

HOLMES LABORATORY INC.
3559 US 62
Millersburg, OH 44654

SOIL
ANALYSIS REPORT
[A Vital Key to Today's Agriculture]
(330) 893-2933 * www.holmeslab.com
Test Performed : A

Customer : Andy

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1360
Sample ID: SOIL
Andy Big

Item	Units	Test Results	Comments
pH		6.0	
Lime Test Index		68	
Organic Matter	%	3.2	
Phosphorus (P1)	lb/a	101	
Potassium (K)	lb/a	352	Use High Calcium Lime that
Magnesium (Mg)	lb/a	184	contains about 38% Calcium
Calcium (Ca)	lb/a	1025	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	128	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	6.5	
Base Saturation	%	63	
Potassium (K)	%	7.0	
Magnesium (Mg)	%	11.9	
Calcium (Ca)	%	39.7	
Sodium (Na)	%	4.2	
Hydrogen (H)	%	37.2	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.3	
Mg to K Ratio		1.7	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	20	lbs/acre
Phosphate(P2O5)	21	lbs/acre
Potash (K2O)	0	lbs/acre
Magnesium (Mg)	3	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Test Performed : A

Customer : Andy

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1361
Sample ID: SOIL
Andy Small

Item	Units	Test Results	Comments
pH		6.0	
Lime Test Index		68	
Organic Matter	%	3.3	
Phosphorus (P1)	lb/a	41	
Potassium (K)	lb/a	260	Use High Calcium Lime that
Magnesium (Mg)	lb/a	168	contains about 38% Calcium
Calcium (Ca)	lb/a	979	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	148	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	6.2	
Base Saturation	%	61	
Potassium (K)	%	5.4	
Magnesium (Mg)	%	11.3	
Calcium (Ca)	%	39.5	
Sodium (Na)	%	5.1	
Hydrogen (H)	%	38.7	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.5	
Mg to K Ratio		2.1	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	18	lbs/acre
Phosphate(P2O5)	61	lbs/acre
Potash (K2O)	45	lbs/acre
Magnesium (Mg)	11	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Test Performed : A

Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1362
Sample ID: SOIL
L Field

Item	Units	Test Results	Comments
pH		5.9	
Lime Test Index		67	
Organic Matter	%	2.8	
Phosphorus (P1)	lb/a	58	
Potassium (K)	lb/a	311	Use High Magnesium Lime that
Magnesium (Mg)	lb/a	133	contains about 12% Magnesium
Calcium (Ca)	lb/a	949	and 20% Calcium. Apply the
Sodium (Na)	lb/a	199	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	7.4	
Base Saturation	%	51	
Potassium (K)	%	5.4	
Magnesium (Mg)	%	7.5	
Calcium (Ca)	%	32.2	
Sodium (Na)	%	5.8	
Hydrogen (H)	%	48.9	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		4.3	
Mg to K Ratio		1.4	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 2.8 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	30	lbs/acre
Phosphate(P2O5)	44	lbs/acre
Potash (K2O)	0	lbs/acre
Magnesium (Mg)	80	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1363
Sample ID: SOIL
Soybean South

Item	Units	Test Results	Comments
pH		6.2	
Lime Test Index		68	
Organic Matter	%	3.1	
Phosphorus (P1)	lb/a	86	
Potassium (K)	lb/a	255	Use High Calcium Lime that
Magnesium (Mg)	lb/a	179	contains about 38% Calcium
Calcium (Ca)	lb/a	1081	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	153	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	6.5	
Base Saturation	%	63	
Potassium (K)	%	5.0	
Magnesium (Mg)	%	11.5	
Calcium (Ca)	%	41.5	
Sodium (Na)	%	5.0	
Hydrogen (H)	%	36.9	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.6	
Mg to K Ratio		2.3	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	3	lbs/acre
Phosphate(P2O5)	21	lbs/acre
Potash (K2O)	42	lbs/acre
Magnesium (Mg)	8	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Joyful Journey Alpacas, LLC
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Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1364
Sample ID: SOIL
Soybean North

