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Poultry Litter Storage BMPs to Protect Water Quality

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Kansas Department of Agriculture

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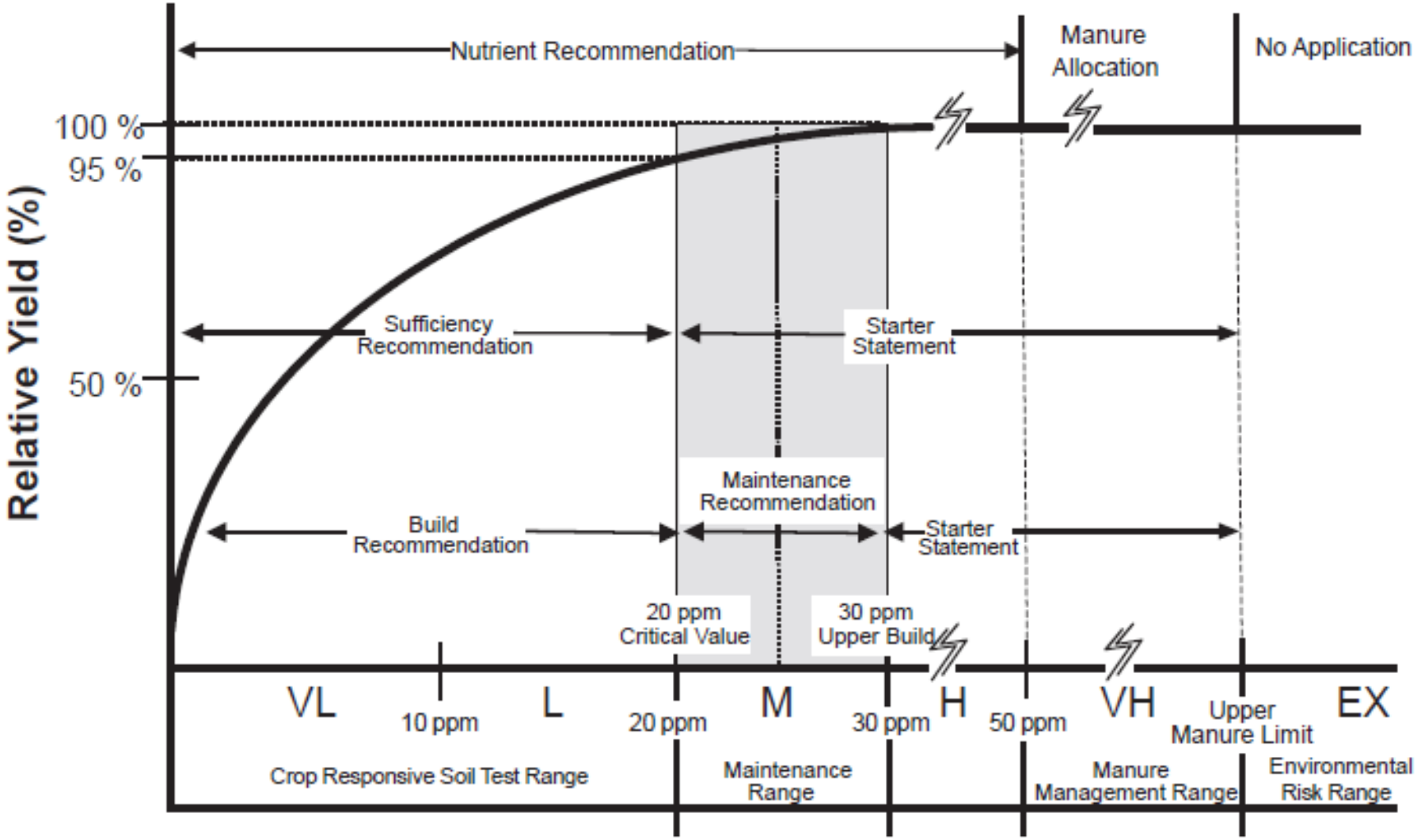
What can WE do ??

