My 3 Streams Farm herd, mob-browsing white ash


Felled white birch in late spring

American Guinea sow Nosenia, retired from parentng,  comes home from digging unwanted wild parsnips at another farm in fall, and helps haul supplies to my ruminants in winter.

All my animals, steer, goats, hog,
want green ensiled tree leaves,
more than I can hand-strip for winter.

So I dreamed of a machine...


Dynamic BMPA-315-112-K-P-H-20220130-215 feed systems motor
Feed Side:
John Deere gathering belt, left side driving, right freewheeling
Dynamic BMPH50H2KP, 3.15 cu.in./rev.flail rotor motors
Floating side inserts with spring action here (same below). Center rotor axle to floating edge 17”
Hydraulic pressure tank (previously propane)
22gpm 2-stage (7 gpm high/22 gpm low stage) 3000 psi max.@3600 rpm max. hydraulic pump
Honda GX390 13 horse engine
2 flow control valves (1 for feed, 1 for flails)
10”slice of 55 gal. drum (other side same))
Shut-off
Hydraulic line guard/branch rest 2½”x 2½”x 54”
Feed roller axle centers 8¼“ apart
Trailer side cut out for leaf bin; Wooden beam bolted in for travel.
Karl Hallen (Hallen Farm & SUNY ESF Willow Biomass) made it.

The flails are set in a spiral pattern, to send leaves downward. The wavy JD corn-head belts have a much smaller gap than this now, thanks to new larger free-wheeling sprockets made by Jon Thomas at Thomas Bandsaw Mills. Those belts take stock too short or floppy to feed from front to rear tire-rollers across the moving flails.

I harvested this leafy red oak brush from two small trunks shown, leaving stubs at top, and some lower, shortened leaf-bearing branches. These trees will re-sprout for future harvests.

Check out Faithful Venture farm's Holstein browse-line. The cattle want more leaves than they can reach.

# LEAF-SILAGE YIELDS FROM FIELD EDGE HARVESTS on 2 FARMS

| Site | lin ft per barrel (30 gal, 22 lbs DM ave) | lbs DM per lin ft |
|---|---|---|
| YKF | 10.56 | 2.08 |
| FVF | 10.36 | 2.13 |

| Site | Description |
|---|---|
| Y Knot Farm | All growth previously pollarded or coppiced for sheep fodder; 3 to 10 yr growth<br>Black cherry pollards large and well-spaced, a few red maples, birches.<br>Opposite edge mostly big-toothed aspen, white ash. |
| Faithful Venture Farm | First harvest of 20 to 40 year-old trees, on rich pasture edge<br>Green and white ash, red oak; small amount of basswood |

MOFGA 18-year pasture-edge spread of quaking aspen

| MOFGA 18 yr field-edge growth of Q Aspen | | | |
|---|---|---|---|
| | 15 ft deep | | 39.933%DM |
| lbs DM per trunk | $ft^2$ per trunk | | lbs DM per lin ft |
| 8.595 | 28.85 = 5.37 x | 5.37 | 4.47 |

Red maple turns grayish green; Norway maple (much preferred) stays bright green.

Willow, ash, oak and cherry (all shown) are also choice.

Hydrogen Cyanide in cherry disburses when ensiled or dried.

# Some Machine-Separated Leaves

Big-toothed aspen leaves separated October 11th at...

Black locust separated October 4 th at Faithful Venture...

Big toohed aspen hand-stripped, from Y Knot Farm Septembe...

American elm separated October 1st at Faithful Venture...

Green ash separated July 26th

Beech separated July 26th

White ash separated September18th,a t Y Knot Farm, t...

