

Ultra-high Stocking Density Grazing for Dairies



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“Mob” or Ultra-high stocking density grazing

- Short duration
- High intensity (high stocking density, up to 560,425 kg/ha)
- Small paddocks
- Long rest periods (up to 125 days)

Anecdotal information from beef producers in regions with climates much different from the Northeast

- Greater carrying capacity
- Improved animal production
- Improved soil quality
- Improved forage quality
- Minimal fixed cost investments (fencing, land, water)



Characterize management practices
and forage and soil quality on dairy
farms using self-described UHSD
grazing in PA and NY



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Case Study

- 4 Farms (3 in PA, 1 in NY)
- Farmers completed survey
- 1 sample pasture selected on each farm (of known size)
- Data collected each time the pasture was grazed from June to November 2012 and from April to June 2013
- At each farm visit - # of cows grazing, pre- and post- grazed forage height, canopy stratification, samples for forage quality analysis
- In May 2013 – soil samples from each pasture



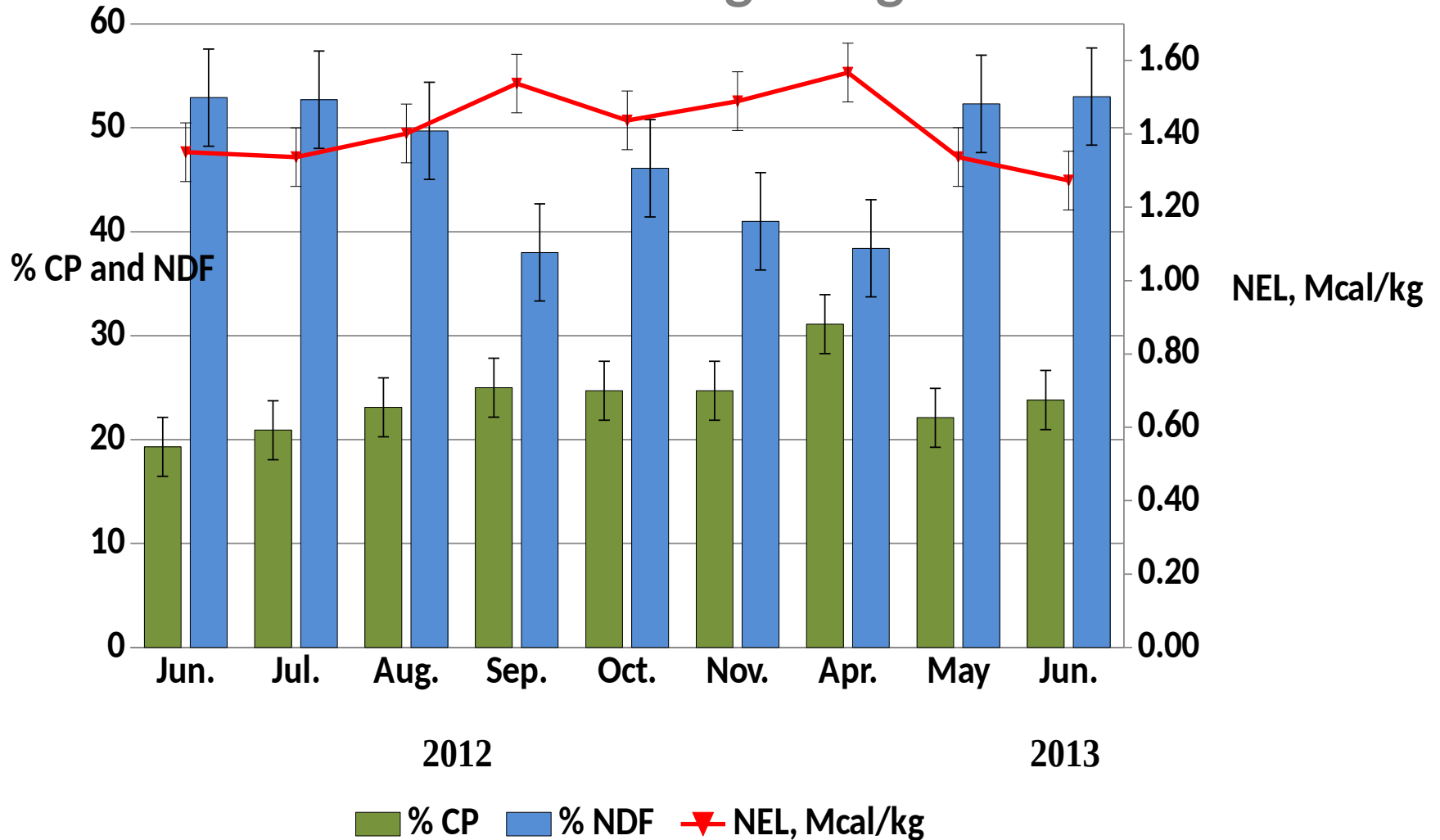
Description of dairy farms using self-described UHSD grazing in PA and NY

Item	Farm 1	Farm 2	Farm 3	Farm 4
Farm description				
Pasture, ha	251	97	105	81
# of milking cows	270	60	235	145
Milk yield/cow, kg/d	11.9	17.7	13.5	17.0
Grazing practices				
Grazing cycle, days	28 to 30	When rested	28 to 35	35
Forage remaining	30%	30-50%	30-40%	40%
Moves/day	1	2 to 5	2 to 3	2
Hours on pasture	20	20	20	20
Supplemental feeding				
Stored feeds, if any	Hay	Silage	Hay + Silage	Silage +Baleage
Purchased feeds	Salt and mineral	Molasses	Molasses	Molasses
Graze in winter?	Weather dependent	Until Dec.	No	No

