

**UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE**

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| In re: |) | Docket No. AMS–TM–06–0198; |
| National Organic Program (NOP)— |) | TM–05–14 |
| Access to Pasture (Livestock) |) | RIN 0581–AC57 |
| Proposed Rule |) | 73 Fed. Reg. 63584 (October 24, 2008) |

**Comments/Suggestions Regarding the National Organic Program’s (NOP)
Access to Pasture (Livestock) Rule by
Select Milk Producers, Inc. And Continental Dairy Products, Inc.**

I. Introduction, Standing, and Summary of Position

These technical comments are being presented on behalf of Select Milk Producers, Inc. And Continental Dairy Products, Inc. who oppose adoption of the National Organic Program (NOP)—Access to Pasture (Livestock) rule while supporting some smaller aspects of the rule.¹ Separate comments regarding legal aspects of the rule are also submitted. Select Milk Producers, Inc. is a milk marketing cooperative with members located in West Texas, New Mexico, Oklahoma and Kansas. It markets organic milk of some of its members in those states and assists in the acquisition of organic milk for its customers here in Texas. Continental Dairy Products, Inc. Is a milk marketing cooperative with members located in Ohio, Michigan, and Indiana.

II. Technical Comments

¹National Organic Program (NOP)—Access to Pasture (Livestock) 73 Fed. Reg. 63584 (October 24, 2008) (Proposed Rule).

1. The language “denied pasture” carries a negative context and should be changed to incorporate the idea of “**safe shelter**” for animals not grazing. The use of positive language such as, producers “*may reduce or modify the time animals spend in **safe shelters** while grazing*” is preferable. The proposal itself states not to graze for reasons such as “inclement weather” and “health of the animal”, which implies the shelters are safe and healthy for animals. Also, the term “deny” suggests the cows have a *desire* to be somewhere and that their *desire* is being denied. It is overreaching and arrogant for the National Organic Standards Board (NOSB) to assume to know the emotional status of cows in the NOP. Anthropomorphism should not be an expressed part of the NOP standards.

2. The concept of a “sacrificial pasture” is absurd and does not comply with the basic ideals of good stewardship over the pasture, soil, and water. It also ignores the obvious situation where if the normally grazed pastures are not suitable and safe for animals than why would the “sacrificial pasture” be any different. The “sacrificial pasture” is likely to be in the same geographical location and is subject to the same adversity as the regular pastures, and thereby could too be rendered unsafe or unsuitable for animal use. Bad pasture management is equal to poor animal health and well being. Returning animals to their **safe shelter** for feeding and watering until grazing can resume is the best course of action for the animal, pasture, soil, and water.

3. The proposal for “year-round grazing” does not comply with the basic ideals of good stewardship over the land. Over grazing would be extremely damaging to the environment. This practice would also make it near impossible to cultivate nutritionally adequate crops required by lactating cows and potentially ruin pastures ideally suited for seasonal grazing. Proper use of **safe shelters** provides the best opportunity to work within the natural processes involved in the organic management of pasture, soil, and water.

As written the NOSB could inadvertently endanger NOP cows and the environment by promoting inadequate use, construction, and availability of safe shelters and by forcing the use of guidelines that promote unlimited and/or unmanaged grazing practices.

4. The requirement that no more than 70% of the animals dry matter “*demand*” come from feed (non-pasture) has several implications:

- a. Intake from feed was determined as; actual *dry matter fed* ÷ *dry matter demand* X 100.
- b. “*Dry matter demand*” was determined to be 3% of the animal’s live body weight. Ideal body weight was not defined in the proposal.
- c. Actual dry matter intake for most heifers and dry cows is already less than 70% of the proposed “dry matter demand” value.
 - i. For example, a 1350 lb heifer would have an assigned “dry matter demand” value of 40.5 lb/d. Realistically, she’s only going to eat about 25 lb/d of a fed ration which is 62% of the so-called “demand” value. A 1550 lb dry cow would consume between 62 and 65% of the “demand” value. No need to graze, theoretically.
- d. “*Dry matter demand*” defined as 3% of live weight creates a problem for milking cows. If a fixed value is used then the “demand” value needs to be moved to 3.5% of live body weight or the ideal body weight should be defined as 1800 lbs for a lactating cow (ideal live body weight was not defined by NOSB in this proposal).
- e. *The major conceptual flaw in the “demand” value is that it is a fixed proportion of the animals live weight and does not vary with actual milk production/potential by the animal.* The fixed “demand” value for a 1550 lb cow would only be 46.5 lbs of dry matter intake which corresponds to a max “*fed level*” of 32.6 lbs/hd. This proposed “70% maximum fed level” of dry matter would support about 45 lbs of milk production (2X milking) and probably less given heat and/or cold stress conditions. Coincidentally, this is the same level of milk production NOSB determined to be the national “average” for all organic cows.
- f. Good healthy cows producing in excess of 45 lbs of milk would be at risk of becoming emaciated and unhealthy because the nutrient density and balance in grazed crops would **not** meet the additional nutrient requirements for these cows.
- g. *To promote better health of cows and to comply with the basic ideals of good stewardship over animals the “dry matter demand” value should vary with estimated live body weight **and** potential milk production of the individual and/or group.*
- h. “*Dry matter demand*” as defined in this proposal is **not** equal to the dry matter requirement of the animal. Also, “*dry matter demand*” is **not** equal to *nutrient requirements* of the animal.