Not manure disposal but **Fertilizer Resource**

Kansas P Management Model



Bray 1 or Mehlich 3 Soil Test (ppm)

Improved Storage Site Demonstration Project

- 12 sites established since 2013
  - Site evaluation
  - 50% cost share on pad and access improvements
  - Agronomic commitments
    - Soil testing
    - Maintain soil P levels below 50 ppm (Bray or M3)
    - Apply based on crop P requirements
- 2 additional sites established in 2016 without cost share.

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Poultry Litter Storage Site Evaluation Worksheet

Name: Any producer
Date:
Address:
Permit:
City/State/Zip:
Site No.:
Location S-T-R:
Inspector:
Title:
County CRAWFORD Co. or

Additional Comments:

Section A. Surface Water Protection

		Factor	Comments
1. Capacity (tons)		7	490 tons
< 50	1		
50 - 99	3		
100 - 299	5		
300 - 499	7		
500 - 699	8		
700 - 999	9		
2. Site Slope		1	0.9 %
< 1.0%	1		
1.0 - 1.9%	3		
2.0 - 2.9%	5		
3.0 - 3.9%	7		
4.0 - 4.9%	9		
3. Slope to occasional or frequent flooding soils.		5	2.2222 %
< 1.0%	1		
1.0 - 1.9%	3		
2.0 - 2.9%	5		
3.0 - 3.9%	7		
4.0 - 4.9%	9		
>= 5.0%	10		
4. Distance to occasional or frequent flooding soils.		9	450 feet
> 5280'	1		
4000 - 5279'	2		
2640 - 3999'	4		
1000 - 2639'	5		
500 - 999'	7		
100 - 499'	9		
< 100'	10		
5. Storage period (months per year)		6	6 months per year
<1 to 1 = 1	>1 to 2 = 2		
>2 to 3 = 3	>3 to 4 = 4		
>4 to 5 = 5	>5 to 6 = 6		
> 6 months per year =	9		
6. Soils type between sites and flooding soils (se		5	Silt
Clay	9		
Silty Clay	7		
Silt	5		
Silty Sand	3		
Sand	1		
7. Buffer type		1	Dense cover of grass
Dense cover of grass	1		
Grass with woody plants	4		

Section B. Groundwater Protection

		Factor	Comments
1. Capacity (tons)		7	490 Tons
< 50	1		
50 - 99	3		
100 - 299	5		
300 - 499	7		
500 - 699	8		
700 - 999	9		
2. Annual Rainfall		10	43.41 inches
< 20"	1		
20 - 25"	3		
25 - 30"	5		
30 - 35"	7		
35 - 40"	9		
> 40"	10		
3. Depth to groundwater		1	150 feet
> =150'	1		
25 - 149'	3		
10 - 24.9'	6		
5 - 9.9'	8		
< 5'	10		
4. Soils receiving runoff		5	Silt
Clay	1		
Silty Clay	3		
Silt	5		
Silty Sand	7		
Sand	9		
5. Distance to nearest well (water, gas, o potentially impacted (down gradient)		1	600 feet
> 600'	1		
200 - 599	3		
100 - 199'	5		
50 - 99'	7		
0 - 49'	9		
0	10		
Section C Total:		24	25 or less is desired

Section C. Additional information to consider

	Yes / No
1. Is there a perennial, intermittent or ephemeral stream through the litter storage site.	No
2. Is there a non-family residence within 1320 ft ?	No
3. Is site slope 5.0% or greater?	no

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Watershed Restoration and Protection Strategy (WRAPS) DEMONSTRATION PROJECT
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TEMPORARY POULTRY LITTER STORAGE AREA SPECIFICATIONS

The goal of this project is to provide environmentally friendly all-weather site(s) for temporary poultry litter storage that minimizes nutrient runoff potential to any Waters of Kansas or sensitive areas. In many cases it may include, an adequate service entrance and road to the storage site(s) which will allow litter truck unloading on desirable sites even during inclement weather. An additional goal of the project is to educate landowners and producers on proper poultry litter storage and application techniques.