Winterberry separated September 15th, Y Knot Farm,

Norway maple separated September 14th at Y Knot Farm

Red oak separated September 14th at Y Knot Farm

Rock maple, cut June 30th and July 1st,

Black cherry, cut June 26th, separated June

Hawthorn, tattered small % leaves separated,

Autumn olive, from one bush that yielded 7

Pin cherry, cut June 30th and July 1st,

Apple, separated July 1st, small tree cut low by

Quaking aspen separated July 13th

Gray birch separated July 10th

| | Dry Matter | Crude Protei | Availa P | ADIC P | Adj CP | Sol P %CP | RDP %CP | SP %DM | RDP %DM | ADF | NDF | Dig F | NFC | WSC | Fat EE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2ND CUT HAY PACKED 12/21/23 | 81.4 | 18.6 | | | 18.60 | 33.00 | 70.00 | 6.14 | 13.0 | 35.9 | 57.6 | 21.7 | 13.9 | 7.5 | |
| 1ST CUT HAY PACKED 12/21/23 | 83.00 | 9.40 | | | 9.40 | 28.00 | 62.00 | 2.63 | 5.8 | 38.50 | 64.30 | 25.8 | 16.3 | 9.70 | |
| Dairy One Ave 2004-'24 Grass Hay | | 11.03 | | | | 33.94 | 65.02 | 3.74 | 7.2 | | | | 19.4 | 11.3 | 2.63 |
| Dairy One Ave 2004-'24 Grass Silage | | 15.48 | | | | 53.19 | 70.70 | 8.23 | 10.9 | | | | 16.8 | 7.96 | 3.97 |
| | | | | | | | | | | | | | | | |
| Ave 9 Woody Species | 43.20 | 12.32 | 8.36 | 3.95 | 8.57 | 15.00 | 23.85 | 1.84 | 2.8 | 25.92 | 37.51 | 11.6 | 37.1 | 9.88 | 5.85 |
| Red Oak Aves | 47.08 | 14.66 | 11.84 | 2.80 | | | | | | 28.60 | 45.96 | 17.4 | | 5.35 | 6.50 |
| Quaking Aspen Aves | 39.93 | 14.18 | 10.10 | 4.07 | 11.10 | 11.50 | 18.00 | 1.63 | 2.6 | 23.50 | 33.15 | 9.7 | | 11.17 | |
| Big-Toothed Aspen Aves | 39.05 | 13.52 | 8.61 | 4.90 | 9.70 | 11.38 | 18.75 | 1.59 | 2.5 | 25.35 | 36.30 | | | 10.78 | |
| White Ash Aves | 41.92 | 11.08 | 6.58 | 4.48 | 7.58 | 18.00 | 19.20 | 1.99 | 2.1 | 26.75 | 39.20 | 12.5 | | 8.38 | |
| Green Ash Aves | 41.88 | 12.98 | 7.98 | 5.00 | 8.98 | 21.75 | 27.75 | 2.82 | 3.6 | 28.60 | 41.23 | 12.6 | 22.90 | 7.45 | 4.90 |
| Black Cherry Aves | 41.12 | 13.47 | 10.28 | 3.19 | 11.83 | 19.70 | 20.75 | 2.65 | 2.8 | 22.19 | 30.02 | 7.8 | 42.50 | 8.77 | 4.90 |
| Gray Birch Aves | 45.91 | 11.56 | 6.66 | 4.89 | 5.83 | | (54) | | | 31.87 | 44.40 | 12.5 | 33.78 | 8.24 | 6.98 |
| Red Maple Aves | 44.86 | 9.98 | 7.66 | 2.30 | 7.00 | 13.67 | 32.50 | 1.36 | 3.2 | 23.50 | 33.30 | 9.8 | 39.63 | 14.48 | 7.37 |
| Rock Maple Aves | 47.10 | 9.45 | 5.55 | 3.90 | 6.55 | 9.00 | 30.00 | 0.85 | 2.8 | 22.90 | 34.05 | 11.2 | 46.70 | 14.30 | 4.45 |

Interestingly, ensiling increased Fat Ether Extract by 10.89% of fresh level, across 16 species