As written the NOSB proposal could unintentionally result in the malnourishment or even starvation of NOP cows by forcing over grazing, grazing during periods of nutrient depletion in pasture, inadequate “fed nutrient levels”, and by the use of inadequate “dry matter demand” values.

5. The definition of “dry matter” in this proposal was, odd. And possibly not measurable. I suggest adopting the AOAC definition and/or simply using “book values” rather than the somewhat vaguely defined version proposed by the NOSB.

Rationale:

The National Organic Standards Board’s (NOSB) proposed “dry matter demand value” defined as 3% of an animal’s live body weight grossly over simplifies dry matter intake requirements of dairy cows and would greatly increase the risk of malnourishing National Organic Program (NOP) cows. Particularly NOP cows in early and mid lactation. Estimation and regulation of dry matter intake (DMI) by lactating dairy cows is extremely complex and affected by many factors in addition to live body weight. Factors published include but are not limited to ration moisture, nutrient digestibility, interactions between nutrients and physio-chemical processes within the gut, feed availability, dietary forage and concentrate ratios, cow behavior, weather, pasture quality and type, and perhaps most importantly stage of lactation combined with level of milk production.

Estimating DMI simply as a fixed percentage of live body weight as proposed by the NOSB serves to grossly underestimate nutrient intake required by cows at different stages of production. Energy intake regulation theory suggests cows must be allowed to consume higher levels of energy (i.e. dry matter) as their production levels increase. Limiting energy and/or DMI would cause cows to become emaciated and unhealthy. Starving cows into low production is not consistent with the ideals of good stewardship over animals. Policies that intentionally or unintentionally impose restrictions on nutrient intake by NOP cows should be avoided.

Research reviewed by the National Research Council relied on empirical evidence published over many years involving thousands of lactating cows generating tens of thousands of data points and provided the conceptual framework of energy intake regulation theory (Baile and Forbes, 1975; Conrad et al., 1964, Mertens, 1987, NRC, 1989, NRC, 2001). The long publication history showed cows consume feed to meet energy demands, meaning DMI is driven by milk production (NRC,

2001). Equations describing DMI have evolved over time culminating in the following and most recent equation published by the NRC (2001):

$$\text{DMI (kg/d)} = (0.372 \times \text{FCM} + .0968 \times \text{BW}^{0.75}) \times (1 - e^{(-0.192 \times (\text{WOL} + 3.67))})$$

Where FCM = 4 percent fat corrected milk (kg/d), BW = body weight (kg/d), and WOL = week of lactation. The term $(1 - e^{(-0.192 \times (\text{WOL} + 3.67))})$ adjusts for depressed DMI during early lactation. Other equations have been derived to adjust DMI for cows outside their thermo-neutral zone due to heat or cold stress.

Other leading models such as the Dalex model, Cornell-Pen-Minor (CPM) model, and the Cornell Net Carbohydrate and Protein System (CNCPS) model use similar but proprietary equations to estimate DMI. For each model proper estimations of DMI require inputs for live body weight, target weight gain, stage of lactation, and level of milk production. Ignoring these inputs under-specifies the estimates for DMI as well as nutrient intake thereby negatively affecting the performance, health, and well being of the animal.

Table 1 shows DMI levels proposed by the NOSB compared with those estimated by the NRC (2001) for cows at various levels of milk production. “Dry matter demand” values proposed by the NOSB caps maximum DMI for 1550 lb cow at 46.5 lbs/hd/d (i.e. 3% of live body weight). Lactating cows producing in excess of 50 lbs/d of milk would begin losing body weight compared with cows consuming their required DMI level of 47.7 lbs/d as determined by the NRC (2001). As cows reach higher production levels the gap between required and NOSB imposed DMI widens to a huge margin. The deficit grows even more when imposing the NOSB rule that “fed levels of dry matter” must not exceed 70% of the “dry matter demand value”.

Such restrictions on DMI would force NOP cows making 75 lbs of milk to somehow find an additional 24 lbs of dry matter via grazing. Even with high quality abundant pasture two problems arise; 1) the rate at which cows graze would likely limit intake to only 20 lbs of additional dry matter and 2) a grass or grass/legume mixed pasture would typically contain 25 to 30% less energy per pound of dry matter than a properly balanced milking ration. To consume equivalent calories from pasture the NOP cows would have to actually consume about 33 additional lbs of dry matter or lose about 2 lbs of body weight per day. To expect such high levels of consumption by

grazing cows is unrealistic and represents a large oversight by the NOSB.