In order to receive costshare through this program, landowners will need to follow the below listed requirements:

- Landowner will submit annual soil sample of application fields to the WRAPS coordinator (0 to 6 inch depth) for the expected life of the Temporary Poultry Litter Storage Site (10 years).
  - If the annual soil sample is below 50 parts per million (ppm) Total Phosphorus, the landowner can continue to apply poultry litter at a rate that maintains a concentration that is equal to or less than 50 ppm Total Phosphorus.
  - If the annual soil sample is above 50 ppm Total Phosphorus, the landowner will need to complete an NRCS 590 Nutrient Management Plan.
- The landowner will incorporate the litter into the soil within a 24 hr. (weather permitting).
- Poultry litter should not be applied closer than 100 feet to any down-gradient surface water, open tile line intake structure, sinkhole, agricultural well head, or other conduits to surface or ground water. A 35-foot wide vegetative buffer that does not receive any nutrient applications can be substituted for the 100 ft. setback.

Landowner signature _____Date_____

WRAPS Coordinator signature _____Date_____

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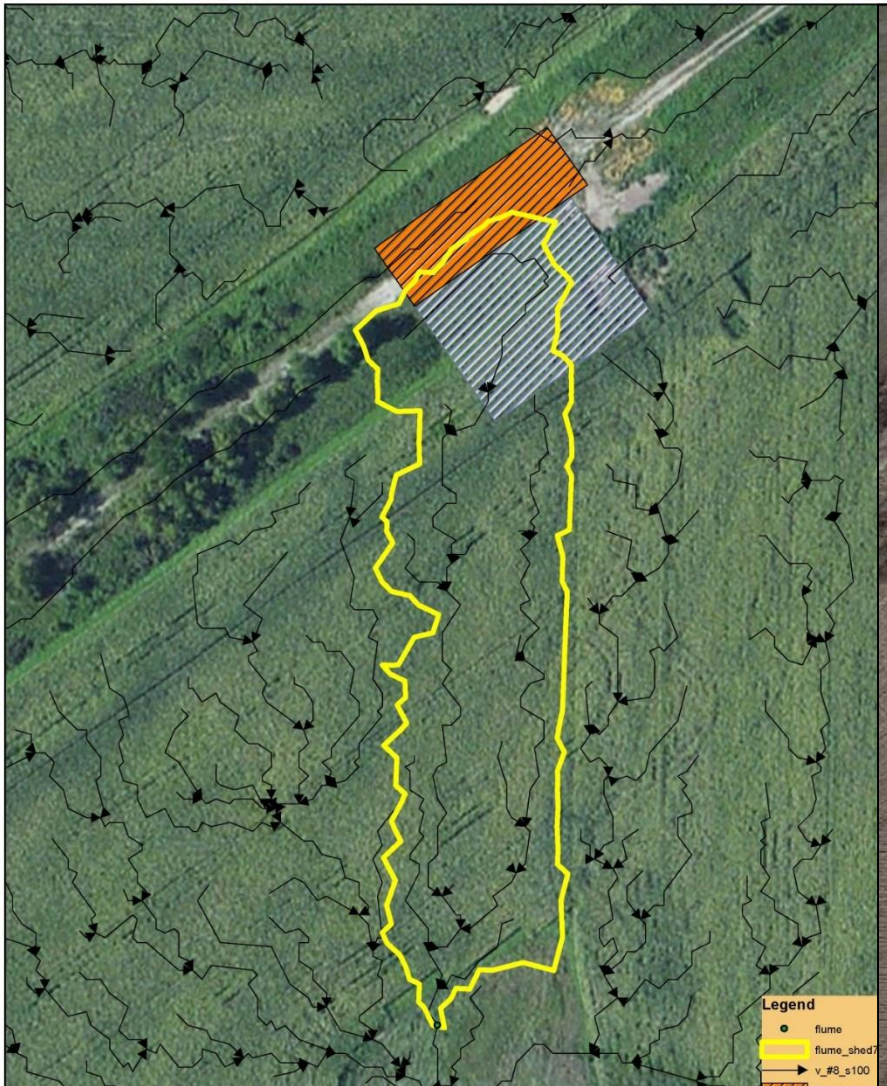
Improved Storage Sites