Multiflora Rose


Honeysuckle

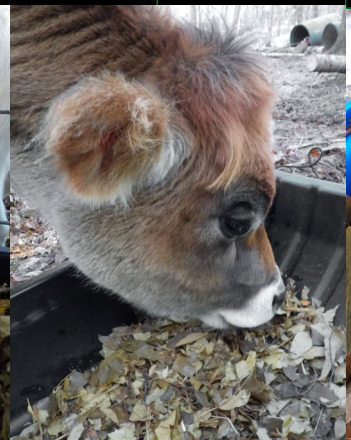

Autumn Olive

| Harvest Site, Species, Harvest Date | CT 1-10 | Dry Matter | Crude Prot | Avail P | ADIC P | Adj CP | Solu %CP | Degrbl %CP | Solu %DM | Degrbl %DM | ADF | NDF | NFC | % WSC | CrFat EE | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FVF BITTERSWEET FRESH 6/28-29/24 | | 24 | 17 | | | | | | | | 25.4 | 36.5 | 31.5 | 8.6 | 6.3 | 5.8 |
| FVF MULTI-FLORA ROSE FRESH 6/30/24 | | 23.3 | 14.1 | | | | | | | | 21.7 | 32.7 | 41.1 | 17.8 | 4.4 | 4.9 |
| MOFGA AUTUMN OLIVE ENSILED 7/5-6/23 | | 39.3 | 21 | 16.6 | 4.3 | 17.6 | 23 | 50 | 4.83 | 10.5 | 33.7 | 52.3 | 17.9 | 5.6 | 3.1 | 4.8 |
| MOFGA HONEYSUCKLE FRESH 6/25-26/23 | 1 | 31.3 | 11.1 | | | 11.1 | 13 | 48 | 1.44 | 5.33 | 29.9 | 45 | 31.8 | 13.6 | 5.2 | 5.3 |
| MOFGA HONEYSUCKLE ENSILED 6/25/23 | | 25.4 | 14.9 | 8.7 | 6.2 | 9.7 | 13 | 25 | 1.94 | 3.73 | 30.9 | 43.8 | | 4.3 | ot re | 5.2 |
| YKF SMOOTH BUCKTHORN FRESH 9 /7/23 | 3.5 | 32.6 | 14.3 | | | | failed | failed | | | 20.3 | 32.5 | 39.8 | 15.3 | 6.3 | 5.3 |
| YKF SMOOTH BUCKTHORN ENSI'D 9/7/23 | | 31.8 | 15.4 | 12.4 | 3 | | failed | failed | | | 25.9 | 38.9 | 31.4 | 6.5 | 7 | 5.4 |
| YKF LEATHER WOOD FRESH 9/14/23 | 5 | 45.2 | 9.5 | | | 9.5 | 4 | 26 | 0.38 | 2.47 | 27 | 36.5 | 40.9 | 16.5 | 7.4 | 5.2 |
| YKF LEATHERWOOD ENSILED 9/14/23 | | 45.9 | 8.7 | 3.4 | 5.3 | 4.4 | 5 | 9 | 0.44 | 0.78 | 32.4 | 43.2 | 34.3 | 13.9 | 8 | 5.8 |
| YKF WINTERBERRY FRESH 9/15/23 | 3.5 | 43.5 | 11.7 | | | 11.7 | 6 | 33 | 0.70 | 3.86 | 27.6 | 43.4 | 34.5 | 9.6 | 5.9 | 5.7 |
| YKF WINTERBERRY ENSILED 9/15/23 | | 41.8 | 12.6 | 7.1 | 5.5 | 8.1 | 12 | 24 | 1.51 | 3.02 | 31.4 | 49.2 | 27 | 4 | 6.1 | 5.4 |
| MOFGA ARROW WOOD FRESH 6/25/23 | 5 | 39.1 | 12 | | | 12 | 12 | 23 | 1.44 | 2.76 | 31.4 | 43 | 32.5 | 9.4 | 6.4 | 5 |
| MOFGA ARROW WOOD ENSILED 6/25/23 | | 36.2 | 12.8 | 5.4 | 7.4 | 6.4 | 15 | 20 | 1.92 | 2.56 | 36.2 | 49.7 | 25.3 | 5.1 | 6.4 | 4.6 |
| YKF STAGHORN SUMACH FRESH 6/25/24 | | 33.3 | 14.9 | | | | | | | | 16.9 | 22.9 | 52.2 | 27 | 5.1 | 4.7 |

| Sample # | Sample Description | Relative Condensed Tannin Content | Numerical Intensity | Sample # | Sample Description | Relative Condensed Tannin Content | Numerical Intensity |
|---|---|---|---|---|---|---|---|
| 1 | Pagoda dogwood YKF (*Cornus alternij* | + | 1 | 14 | Buckthorn YKF | +++- | 3.5 |
| 2 | Honeysuckle MOFGA | + | 1 | 15 | Green Ash MOFGA | + | 1 |
| 3 | "Fresh" Black Cherry MOFGA | +++++ | 5 | 16 | Red Oak YKF | +++++- | 5.5 |
| 4 | American Beech MOFGA | +++++ | 5 | 17 | Winterberry YKF | ++++- | 3.5 |
| 5 | Rock Maple MOFGA (3.5/10 speed) | +++++ | 5 | 18 | Black Locust FVF | ++++++++++ | 10 |
| 6 | Box Elder MOFGA | ++++++ | 6 | 19 | Elm FVF | +++++ | 5 |
| 7 | White Ash FVF | 0 | 0 | 20 | Arrowwood (Flowering) MOFGA | +++++ | 5 |
| 8 | Leatherwood Knot Farm | +++++ | 5 | 21 | White Birch YKF | ++++++++ | 8 |
| 9 | Pin Cherry MOFGA | +++++ | 5 | 22 | Red Maple Pollard YKF | +++++ | 5 |
| 10 | Norway Maple B.B. Ditch | +++- | 3.5 | 23 | Grey Birch Refuse From Barrel 30 MOFGA, Ensiled 7/19/23 | +++++++ | 7 |
| 11 | Grey Birch MOFGA | +++++++ | 7 | 23P | Grey Birch Refuse Seed Catkins From Barrel 30 MOFGA, Ensiled 7/19/23 | +++++++ | 7 |
| 12 | Big Toothed Aspen YKF | +++++++ | 7 | 24 | Creeping Blackberry Leaves | +- | 1.5 |
| 13 | Basswood FVF | ++++- | 4.5 | 25 | Quaking Aspen | +++++++ | 7 |
| **Wayne Zeller's Condensed Tannin Screening, 2024** | | | | | Birdsfoot Trefoil Reference | ++++++ | 6 |