Table 2 illustrates expected losses in body weight and condition of NOP cows fed dry matter levels proposed by the NOSB compared with levels actually required by cows across various levels of milk production. Estimates show (Table 2) cows begin to lose body weight as milk production increases to 50 lbs/d and above while DMI is restricted to 3% of body weight as proposed by the NOSB. Cows producing just 75 lbs of milk would lose an estimated 2 lbs of body weight per day which corresponds to a loss of around one body condition score (BCS) every 87 days. It is generally considered unhealthy for cows to lose more than one BCS during their entire 300 to 400 day lactation cycle. Here again, imposing the “70% fed ration” rule would only hasten the loss of body weight and condition of NOP cows.

The NOSB’s proposed rule using “dry matter demand” to estimate DMI and limiting “fed ration” intake to “70% of dry matter demand” should be rejected. “Dry matter demand” as defined by the NOSB grossly underestimates actual DMI required by cows in early and mid lactation. The use of “dry matter demand” seems to be a concept unique to the NOSB, does not appear to be supported by the last 23 years of scientific research (NRC, 1978-2001), is disconnected from actual physiological requirements for cows, and if imposed would jeopardize the performance, health, and well being of NOP cows. Similarly, the “fed ration” rule that limits DMI to 70% of “dry matter demand” serves to widen the gap between imposed DMI levels and actual DMI levels required by lactating NOP cows. Both rules proposed by the NOSB jeopardize the health and well being of NOP cows by imposing excessive restrictions on nutrient intake.

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Table 1. Dry matter intake by cows as determined by NOSB compared with NRC, 2001 across several levels of milk production.¹

| Milk production, lbs/d | Dry matter intake, lb/d | | DMI difference, lb/d ⁴ |
|------------------------|-------------------------|------------------------|-----------------------------------|
| | NOSB-DMD ² | NRC, 2001 ³ | |
| 40 | 46.5 | 44.0 | 2.5 |
| 45 | 46.5 | 45.9 | 0.6 |
| 50 | 46.5 | 47.7 | -1.2 |
| 55 | 46.5 | 49.6 | -3.1 |
| 60 | 46.5 | 51.4 | -4.9 |
| 65 | 46.5 | 53.3 | -6.8 |
| 70 | 46.5 | 55.2 | -8.7 |
| 75 | 46.5 | 57.0 | -10.5 |
| 80 | 46.5 | 58.9 | -12.4 |
| 85 | 46.5 | 60.7 | -14.2 |
| 90 | 46.5 | 62.6 | -16.1 |
| 95 | 46.5 | 64.5 | -18.0 |
| 100 | 46.5 | 66.3 | -19.8 |

¹Calculations were based on live body weight (LBW) = 1550 lbs.

²National Organic Standards Board's maximum "dry matter demand (NOSB-DMD)" = .03 x LBW.

³Calculated using NRC, 2001: DMI (kg/d) = (0.372 X FCM + .0968 X BW^{0.75}), except the term "week of lactation (wol)" was excluded for simplicity.

⁴Shows the difference in dry matter intake determined by subtracting NOSB values from NRC values. The deficit is much larger if the NOSB recommendation for max allowable "fed ration" dry matter is capped at 70% of the proposed "dry matter demand" value.

Table 2. Expected changes in body weight and condition of cows following dry matter intake levels proposed by NOSB compared with NRC (2001) suggested intake levels.

| Milk production, lbs/d | Difference in Intake ¹ | | Weight gain/loss, lb/d ² | Days to change 1 BCS ³ |
|------------------------|-----------------------------------|-------------|-------------------------------------|-----------------------------------|
| | DMI, lb/d | NEI, Mcal/d | | |
| 40 | 2.5 | 1.87 | 0.47 | 367 |
| 45 | 0.6 | 0.48 | 0.12 | 1439 |
| 50 | -1.2 | -0.92 | -0.23 | -750 |
| 55 | -3.1 | -2.31 | -0.58 | -298 |
| 60 | -4.9 | -3.71 | -0.93 | -186 |
| 65 | -6.8 | -5.10 | -1.28 | -135 |
| 70 | -8.7 | -6.50 | -1.62 | -106 |
| 75 | -10.5 | -7.89 | -1.97 | -87 |
| 80 | -12.4 | -9.29 | -2.32 | -74 |
| 85 | -14.2 | -10.68 | -2.67 | -65 |
| 90 | -16.1 | -12.08 | -3.02 | -57 |
| 95 | -18.0 | -13.47 | -3.37 | -51 |
| 100 | -19.8 | -14.87 | -3.72 | -46 |

¹determined by subtracting the NOSB proposed intake from required intake calculated using NRC, 2001.

²Negative values represent a loss of body weight. Dry matter was given a value of 0.75 Mcal/lb of NEI.

³Negative values represent days to lose 1 body condition score (BCS).