Item	Units	Test Results	Comments
pH		6.2	
Lime Test Index		68	
Organic Matter	%	3.4	
Phosphorus (P1)	lb/a	36	
Potassium (K)	lb/a	214	Use High Calcium Lime that
Magnesium (Mg)	lb/a	173	contains about 38% Calcium
Calcium (Ca)	lb/a	1025	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	148	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	6.3	
Base Saturation	%	62	
Potassium (K)	%	4.4	
Magnesium (Mg)	%	11.5	
Calcium (Ca)	%	40.8	
Sodium (Na)	%	5.0	
Hydrogen (H)	%	38.2	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.6	
Mg to K Ratio		2.6	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	0	lbs/acre
Phosphate(P2O5)	66	lbs/acre
Potash (K2O)	73	lbs/acre
Magnesium (Mg)	8	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1365
Sample ID: SOIL
Baseball SE

Item	Units	Test Results	Comments
pH		5.8	
Lime Test Index		68	
Organic Matter	%	3.1	
Phosphorus (P1)	lb/a	25	
Potassium (K)	lb/a	92	Use High Calcium Lime that
Magnesium (Mg)	lb/a	117	contains about 38% Calcium
Calcium (Ca)	lb/a	709	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	122	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	5.1	
Base Saturation	%	52	
Potassium (K)	%	2.3	
Magnesium (Mg)	%	9.7	
Calcium (Ca)	%	35.1	
Sodium (Na)	%	5.1	
Hydrogen (H)	%	47.5	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.6	
Mg to K Ratio		4.1	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = .9 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	23	lbs/acre
Phosphate(P2O5)	77	lbs/acre
Potash (K2O)	134	lbs/acre
Magnesium (Mg)	30	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1366
Sample ID: SOIL
Baseball SW

Item	Units	Test Results	Comments
pH		5.6	
Lime Test Index		67	
Organic Matter	%	2.9	
Phosphorus (P1)	lb/a	22	
Potassium (K)	lb/a	153	Use High Magnesium Lime that
Magnesium (Mg)	lb/a	87	contains about 12% Magnesium
Calcium (Ca)	lb/a	576	and 20% Calcium. Apply the
Sodium (Na)	lb/a	128	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	5.9	
Base Saturation	%	39	
Potassium (K)	%	3.3	
Magnesium (Mg)	%	6.2	
Calcium (Ca)	%	24.5	
Sodium (Na)	%	4.6	
Hydrogen (H)	%	61.2	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		4.0	
Mg to K Ratio		1.8	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 2.7 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	28	lbs/acre
Phosphate(P2O5)	80	lbs/acre
Potash (K2O)	104	lbs/acre
Magnesium (Mg)	83	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1367
Sample ID: SOIL
Baseball NE

Item	Units	Test Results	Comments
pH		5.8	
Lime Test Index		68	
Organic Matter	%	3.1	
Phosphorus (P1)	lb/a	48	
Potassium (K)	lb/a	77	Use High Calcium Lime that
Magnesium (Mg)	lb/a	138	contains about 38% Calcium
Calcium (Ca)	lb/a	760	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	148	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	5.3	
Base Saturation	%	55	
Potassium (K)	%	1.9	
Magnesium (Mg)	%	10.9	
Calcium (Ca)	%	35.9	
Sodium (Na)	%	6.0	
Hydrogen (H)	%	45.4	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.3	
Mg to K Ratio		5.8	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	23	lbs/acre
Phosphate(P2O5)	54	lbs/acre
Potash (K2O)	142	lbs/acre
Magnesium (Mg)	15	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
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Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/13/2014
Lab Number : 14-1368
Sample ID: SOIL
Baseball NW