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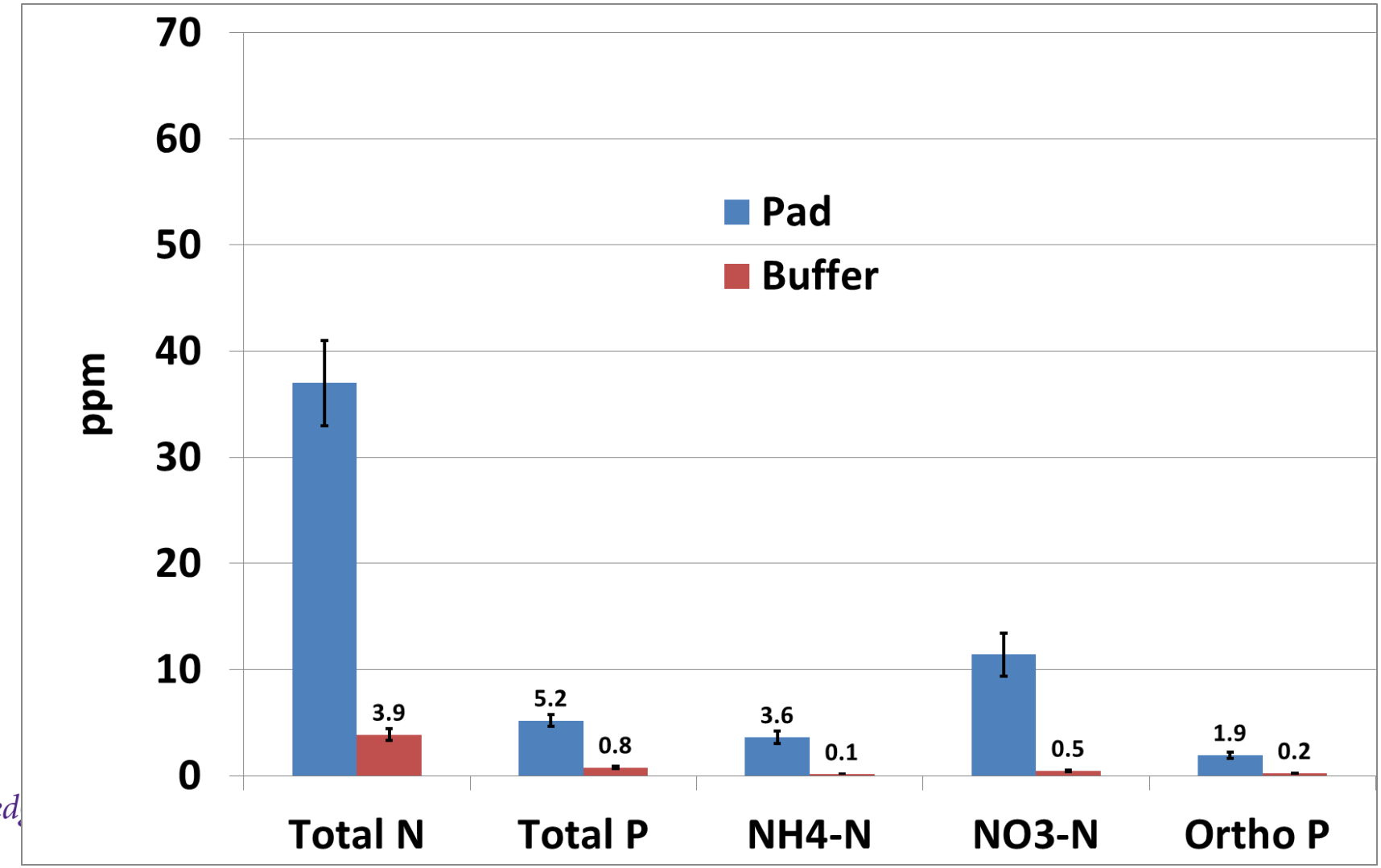
July – Sept 2015: Flow Weighted Means (Litter Present)