| DM Eaten Per Day (lbs) | Estimated DM 5 Milkers ate, 45% of T, 4.5% BW | | Estimated DM 5 Non-milkers ate, 25% of T, 3% BW | | Estimated DM Steer ate, 30% T, 2% BW | | Actual DM used | 10% 1st-cut hay est waste | Est DM eaten (Used – 10% 1st-cut hay) | |
|---|---|---|---|---|---|---|---|---|---|---|
| DM Intake based on refs | 22.5 | | 12.5 | | 15 | | | | 50 | |
| AL | 22.842 | | 12.69 | | 15.228 | | 53.59 | 2.83 | 50.76 | |
| AH | | 23.0535 | | 12.8075 | | 15.369 | 54.08 | 2.85 | | 51.23 |
| BL | 21.5055 | | 11.9475 | | 14.337 | | 50.93 | 3.14 | 47.79 | |
| BH | | 23.607 | | 13.115 | | 15.738 | 55.07 | 2.61 | | 52.46 |
| CL | 23.994 | | 13.33 | | 15.996 | | 56.58 | 3.26 | 53.32 | |
| CH | | 23.643 | | 13.135 | | 15.762 | 55.29 | 2.75 | | 52.54 |
| Ave: | 22.78 | 23.44 | 12.66 | 13.02 | 15.19 | 15.62 | 54.26 | 2.91 | 50.62 | 52.08 |





*My animals are grass/browse-fed (no grain is fed).

The steer ate leaf-silage as 33% DM of his diet;

The goats ate leaf-silage as 55% DM of their diet,

all in only one 2-hour offering period per day.

They all had unlimited 1st-cut hay 24 hours per day.

I confounded my 3 Streams Farm home trial, by replacing leaf-silage with higher-protein 2nd-cut treat-hay in the 2-hr offering-periods (with no treat, they might have jumped the fence).

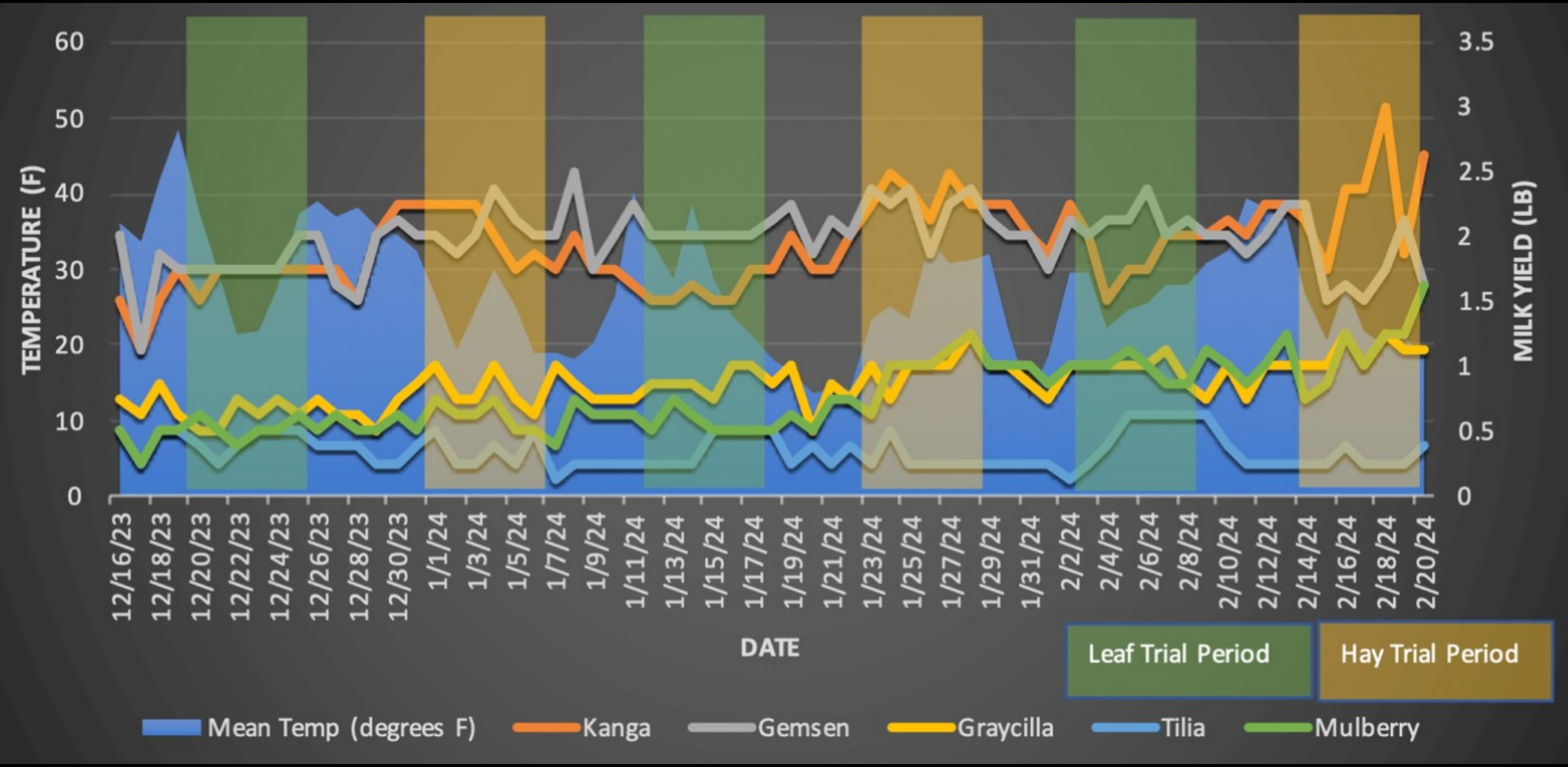
Also, they ate a bit less DM in 1st-cut hay, with the more concentrated energy of leaf-silage.
Yet milk-yield difference was small.