Item	Units	Test Results	Comments
pH		5.9	
Lime Test Index		68	
Organic Matter	%	3.5	
Phosphorus (P1)	lb/a	62	
Potassium (K)	lb/a	87	Use High Calcium Lime that
Magnesium (Mg)	lb/a	158	contains about 38% Calcium
Calcium (Ca)	lb/a	821	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	138	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	5.5	
Base Saturation	%	56	
Potassium (K)	%	2.0	
Magnesium (Mg)	%	11.9	
Calcium (Ca)	%	37.2	
Sodium (Na)	%	5.3	
Hydrogen (H)	%	43.5	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.1	
Mg to K Ratio		5.9	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	13	lbs/acre
Phosphate(P2O5)	40	lbs/acre
Potash (K2O)	137	lbs/acre
Magnesium (Mg)	0	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1369
Sample ID: SOIL
Casino North

Item	Units	Test Results	Comments
pH		6.0	
Lime Test Index		68	
Organic Matter	%	3.0	
Phosphorus (P1)	lb/a	136	
Potassium (K)	lb/a	71	Use High Calcium Lime that
Magnesium (Mg)	lb/a	270	contains about 38% Calcium
Calcium (Ca)	lb/a	1943	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	138	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	8.8	
Base Saturation	%	73	
Potassium (K)	%	1.0	
Magnesium (Mg)	%	12.8	
Calcium (Ca)	%	55.4	
Sodium (Na)	%	3.3	
Hydrogen (H)	%	27.4	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		4.3	
Mg to K Ratio		12.4	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	60	lbs/acre
Phosphate(P2O5)	14	lbs/acre
Potash (K2O)	150	lbs/acre
Magnesium (Mg)	0	lbs/acre

Note : See your local Ag Supplier for assistance with what type of fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after the 2nd cutting.

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13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1370
Sample ID: SOIL
Casino South

Item	Units	Test Results	Comments
pH		6.1	
Lime Test Index		68	
Organic Matter	%	2.8	
Phosphorus (P1)	lb/a	42	
Potassium (K)	lb/a	133	Use High Calcium Lime that
Magnesium (Mg)	lb/a	296	contains about 38% Calcium
Calcium (Ca)	lb/a	1907	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	143	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	8.9	
Base Saturation	%	73	
Potassium (K)	%	1.9	
Magnesium (Mg)	%	13.9	
Calcium (Ca)	%	53.7	
Sodium (Na)	%	3.4	
Hydrogen (H)	%	27.0	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.9	
Mg to K Ratio		7.2	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	65	lbs/acre
Phosphate(P2O5)	74	lbs/acre
Potash (K2O)	145	lbs/acre
Magnesium (Mg)	0	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1371
Sample ID: SOIL
Sweet Corn

Item	Units	Test Results	Comments
pH		5.4	
Lime Test Index		65	
Organic Matter	%	3.1	
Phosphorus (P1)	lb/a	68	
Potassium (K)	lb/a	219	Apply 1/2 of the required Lime
Magnesium (Mg)	lb/a	179	this Spring of High Magnesium
Calcium (Ca)	lb/a	1178	Lime that contains about 12%
Sodium (Na)	lb/a	122	Magnesium. Also apply 1/2 of
Soluble Salts (EC)	mmho/cm		the required Lime next Fall
Cation Exchange Capacity (CEC)	meq/100g	10.2	of High Calcium Lime that
Base Saturation	%	41	contains about 38% Calcium.
Potassium (K)	%	2.7	
Magnesium (Mg)	%	7.3	
Calcium (Ca)	%	28.8	
Sodium (Na)	%	2.5	
Hydrogen (H)	%	58.6	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.9	
Mg to K Ratio		2.7	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 4 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Corn (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	116	lbs/acre
Phosphate(P2O5)	67	lbs/acre
Potash (K2O)	73	lbs/acre
Magnesium (Mg)	115	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use. You may split your Nitrogen application.

