Using Dairy Manure to Fertilize of Forage Stands

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Why consider dairy manure topdressing on forages?

- Reduce amount of manure needed to be applied in spring & fall
- Reduce purchased fertilizer cost
- Spread out work load related to manure application
- An option to apply manure on more acres on farm
- An environmental option

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Concerns with manure application on forages

- Pathogen load
- Weed seed
- Field compaction (related to application equipment used, wheel traffic)
- Luxury consumption of K

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Let's address the concerns

- Pathogen load
  - From literature review
  - Surface applied, exposed to sunlight, drying out will reduce concern
  - Harvested as haylage will reduce concern
  - Top dressing pasture or feeding hay to young calves is not recommended
  - Little concern of increase in ash content of forage

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Weed seed

- Thinning stands will allow weed seed to germinate
  If you have a good grass stand should prevent weed seed germination
- Older legume/grass stand may have weeds filling in open areas
- Older stands may consider rotating crops next year or so

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Compaction

- Consider hose drag system versus tankers
  Don't apply on wet fields
- Consider minimal disturbance or dribble bar
- Apply ASAPafter harvest to reduce potential damage to regrowth

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Luxury consumption of K

Grasses will luxury consume K nutrient to a greater degree than legumes
Understand where will this forage be used (not problem in milking herd diet)
If for transition diets delay harvest

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Let's review nutrient removal of forage

Based on per ton of dry matter (DM)
Nitrogen (N) 40 pounds (limited legumes)
Phosphorus (P) 15 pounds
Potassium (K) 55 pounds
Calcium (Ca) 30 pounds
Magnesium (Mg) 6 pounds
Sulfur (S) 6 pounds

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A 4 ton DM grass forage yield will require

160 pounds nitrogen
60 pounds P
220 pounds K
120 pounds Ca
24 pounds Mg
24 pounds S

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Apply 5,000 gallons dairy manure x 3 applications? Nutrients from "Fast Facts"

N = 105 pounds
P = 90 pounds
K = 255 pounds
Ca = 180 pounds
Mg = 90 pounds
S = 36 pounds

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Compare removal to added nutrients

Nutrients remove 4 ton DM

160 pounds nitrogen
60 pounds P
220 pounds K
120 pounds Ca
24 pounds Mg
24 pounds S

Nutrients added 15,000 gallons manure

N = 105 pounds
P = 90 pounds
K = 255 pounds
Ca = 180 pounds
Mg = 90 pounds
S = 36 pounds

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What is value compared to commercial fertilizer?

1,000 gallons of liquid dairy manure would replace $15.00 of commercial fertilizer containing N-P-K plus secondary and micronutrients

15,000 gallons per acre would be a value of $225.00 per acre

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What are the advantages of using manure?

Reduces an expense of purchasing commercial fertilizer
Some of expense may be off set with application cost
Spreads out manure application workload
Manure provides majority of nutrients removed including secondary and micronutrients
Limited concerns with pathogen load
Limited concerns with increase in ash

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Summary

Dairy manure on grassy forages is an option to add removed nutrients
It will provide opportunity to spread out manure application workload from spring and fall
Need to use caution if soils are wet to avoid compaction or use methods to reduce compaction concerns
Apply ASAP after harvest to prevent regrowth injury
Limited concerns with pathogens and ash when harvested as haylage
Luxury consumption of K not a concern in milking cow diet
Reduce fertilizer inputs, but there is an application cost

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Questions???

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Thank You for attending

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