.51	3.33	
DE1X	1.70	3.74	
TDN1X,%	84		

COMMENTS:
1. THIS SAMPLE WAS TESTED TWICE FOR CRUDE PROTEIN TO CONFIRM THE VALUE LISTED.
2. NRC ENERGIES - SMALL BREEDS - DO NOT USE ENERGIES BEYOND 80 LBS. MILK. LARGE BREEDS - USE 120 LB. ENERGY WITH EXTREME CAUTION.

Sample Description	Farm	Code	Sample
SMALL GRAINS, Dry		485	11821330

Analysis Results

Components	As Fed	DM
% Moisture	11.5	
% Dry Matter	88.5	
% Crude Protein	14.2	16.1
% Adjusted Crude Protein	14.2	16.1
% Acid Detergent Fiber	2.6	2.9
% Neutral Detergent Fiber	6.9	7.8
% NFC	63.6	71.9
% TDN	74	83
NEL, Mcal/Lb	.78	.88
NEM, Mcal/Lb	.82	.92
NEG, Mcal/Lb	.55	.62
% Calcium	.05	.05
% Phosphorus	.45	.51
% Magnesium	.13	.15
% Potassium	.36	.41
% Sodium	.001	.001
PPM Iron	65	73
PPM Zinc	36	40
PPM Copper	2	2
PPM Manganese	45	51
PPM Molybdenum	.4	.5
Horse TDN, %	79	89
Horse DE, Mcal/lb	1.57	1.78

News Release

For Immediate Release

Grain Production Workshop and Field Day
Aug 2nd
Rainbow Valley Farm in Sidney, and Bullridge Farm in Albion.
10-2
Lunch by RSVP only

The Maine Organic Milk Producers and the University of Maine Cooperative Extension are excited to announce a field day for interested producers to visit farms that have been experimenting with grain production on their farm to supplement the diets of their dairy cows.

Rainbow Valley Farm, owned and operated by the Bragg family is a research partner with the University of Maine on a Sustainable Agriculture Research and Education (SARE) project focused on organic grain production. For the past year, Jeff Bragg has planted both winter and spring grains on his farm to complement the research being conducted at the University of Maine and at the research site of the ARS New England Plant Soil and Water Lab in Newport. On August 2nd, starting at 10:00, we will tour grain plots that will be ready to harvest at the farm in Sidney. Rick Kersbergen will discuss the plantings and also lead a discussion about the value of winter grains as both a forage and grain crop for reducing feed costs. Rick will also report on some of the nutrient issues related to growing winter grains in Maine.

Later that afternoon, the tour will head to Bullridge Farm in Albion, owned and operated by Henry Perkins and his daughter Jackie. Henry is also a research cooperator on the SARE project and also is one of eight Maine Organic Milk Producers who are collaborating on the USDA Integrated Organic Project "Reducing Off-farm Grain Inputs on Organic Dairy farms in the Northeast." Henry also received funding to conduct his own research project on winter spelt, a grain that has received increasing attention for its use in human food chain as well as the livestock feeding market. At Henry's farm, we will tour plots of small grains, including the spelt plots and the see some trials involving soybeans. Lauren Kolb, a graduate student at the University of Maine, will be on hand to discuss some interesting weed control techniques in small grains that are being implemented in Europe and experimented with at the Maine Experiment Station farm in Orono.

Lunch will be provided by RSVP at a cost of $5.00. Interested participants can call the Waldo Extension Office at 1-800-287-1426 (in Maine) and 207-342-5971 outside of the state.

This field day is based on research and funding provided by Northeast SARE and the USDA/CSREES Integrated Organic Program and the Northeast Center for Risk

Management Education. Additionally, the Maine Department of Agriculture has recently funded MOMP to continue organic grain trials for meeting the growing need of artisan bakers in Maine. Nutrient management and pesticide recertification credits are being requested.

Rainbow Valley Farm is on the River Rd in Sidney, and the field day will be North of the farm near the Waterville line. Bullridge farm is located on the Bog road in Albion, approximately 1 mile from RTS. 202 and 9.

For more information, please contact Rick Kersbergen at richardk@umext.maine.edu or call 1-800-287-1426 (in Maine) or 207-342-5971.