| | Crude Protein | Adj Crud Protein | Sol P %CP | R Degr P %CP | SP %DM | RDP %DM |
|---|---|---|---|---|---|---|
| 2ND CUT HAY | 18.6 | 18.6 | 33 | 70 | 6.138 | 13.02 |
| | | | | | | |
| LEAF-SILAGE | 12.37 | 8.54 | 14.53 | 23.31 | 1.84 | 2.77 |

6% less milk in leaf-silage period than in 2nd-cut hay period

4.9% less 1st-cut hay eaten in leaf-silage than 2nd-cut hay per.

2.9% less T DM eaten in leaf-silage period than in 2nd-cut hay per




Graph by Megan Smith, UME Sustainable Agriculture 2024 Graduating Class

# TILDEN POND FARM COW TRIAL

## Mini-Jersey Betsy's Milk Yields With & Without Leaf-Silage

| With leaf-silage | lbs.AM | oz. AM | lbs. PM | oz. PM | | Without leaf-silage | lbs.AM | oz. AM | lbs. PM | oz. PM |
|---|---|---|---|---|---|---|---|---|---|---|
| 12/12/23 | 9 | 13 | 12 | 5 | | 12/27/23 | 10 | 2 | 11 | 7 |
| 12/13/23 | 9 | 0 | 11 | 6 | | 12/28/23 | 10 | 0 | 11 | 8 |
| 12/14/23 | 10 | 14 | 11 | 8 | | 12/29/23 | 11 | 9 | 10 | 6 |
| 12/15/23 | 10 | 3 | 12 | 3 | | 12/30/23 | 10 | 0 | 10 | 4 |
| T Honeysuckle | 38 | 30 | 46 | 22 | 21.81 lbs/day ave. with Honeysuckle | | | | | |
| 12/16/23 | 10 | 15 | 11 | 0 | | 12/31/23 | 10 | 3 | 8 | 9 |
| 12/17/23 | 10 | 15 | 10 | 13 | | 01/01/24 | 9 | 9 | 9 | 10 |
| 12/18/23 | 10 | 2 | 11 | 8 | | 01/02/24 | 10 | 5 | 9 | 12 |
| 12/19/23 | 10 | 9 | 11 | 5 | | 01/03/24 | 9 | 1 | 10 | 0 |
| 12/20/23 | 10 | 5 | 10 | 9 | | 01/05/24 | 9 | 8 | 9 | 4 |
| 12/21/23 | 11 | 6 | 11 | 0 | | 01/06/24 | 11 | 12 | 8 | 13 |
| T Quaking Aspen | 61 | 52 | 64 | 35 | 21.74 lbs/day ave. with Q. Aspen | | | | | |
| Ave Honeys+Asp | 12.45455 | 10.18182 | 14.18182 | 7.181818 | | Averages | 9.9 | 4.9 | 9.5 | 7.3 |
| Ave. daily total | 21.775 lbs. | | | | | | Ave. daily | total 20.15 lbs (excluding 1/4/24) | | |
| 1.625 lbs. = 1 lb. 10 oz more/ day with leaf-silage (approx 3 ½ cups) | | | | | | 01/04/24 | 10 | 13? smudged | 9 | 13 |

14 Holstein heifers ate a barrel of elm in 20 minutes, but had to chew this oak longer (finished in 1 hour).

Beef cattle at Meadowsweet Farm usually clean up anything the other animals don’t want. This gray birch has harvest-timing issues.

Meadowsweet Icelandic sheep with yellow birch silage, which everyone loves.

The best fertilizer is the footprint of the farmer.

This presentation was made possible thanks to two Farmer Grants from Northeast Sustainable Agriculture Research and Education (SARE)*, SARE FNE-22-013 and SARE FNE24-083.

FMI go to https://nesare.org or https://3streamsfarmbelfastme.blogspot.com

* SARE is funded by National Institute of Food and Agriculture (NIFA).