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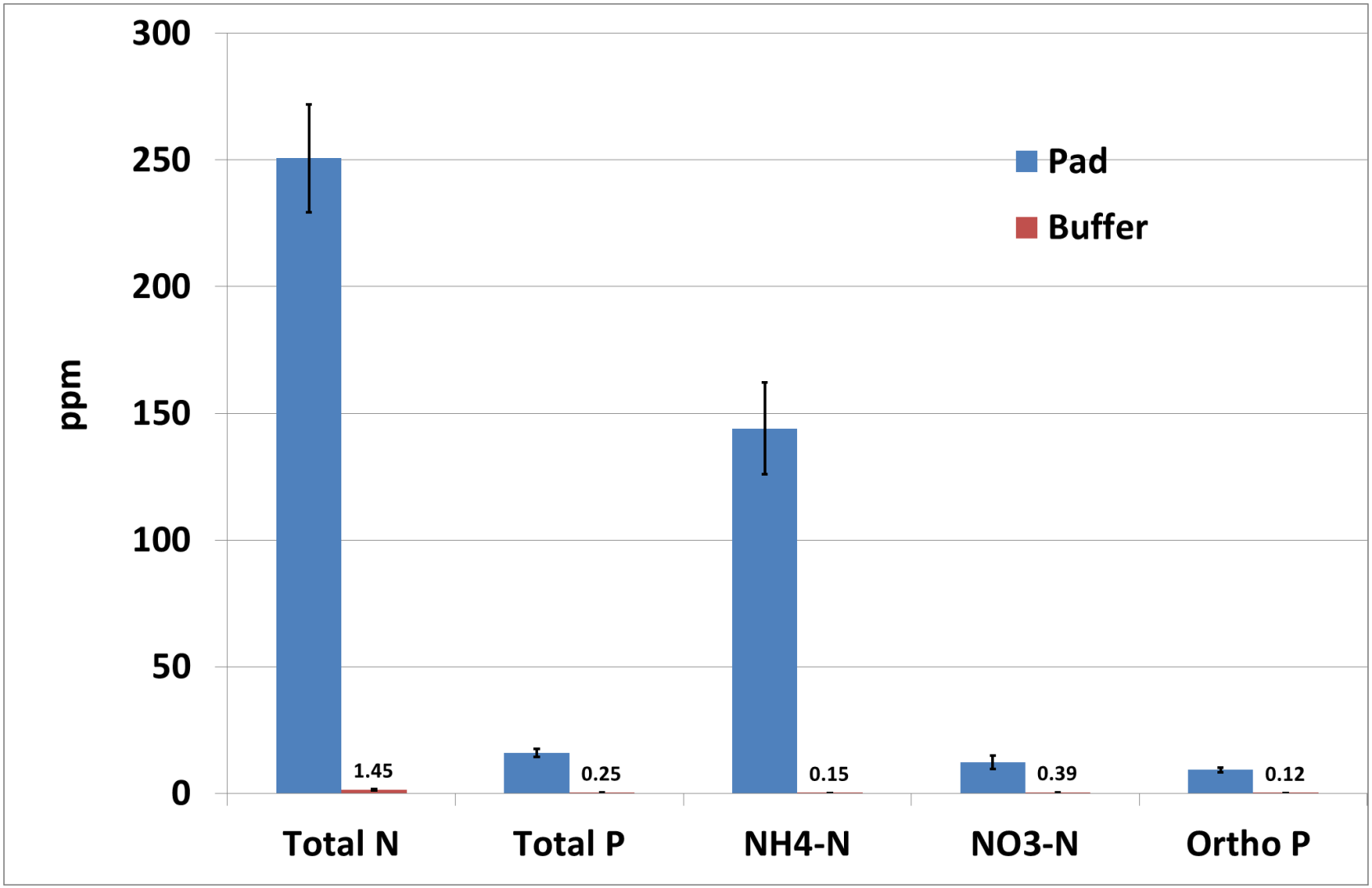
Oct - Dec 2015: Flow Weighted Means (Litter Present)