Observed self-described UHSD grazing practices:

- Stocking density ranged from 49,421 to 377,912 kg/ha **Beef UHSD = up to 560,425 kg/ha**
- 30 to 49 days between grazing **Beef UHSD = 90 to 180 days** **Rotational = 21 day cycle**
- Plant height at grazing = 29 cm **Rotational = 15 to 20 cm**
- Forage utilization = 45% of total available **Beef UHSD = residual to be trampled** **Rotational = take half, leave half**
- Most of forage consumption was from upper canopy

Forage quality of pastures managed with self-described UHSD grazing



Soil parameters of pastures managed with self-described ultra-high stocking density grazing in 2013

Farm ¹	OM, %	pH	ppm (mg/kg)						
			P	K	Mg	Ca	Zn	Cu	S
1	4.1	6.5	65	276	305	1516	3.40	3.50	11.0
3	4.0	7.6	79	280	184	1869	4.30	4.50	12.3
4	3.2	7.0	93	511	277	1201	3.10	3.10	11.4

¹Soil samples were measured within the sample pasture at each farm. Soil samples were unavailable for Farm 2.

Soil organic matter values were as expected for pastures in the northeastern U.S., but did not exceed values typical for this region, despite claims that UHSD grazing contributes to the rapid accumulation of soil organic matter, within just a few years.

Results of an ultra-high stocking density grazing (UHSD) field day survey asking participants for their definition of UHSD.

Farmer response

Large number of animals on fenced small paddock grazing down tall 'stored' growing plants for short periods

A lot of cows on a small area for a short time

Cattle grazing headed grass on the verge of rank

Wait until grass is very tall, let cows eat the top 1/3 of plants and trample the rest of the plant to feed the soil

High density, short-duration grazing

Group of cows moving from pasture to pasture devouring grass/plants growing in the field

Grazing cows at >100,000 kg/ha

7+ cm regrowth with a herd of 200+ animals with frequent moves

Grazing at a height that is close to high quality dairy hay/haylage using very high stocking rates

Grazing grass past ideal maturity so there is lower quality but higher quantity

Grazing patterns to maximize pasture rotations and nutrition for well-balanced nutrition

Field day attended by 20 farmers on June 11, 2013.

Current UHSD grazing info refers to beef cattle grazing rangeland

- Soils, climate, and forages much different from PA and NY
- Forgiveness of systems – ADG vs. daily milk yield
- Mature forages could result in an overestimation of nutrient intake in grazing dairy systems
- Learning curve and adjustment to intensive management may result in reduced animal performance (15+ grazing experience on farms in case study)

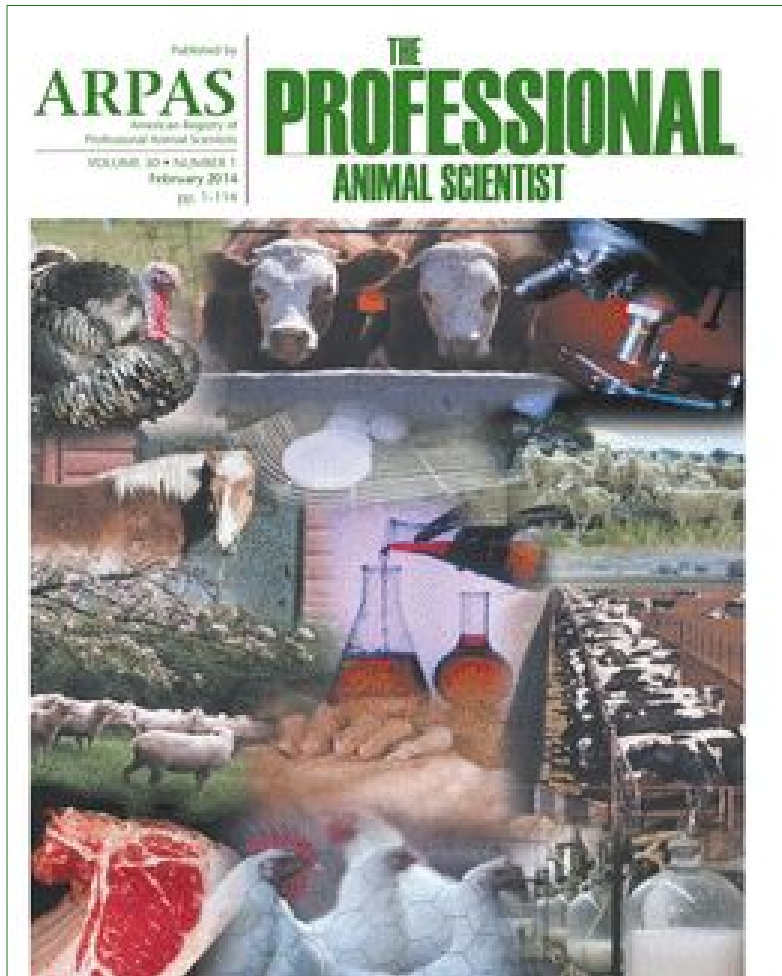


We observed that the grazing dairies in this study:

- Have taken a modified approach to current UHSD definitions
- Grazing slightly more mature forages compared RG
- Slightly longer rotations than RG



- Unlikely self-described UHSD grazing occurring on dairies in NY and PA is a superior grazing management technique compared to RG
- UHSD is a modification of rotational grazing that has been successful on these farms – all of who are long-time graziers with high levels of management
- Further research needed to examine effects of transitioning to UHSD



Case Study: Dairies Using Self-described Ultra-high Stocking Density Grazing in Pennsylvania and New York

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