Shana Hanson (207) 338-3301(voice) https://3streamsfarmbelfastme.blogspot.com

# TREES p.3, SHRUBS, p.1-2

These analyses were supported by Northeast SARE's award for FNE24-083. SARE is funded by National Institute for Food and Agriculture.

| Harvest Site, Species, Harvest Date | CT 1-10 | Dry Matter | Crude Prot | Avail P | ADICP | Adj CP | Solu %CP | Degrbl %CP | Solu %DM | Degrbl %DM | ADF | NDF | NFC | % WSC | CrFat EE | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FVF BITTERSWEET FRESH 6/28-29/24 | | 24 | 17 | | | | | | | | 25.4 | 36.5 | 31.5 | 8.6 | 6.3 | 5.8 |
| | | | | | | | | | | | | | | | | |
| FVF MULTI-FLORA ROSE FRESH 6/30/24 | | 23.3 | 14.1 | | | | | | | | 21.7 | 32.7 | 41.1 | 17.8 | 4.4 | 4.9 |
| | | | | | | | | | | | | | | | | |
| MOFGA AUTUMN OLIVE ENSILED 7/5-6/23 | | 39.3 | 21 | 16.6 | 4.3 | 17.6 | 23 | 50 | 4.83 | 10.5 | 33.7 | 52.3 | 17.9 | 5.6 | 3.1 | 4.8 |
| | | | | | | | | | | | | | | | | |
| MOFGA HONEYSUCKLE FRESH 6/25-26/23 | 1 | 31.3 | 11.1 | | | 11.1 | 13 | 48 | 1.44 | 5.33 | 29.9 | 45 | 31.8 | 13.6 | 5.2 | 5.3 |
| MOFGA HONEYSUCKLE ENSILED 6/25/23 | | 25.4 | 14.9 | 8.7 | 6.2 | 9.7 | 13 | 25 | 1.94 | 3.73 | 30.9 | 43.8 | | 4.3 | not rec | 5.2 |
| | | | | | | | | | | | | | | | | |
| YKF SMOOTH BUCKTHORN FRESH 9 /7/23 | 3.5 | 32.6 | 14.3 | | | | failed | failed | | | 20.3 | 32.5 | 39.8 | 15.3 | 6.3 | 5.3 |
| YKF SMOOTH BUCKTHORN ENSI'D 9/7/23 | | 31.8 | 15.4 | 12.4 | 3 | | failed | failed | | | 25.9 | 38.9 | 31.4 | 6.5 | 7 | 5.4 |
| | | | | | | | | | | | | | | | | |
| YKF LEATHER WOOD FRESH 9/14/23 | 5 | 45.2 | 9.5 | | | 9.5 | 4 | 26 | 0.38 | 2.47 | 27 | 36.5 | 40.9 | 16.5 | 7.4 | 5.2 |
| YKF LEATHERWOOD ENSILED 9/14/23 | | 45.9 | 8.7 | 3.4 | 5.3 | 4.4 | 5 | 9 | 0.44 | 0.78 | 32.4 | 43.2 | 34.3 | 13.9 | 8 | 5.8 |
| | | | | | | | | | | | | | | | | |
| YKF WINTERBERRY FRESH 9/15/23 | 3.5 | 43.5 | 11.7 | | | 11.7 | 6 | 33 | 0.70 | 3.86 | 27.6 | 43.4 | 34.5 | 9.6 | 5.9 | 5.7 |
| YKF WINTERBERRY ENSILED 9/15/23 | | 41.8 | 12.6 | 7.1 | 5.5 | 8.1 | 12 | 24 | 1.51 | 3.02 | 31.4 | 49.2 | 27 | 4 | 6.1 | 5.4 |
| | | | | | | | | | | | | | | | | |
| MOFGA ARROW WOOD FRESH 6/25/23 | 5 | 39.1 | 12 | | | 12 | 12 | 23 | 1.44 | 2.76 | 31.4 | 43 | 32.5 | 9.4 | 6.4 | 5 |
| MOFGA ARROW WOOD ENSILED 6/25/23 | | 36.2 | 12.8 | 5.4 | 7.4 | 6.4 | 15 | 20 | 1.92 | 2.56 | 36.2 | 49.7 | 25.3 | 5.1 | 6.4 | 4.6 |
| | | | | | | | | | | | | | | | | |
| YKF STAGHORN SUMACH FRESH 6/25/24 | | 33.3 | 14.9 | | | | | | | | 16.9 | 22.9 | 52.2 | 27 | 5.1 | 4.7 |