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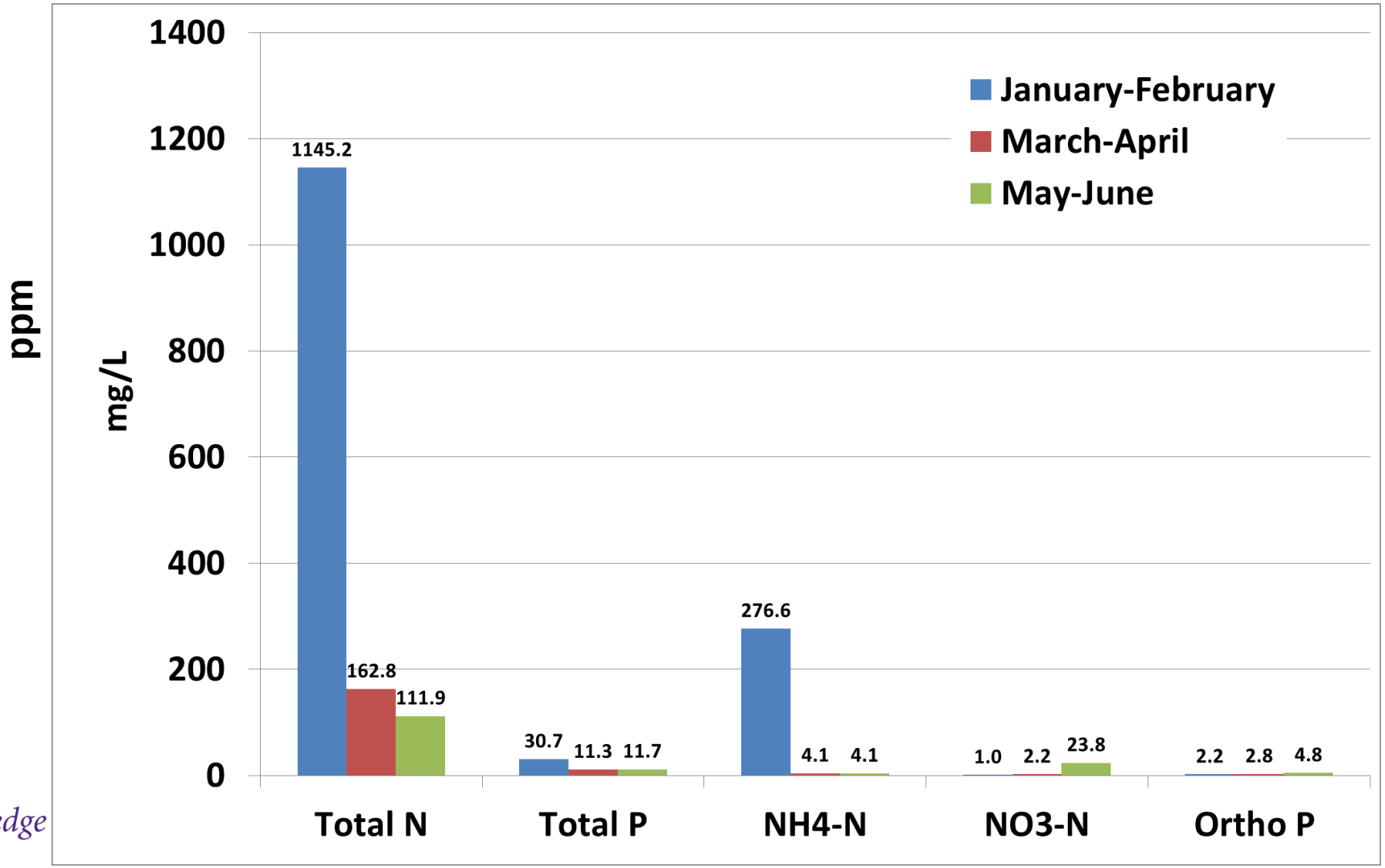
Storage Pad – 2016: Flow Weighted Means



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Containment Options for Short-term In-field Storage