Winter Grain Research in Maine
Rick Kersbergen (UMCE), Tim Griffin (USDA/ARS) and Tom Molloy (MAFES)

There has been a lot of interest in winter grain production, especially in light of the wild grain prices we are experiencing in both the conventional and organic grain markets. Last year, we started a SARE project "Expanding Grain Production in Maine and Vermont LNE06-240" with Heather Darby and Sid Bosworth from UVM and Tim Griffin from the USDA /ARS New England Plant Soil and Water Lab in Orono. The spring grains we planted in 2006 were a disappointment, both in terms of forage yields, (harvested in either the boot stage or soft dough stages) and grain yields (remember the weather last year?).

In the fall of 2006 we planted a number of winter grains and experimented with planting dates as well as trying to evaluate how best to provide fertility to these grains in an organic system. Concurrently, Henry Perkins from Bull Ridge Farm in Albion initiated a SARE Farmer/Grower trial investigating winter spelt production for forage and grain production. Henry also is evaluating three different fall planting dates.

While all the data we have so far on winter grains is preliminary and relates to forage yield, we can draw some conclusions, especially about planting dates and the impact on forage yields the following spring.

We have data on the boot stage harvest from some replicated trials at the University of Maine Rogers Farm, with spelt, wheat, rye and Triticale. Table 1 shows the two planting dates 9/20 and 10/17 and the impact of boot stage forage yield in pounds of dry matter per acre.

Table 1.

Early Planting (Sept 20 2006), Rogers West

	Date Harvested	DM Yld lbs. Per acre
Rye	21-May	926
Oberhuaser Spelt	8-Jun	3377
Sungold Spelt	8-Jun	2583
Tritical 336	29-May	3068
Trical 815	4-Jun	1419
Frederick Wheat	8-Jun	3186
Richland Wheat	8-Jun	2639

Late Planting (Oct 17 2006), Rogers West

Rye	29-May	303
Oberhuaser Spelt	15-Jun	2592
Sungold Spelt	11-Jun	2164
Tritical 336	4-Jun	1083
Trical 815	15-Jun	723

The pictures of the following plots indicate the difference we saw in the planting dates of Triticale 336 and Oberhauser Spelt earlier this spring.

Alzo Triticale	15-Jun	1988
Richland Wheat	11-Jun	2208

Trical 336 planted 10/17/06 **Trical 336 planted 9/20/06**

Oberhauser spelt planted 10/17/06 **Oberhauser spelt planted 9/20/06**

At Henry's farm we measured the yield of winter spelt in replicated trials in the boot stage (5/31/07) planted at three different dates last fall (9/15, 9/30 and 10/15).

Table 2.
Bull Ridge Farm Winter Spelt

Planting Date	15-Sep	30-Sep	15-Oct
Yield DM lbs/acre	3400	2600	840
Stems/meter row	125	107	84

Winter spelt planted at Henry Perkins on 9/15/06 (left) and 10/15 (right). The unwilling participant in the picture is about 5'8" tall.

Another of our farmer researchers in Maine, Jeff Bragg from Rainbow Valley Farm in Sidney planted a number of winter grains for us on his farm on 9/16/06. His yield data for Trical 336 in the boot stage yielded 3.56 tons of dry matter per acre on May 31st! His yields of other small grains were similar to our data from the early planted Rogers Farm.

Table 3.
Rainbow Valley Farm Boot Stage 5/31/07

	Yield lbs/acre Dry matter
Trical 336	7120

Wheat (Frederick)	3260
Spelt	3400
Wheat (Richmond)	2800
Rye	3120

Triticale Harvest Boot stage 5/31/07 (Yield of 3.56 tons dry matter/acre)

We have been very excited about the opportunities for organic dairy farmers to grow winter grains to reduce the cost of purchased supplements. We will continue to trial both spring and winter grains to try and fine tune organic management practices. Tim Griffin is researching nitrogen management practices for winter grains and alternative methods that organic farmers might be able to use to apply manure to winter grains in the spring to provide some needed nitrogen.

Many of these trials have also been replicated in Vermont under the watchful eyes of Heather Darby.