| Harvest Site, Species, Harvest Date | TDN | NEL | NEM | NEG | RFV | Calcium | Phosphor | Magnesium | Potassium | Sodium | Iron | Zinc | Copper | Manganese | Molybde | Sulfur |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FVF BITTERSWEET FRESH 6/28-29/24 | 67 | 0.73 | 0.72 | 0.45 | 176 | 1.37 | 0.23 | 0.46 | 2.3 | 0.005 | 94 | 17 | 3 | 31 | 0 | |
| | | | | | | | | | | | | | | | | |
| FVF MULTI-FLORA ROSE FRESH 6/30/24 | 67 | 0.73 | 0.7 | 0.43 | 205 | 1.17 | 0.24 | 0.3 | 2.06 | 0.005 | 180 | 17 | 8 | 113 | 0.1 | |
| | | | | | | | | | | | | | | | | |
| MOFGA AUTUMN OLIVE ENSILED 7/5-6/23 | 59 | 0.58 | 0.56 | 0.3 | | 0.7 | 0.18 | 0.12 | 1.98 | 0.009 | 106 | 23 | 9 | 295 | 0.3 | 0.21 |
| | | | | | | | | | | | | | | | | |
| MOFGA HONEYSUCKLE FRESH 6/25-26/23 | 65 | 0.68 | 0.67 | 0.4 | | | | | | | | | | | | |
| MOFGA HONEYSUCKLE ENSILED 6/25/23 | 57 | 0.58 | 0.53 | 0.27 | 138 | 1.37 | 0.24 | 0.32 | 1.69 | 0.011 | 349 | 53 | 7 | 227 | 0 | 0.17 |
| | | | | | | | | | | | | | | | | |
| YKF SMOOTH BUCKTHORN FRESH 9/7/23 | 70 | 0.77 | 0.76 | 0.49 | | | | | | | | | | | | |
| YKF SMOOTH BUCKTHORN ENSILED 9/7/23 | 67 | 0.72 | 0.71 | 0.44 | | 1.52 | 0.39 | 0.3 | 1.36 | 0.012 | 249 | 43 | 6 | 393 | 1.3 | 0.15 |
| | | | | | | | | | | | | | | | | |
| YKF LEATHER WOOD FRESH 9/14/23 | 72 | 0.78 | 0.79 | 0.51 | | | | | | | | | | | | |
| YKF LEATHERWOOD ENSILED 9/14/23 | 66 | 0.7 | 0.7 | 0.43 | | 1.55 | 0.21 | 0.19 | 0.74 | 0.012 | 123 | 89 | 8 | 171 | 0.6 | 0.1 |
| | | | | | | | | | | | | | | | | |
| YKF WINTERBERRY FRESH 9/15/23 | 69 | 0.72 | 0.73 | 0.45 | | | | | | | | | | | | |
| YKF WINTERBERRY ENSILED 9/15/23 | 62 | 0.64 | 0.63 | 0.37 | | 0.92 | 0.15 | 0.31 | 1.14 | 0.014 | 115 | 232 | 15 | 479 | 0.6 | 0.19 |
| | | | | | | | | | | | | | | | | |
| MOFGA ARROW WOOD FRESH 6/25/23 | 68 | 0.72 | 0.72 | 0.45 | | | | | | | | | | | | |
| MOFGA ARROW WOOD ENSILED 6/25/23 | 60 | 0.61 | 0.6 | 0.34 | | 1.17 | 0.2 | 0.2 | 1.26 | 0.011 | 332 | 108 | 8 | 433 | 0.8 | 0.15 |
| | | | | | | | | | | | | | | | | |
| YKF STAGHORN SUMACH FRESH 6/25/24 | 74 | 0.83 | 0.82 | 0.53 | 308 | 0.64 | 0.32 | 0.16 | 1.64 | 0.003 | 57 | 24 | 4 | 26 | 1.1 | |

| Harvest Site, Species, Harvest Date | Dry Matter | Crude Protei | Availa P | ADIC P | Adj CP | Sol P %CP | RDP %CP | SP %DM | RDP %DM | ADF | NDF | Dig F | NFC | WSC | Fat EE | pH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2ND CUT HAY PACKED 12/21/23 | 81.40 | 18.60 | | | 18.60 | 33.00 | 70.00 | 6.14 | 13.02 | 35.90 | 57.60 | 21.70 | 13.90 | 7.50 | | |
| 1ST CUT HAY PACKED 12/21/23 | 83.00 | 9.40 | | | 9.40 | 28.00 | 62.00 | 2.63 | 5.83 | 38.50 | 64.30 | 25.80 | 16.30 | 9.70 | | |
| Dairy One Ave 2004-'24 Grass Hay | | 11.03 | | | | 33.94 | 65.02 | 3.74 | 7.17 | | | | 19.40 | 11.33 | 2.63 | |
| Dairy One Ave 2004-'24 Grass Silage | | 15.48 | | | | 53.19 | 70.70 | 8.23 | 10.94 | | | | 16.80 | 7.96 | 3.97 | |
| Ave 10 Woody Species | 43.20 | 12.32 | 8.36 | 3.95 | 8.57 | 15.00 | 23.85 | 1.84 | 2.81 | 25.92 | 37.51 | 11.59 | 37.10 | 9.88 | 5.85 | 4.97 |
| Red Oak Aves | 47.08 | 14.66 | 11.84 | 2.80 | | | | | | 28.60 | 45.96 | 17.36 | | 5.35 | 6.50 | 5.08 |
| Quaking Aspen Aves | 39.93 | 14.18 | 10.10 | 4.07 | 11.10 | 11.50 | 18.00 | 1.63 | 2.55 | 23.50 | 33.15 | 9.65 | | 11.17 | | 5.10 |
| Big-Toothed Aspen Aves | 39.05 | 13.52 | 8.61 | 4.90 | 9.70 | 11.38 | 18.75 | 1.59 | 2.51 | 25.35 | 36.30 | | | 10.78 | | 5.37 |
| White Ash Aves | 41.92 | 11.08 | 6.58 | 4.48 | 7.58 | 18.00 | 19.20 | 1.99 | 2.13 | 26.75 | 39.20 | 12.45 | | 8.38 | | 5.33 |
| Green Ash Aves | 41.88 | 12.98 | 7.98 | 5.00 | 8.98 | 21.75 | 27.75 | 2.82 | 3.60 | 28.60 | 41.23 | 12.63 | 22.90 | 7.45 | 4.90 | 4.66 |
| Black Cherry Aves | 41.12 | 13.47 | 10.28 | 3.19 | 11.83 | 19.70 | 20.75 | 2.65 | 2.80 | 22.19 | 30.02 | 7.83 | 42.50 | 8.77 | 4.90 | 5.03 |
| Gray Birch Aves | 45.91 | 11.56 | 6.66 | 4.89 | 5.83 | | (54) | | | 31.87 | 44.40 | 12.53 | 33.78 | 8.24 | 6.98 | 4.92 |
| Red Maple Aves | 44.86 | 9.98 | 7.66 | 2.30 | 7.00 | 13.67 | 32.50 | 1.36 | 3.24 | 23.50 | 33.30 | 9.80 | 39.63 | 14.48 | 7.37 | 4.30 |
| Rock Maple Aves | 47.10 | 9.45 | 5.55 | 3.90 | 6.55 | 9.00 | 30.00 | 0.85 | 2.84 | 22.90 | 34.05 | 11.15 | 46.70 | 14.30 | 4.45 | |