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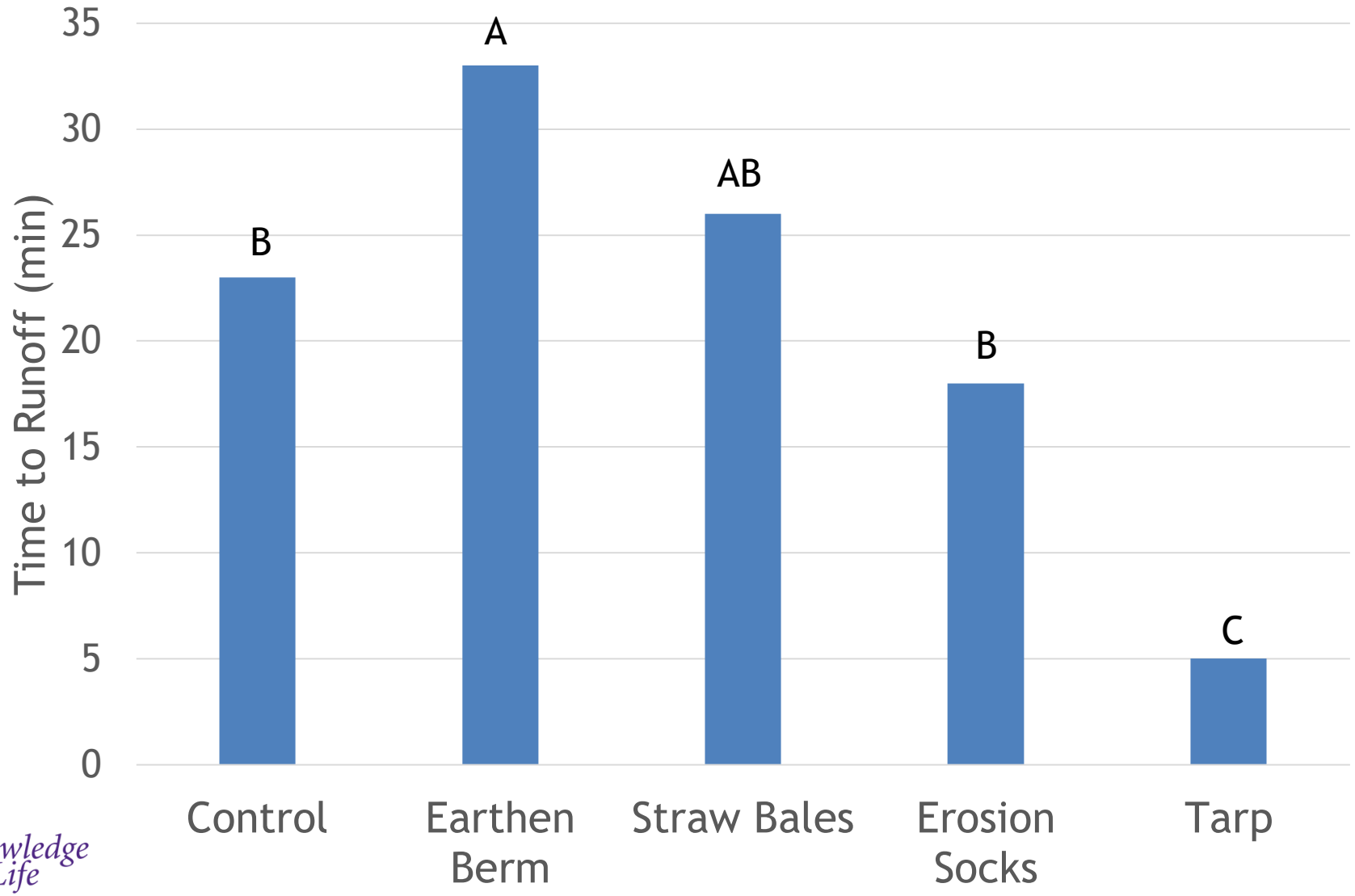
In-field Storage BMP Evaluation