HOLMES LABORATORY INC.
3559 US 62
Millersburg, OH 44654

SOIL
ANALYSIS REPORT
[A Vital Key to Today's Agriculture]
(330) 893-2933 * www.holmeslab.com
Test Performed : A

Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1372
Sample ID: SOIL
Early NE

Item	Units	Test Results	Comments
pH		5.3	
Lime Test Index		65	
Organic Matter	%	2.6	
Phosphorus (P1)	lb/a	252	
Potassium (K)	lb/a	112	Apply 1/2 of the required Lime
Magnesium (Mg)	lb/a	128	this Spring of High Magnesium
Calcium (Ca)	lb/a	1005	Lime that contains about 12%
Sodium (Na)	lb/a	138	Magnesium. Also apply 1/2 of
Soluble Salts (EC)	mmho/cm		the required Lime next Fall
Cation Exchange Capacity (CEC)	meq/100g	9.5	of High Calcium Lime that
Base Saturation	%	37	contains about 38% Calcium.
Potassium (K)	%	1.5	
Magnesium (Mg)	%	5.6	
Calcium (Ca)	%	26.5	
Sodium (Na)	%	3.1	
Hydrogen (H)	%	63.2	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		4.7	
Mg to K Ratio		3.7	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 4 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	70	lbs/acre
Phosphate(P2O5)	0	lbs/acre
Potash (K2O)	148	lbs/acre
Magnesium (Mg)	146	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

HOLMES LABORATORY INC.
3559 US 62
Millersburg, OH 44654

SOIL
ANALYSIS REPORT
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Test Performed : A

Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1373
Sample ID: SOIL
Early Mideast

Item	Units	Test Results	Comments
pH		5.7	
Lime Test Index		66	
Organic Matter	%	3.3	
Phosphorus (P1)	lb/a	186	
Potassium (K)	lb/a	107	Use High Magnesium Lime that
Magnesium (Mg)	lb/a	204	contains about 12% Magnesium
Calcium (Ca)	lb/a	1285	and 20% Calcium. Apply the
Sodium (Na)	lb/a	148	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	9.3	
Base Saturation	%	49	
Potassium (K)	%	1.5	
Magnesium (Mg)	%	9.1	
Calcium (Ca)	%	34.5	
Sodium (Na)	%	3.4	
Hydrogen (H)	%	51.5	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.8	
Mg to K Ratio		6.2	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 3.4 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	53	lbs/acre
Phosphate(P2O5)	0	lbs/acre
Potash (K2O)	150	lbs/acre
Magnesium (Mg)	64	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Millersburg, OH 44654

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Test Performed : A

Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1374
Sample ID: SOIL
Early SE

Item	Units	Test Results	Comments
pH		5.4	
Lime Test Index		66	
Organic Matter	%	2.8	
Phosphorus (P1)	lb/a	198	
Potassium (K)	lb/a	61	Use High Magnesium Lime that
Magnesium (Mg)	lb/a	179	contains about 12% Magnesium
Calcium (Ca)	lb/a	1173	and 20% Calcium. Apply the
Sodium (Na)	lb/a	138	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	8.9	
Base Saturation	%	46	
Potassium (K)	%	.9	
Magnesium (Mg)	%	8.4	
Calcium (Ca)	%	33.1	
Sodium (Na)	%	3.3	
Hydrogen (H)	%	54.2	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.9	
Mg to K Ratio		9.5	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 3.3 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	65	lbs/acre
Phosphate(P2O5)	0	lbs/acre
Potash (K2O)	150	lbs/acre
Magnesium (Mg)	77	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Millersburg, OH 44654

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Test Performed : A

Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1375
Sample ID: SOIL
Early NW