| | TDN | NEL | NEM | NEG | Phospl | Magne | Potass | Sodium | Iron | Zinc | Coppe | Mang | PPM I | Sulfu | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2ND CUT HAY PACKED 12/21/23 | 57 | 0.53 | 0.52 | 0.26 | 0.5 | 0.2 | 3.3 | 0.018 | 604 | 45 | 11 | 73 | 2.8 | 0.31 | |
| 1ST CUT HAY PACKED 12/21/23 | 55 | 0.47 | 0.48 | 0.23 | 0.22 | 0.16 | 1.02 | 0.113 | 122 | 40 | 5 | 343 | 1.1 | 0.17 | |
| Hay Aves | 56 | 0.5 | 0.5 | 0.245 | 0.36 | 0.18 | 2.16 | 0.0655 | 363 | 42.5 | 8 | 208 | 1.95 | 0.24 | |
| Ave 10 Woody Species | 62.574 | 0.6649 | 0.642 | 0.378 | 0.221 | 0.203 | 0.904 | 0.0123 | 127.7 | 78.35 | 8 | 261 | 0.149 | 0.137 | C tannins scale 1-10 |
| Red Oak Aves | 60.2 | 0.614 | 0.582 | 0.322 | 0.207 | 0.175 | 0.885 | 0.011 | 79.25 | 38 | 5.5 | 780.3 | 0.05 | 0.14 | 5.5 |
| Quaking Aspen Aves | 61.67 | 0.662 | 0.615 | 0.352 | 0.24 | 0.234 | 0.941 | 0.0094 | 55.43 | 126.7 | 7.286 | 112.1 | 0 | 0.153 | 7 |
| Big-Toothed Aspen Aves | 60.735 | 0.646 | 0.615 | 0.352 | 0.175 | 0.21 | 0.62 | 0.013 | 58 | 273.5 | 9.5 | 439 | 0 | 0.16 | 7 |
| White Ash Aves | 59.33 | 0.622 | 0.57 | 0.31 | 0.252 | 0.247 | 1.12 | 0.008 | 81.17 | 15.5 | 9.833 | 60.33 | 0 | 0.1 | 0 |
| Green Ash Aves | 59.25 | 0.62 | 0.57 | 0.313 | 0.208 | 0.285 | 1.23 | 0.006 | 97.5 | 18.5 | 13.25 | 67.25 | 0.175 | 0.205 | 5 |
| Black Cherry Aves | 64.182 | 0.6964 | 0.655 | 0.391 | 0.29 | 0.255 | 1.034 | 0.0173 | 82.46 | 31.73 | 5.091 | 147.5 | 0.055 | 0.11 | 5 |
| Gray Birch Aves | 63 | 0.6586 | 0.637 | 0.373 | 0.213 | 0.142 | 0.74 | 0.01 | 115.5 | 125.5 | 7.166 | 227.5 | 0.133 | 0.133 | 7 |
| Red Maple Aves | 68.8 | 0.75 | 0.734 | 0.46 | 0.24 | 0.174 | 0.846 | 0.0276 | 503.6 | 57.2 | 10.4 | 122.8 | 0.425 | 0.115 | 5 |
| Rock Maple Aves | 66 | 0.715 | 0.685 | 0.42 | 0.16 | 0.11 | 0.72 | 0.0085 | 76 | 18.5 | 4 | 392 | 0.5 | 0.12 | 5 |