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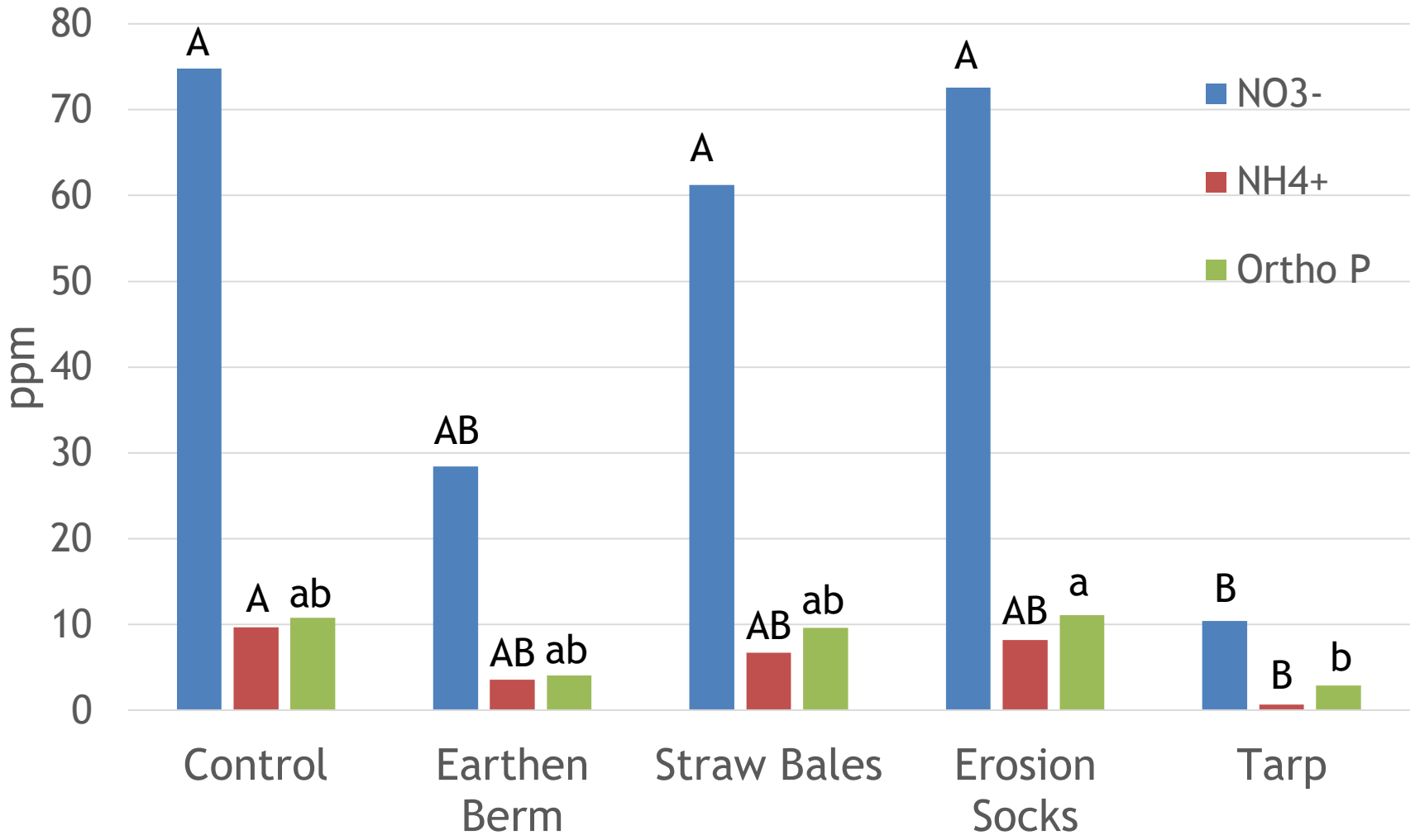
In-field Storage BMP Evaluation



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Poultry Litter Storage

- Properly locating storage locations is key to protecting water quality.
- Cropland buffer effective at capturing nutrients
- Next Steps
  - Evaluating site with grassland/permanent pasture buffer
  - Continued producer education

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