Item	Units	Test Results	Comments
pH		5.2	
Lime Test Index		65	
Organic Matter	%	2.0	
Phosphorus (P1)	lb/a	324	
Potassium (K)	lb/a	163	Apply 1/2 of the required Lime
Magnesium (Mg)	lb/a	117	this Spring of High Magnesium
Calcium (Ca)	lb/a	1071	Lime that contains about 12%
Sodium (Na)	lb/a	143	Magnesium. Also apply 1/2 of
Soluble Salts (EC)	mmho/cm		the required Lime next Fall
Cation Exchange Capacity (CEC)	meq/100g	9.7	of High Calcium Lime that
Base Saturation	%	38	contains about 38% Calcium.
Potassium (K)	%	2.2	
Magnesium (Mg)	%	5.0	
Calcium (Ca)	%	27.7	
Sodium (Na)	%	3.1	
Hydrogen (H)	%	62.0	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		5.5	
Mg to K Ratio		2.3	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 4 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	85	lbs/acre
Phosphate(P2O5)	0	lbs/acre
Potash (K2O)	114	lbs/acre
Magnesium (Mg)	162	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Test Performed : A

Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1376
Sample ID: SOIL
Early Midwest

Item	Units	Test Results	Comments
pH		5.5	
Lime Test Index		66	
Organic Matter	%	2.9	
Phosphorus (P1)	lb/a	41	
Potassium (K)	lb/a	46	Use High Magnesium Lime that
Magnesium (Mg)	lb/a	173	contains about 12% Magnesium
Calcium (Ca)	lb/a	1234	and 20% Calcium. Apply the
Sodium (Na)	lb/a	133	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	9.0	
Base Saturation	%	47	
Potassium (K)	%	.7	
Magnesium (Mg)	%	8.1	
Calcium (Ca)	%	34.5	
Sodium (Na)	%	3.2	
Hydrogen (H)	%	53.6	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		4.3	
Mg to K Ratio		12.2	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 3.3 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	63	lbs/acre
Phosphate(P2O5)	75	lbs/acre
Potash (K2O)	150	lbs/acre
Magnesium (Mg)	86	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.

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Customer : Tweed

Joyful Journey Alpacas, LLC
13920 W. State Rd. 77
Hayward, WI 54843

Date Reported : 05/15/2014
Lab Number : 14-1377
Sample ID: SOIL
Early SW

Item	Units	Test Results	Comments
pH		5.8	
Lime Test Index		67	
Organic Matter	%	2.8	
Phosphorus (P1)	lb/a	62	
Potassium (K)	lb/a	61	Use High Calcium Lime that
Magnesium (Mg)	lb/a	204	contains about 38% Calcium
Calcium (Ca)	lb/a	1285	and 1% Magnesium. Apply the
Sodium (Na)	lb/a	138	required amount once, anytime.
Soluble Salts (EC)	mmho/cm		
Cation Exchange Capacity (CEC)	meq/100g	8.0	
Base Saturation	%	55	
Potassium (K)	%	1.0	
Magnesium (Mg)	%	10.6	
Calcium (Ca)	%	40.0	
Sodium (Na)	%	3.7	
Hydrogen (H)	%	44.8	
Sulfur (SO4)	lb/a		
Zinc (Zn)	lb/a		
Manganese (Mn)	lb/a		
Iron (Fe)	lb/a		
Copper (Cu)	lb/a		
Boron (B)	lb/a		
Ca to Mg Ratio		3.8	
Mg to K Ratio		10.9	
Nitrate-Nitrogen (NO3-N)	lb/a		

*** Retest every year at the same time and depth ***

Lime and Fertilizer Recommendations

Required Lime = 1.3 tons/acre :Lime requirements are to bring
your soil pH to the ideal level.
For Crop: Hay (See Comments Above)

Actual Units Of Fertilizer Needed For This Crop Growing Year

Nitrogen (N)	65	lbs/acre
Phosphate(P2O5)	54	lbs/acre
Potash (K2O)	150	lbs/acre
Magnesium (Mg)	26	lbs/acre

Note : See your local Ag Supplier for assistance with what type of
fertilizer to use.

Apply 1/2 of fertilizer after 1st cutting and the other 1/2 after
the 2nd cutting.