



# Current Poultry Trends on Delmarva

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UNIVERSITY OF  
MARYLAND  
EXTENSION

# Bird Numbers

	1 year change	10 year change	20 year change
<b>567 million chickens</b>	-0.5%	0.7%	-3.4%
<b>4.2 billion pounds of chickens</b>	-0.4%	19%	35%
<b>4,901 chicken houses</b>	-2.7%	8.3%	-13.9%
<b>Housing capacity of 134 million chickens</b>	-9.8%	13.2%	7.8%
<b>1,361 chicken growers</b>	-1.2%	-13.3%	-45.8%

# Bird Efficiency

Year	Market Age <i>average days</i>	Market Weight <i>pounds, liveweight</i>	Feed to Meat Gain <i>pounds of feed to one pound of broiler, liveweight</i>	Mortality <i>percent</i>
1925	112	2.5	4.7	18
2000	47	5.03	1.95	5
2005	48	5.37	1.95	4
2006	48	5.47	1.96	5
2007	48	5.51	1.95	4.5
2008	48	5.58	1.93	4.3
2009	47	5.59	1.92	4.1
2010	47	5.7	1.92	4
2011	47	5.8	1.92	3.9
2012	47	5.85	1.9	3.7
2013	47	5.92	1.88	3.7
2014	47	6.01	1.89	4.3
2015	48	6.12	1.89	4.8
2016	47	6.16	1.86	4.5
2017	47	6.20	1.83	4.5
2018	47	6.26	1.82	5.0
2019	47	6.32	1.80	5.0
2020	47	6.41	1.79	5.0
2021	47	6.46	1.79	5.3

# Older Farms

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# New Farm Advantages

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# New Farm Advantages- Manure Sheds

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# New Farm Advantages-Heavy Use Area Pads

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# New Farm Advantages-Heavy Use Area Pads





# New Farm Advantages-Heavy Use Area Pads

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# New Farm Advantages-Heavy Use Area Pads



# Nutrient Management

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All poultry farms operate under a nutrient management plan



# Nutrient Management

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# Nutrient Management-AIR



**2021** Nutrient Management Annual Implementation Report (AIR) for CAFO and MAFO Operations  
Due March 1, 2022



Maryland Department of the Environment

For Field Office Use

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For HQ Use

1. County \_\_\_\_\_

2. MDA Op Number \_\_\_\_\_ MDE AI Number: \_\_\_\_\_

3. Operator/Owner Legal Name Last \_\_\_\_\_ Suffix \_\_\_\_\_  
First \_\_\_\_\_ Middle Int. \_\_\_\_\_

4. Farm/Operation Name \_\_\_\_\_

5. Mailing Address \_\_\_\_\_

6. City \_\_\_\_\_ 7. State \_\_\_\_\_ 8. Zip \_\_\_\_\_

9. E-Mail address \_\_\_\_\_

10. Telephone Number(s) Office \_\_\_\_\_ Home \_\_\_\_\_  
Cell \_\_\_\_\_

11. \_\_\_\_\_ Total Farmed Acres including Pastures

12. Operation Type (Check all that apply)

- Crop Production
- Hay / Pasture
- Nursery/Greenhouse
- Organic
- Animal
- No-Land (0 Managed Acres)
- Other \_\_\_\_\_

13. Account ID updates - List changes to Account ID's, and check if added or deleted from operation since your previous AIR report. Attach additional pages if needed.  
 No change of account ID(s)

**Nutrient Management Consultant and Plan Information**

15. Name of Nutrient Management Plan Writer:  
\_\_\_\_\_

16. Certificate # \_\_\_\_\_

17. License # \_\_\_\_\_

18. Date NM Plan Written: \_\_\_\_/\_\_\_\_/\_\_\_\_

19. Date NM Plan Expires: \_\_\_\_/\_\_\_\_/\_\_\_\_

20. \_\_\_\_\_ Total Acres of animal manure recommended for land application by the nutrient management plan.

**Poultry**

26. Poultry (in 1,000s per flock)  
\_\_\_\_\_ Broilers/Roasters \_\_\_\_\_ Pullets  
\_\_\_\_\_ Layers \_\_\_\_\_ Turkeys

27. \_\_\_\_\_ Number of Flocks per year

28. Poultry Integrator:  
\_\_\_\_\_

29. \_\_\_\_\_ Number of Poultry Houses  
30. \_\_\_\_\_ Total sq.ft. of all poultry houses

**Poultry Litter**

31. \_\_\_\_\_ Tons Poultry litter removed during crust-outs in 2021.  Check if Windrowed

32. \_\_\_\_\_ Tons Poultry litter removed during partial or total cleanout(s) in 2021.

33. \_\_\_\_\_ Tons of On-Farm Collected poultry litter that remained stored or stockpiled from 2020.  
\_\_\_\_\_ Tons \_\_\_\_\_ Acres

34. On-Farm Collected poultry litter that was land applied to your farm operation in 2021.  
\_\_\_\_\_ Tons \_\_\_\_\_ Acres

35. Tons of imported poultry litter that remained stored or stockpiled from 2020 and was applied in 2021.  
\_\_\_\_\_ Tons \_\_\_\_\_ Acres

36. \_\_\_\_\_ Acres Poultry litter incorporated within 48 hrs with vertical tillage equipment

\_\_\_\_\_ Cu. Ft \_\_\_\_\_ Gals \_\_\_\_\_ Tons

43. Yes  No  Temporary stockpiling of manure/organics?

**Manure/Organics other than poultry litter**

44. \_\_\_\_\_ Acres Liquid manure applied with injector or other sub-surface applicator.

45. \_\_\_\_\_ Acres Liquid manure incorporated within 48 hrs with vertical tillage equipment (Ex: "Turbo Till").

46. \_\_\_\_\_ Acres Manure application applied at the crops Phosphorus Removal Rate.

47. \_\_\_\_\_ Tons Total On-Farm Collected manure/organics  
\_\_\_\_\_ Gals

48. \_\_\_\_\_ Tons Total On-Farm Collected manure/organics that remained stored or stockpiled from 2020.  
\_\_\_\_\_ Gals

49. On Farm Collected manure/organics that was land applied to your farm operation in 2021.

Type of Manure/Organics	Amount	Land Application
<input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Swine	Tons	Acres
<input type="checkbox"/> Horse <input type="checkbox"/> Sheep <input type="checkbox"/> Other: _____	Gals.	Acres
<input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Swine	Tons	Acres
<input type="checkbox"/> Horse <input type="checkbox"/> Sheep <input type="checkbox"/> Other: _____	Gals.	Acres
<input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Swine	Tons	Acres
<input type="checkbox"/> Horse <input type="checkbox"/> Sheep <input type="checkbox"/> Other: _____	Gals.	Acres

50. Total imported manure/organics that remained stored or stockpiled from 2020 and was applied in 2021.

# Nutrient Management

**52. Exported Manure, Food Waste or Other Organics that left your farm operation.** Be sure to note **COUNTY** and **STATE** to which material was exported. Use additional sheets if necessary.

Check if None

Name	Address - Location where Manure/Organics were Exported to?	Check Type of Exported Manure/Organics	Amount Tons/Gals	Sent To:
Name of person: Name of Farm/Entity:	Street: City: County: State, Zip	<input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Poultry <input type="checkbox"/> Swine <input type="checkbox"/> Horse <input type="checkbox"/> Sheep <input type="checkbox"/> Compost <input type="checkbox"/> Poultry Processing DAF <input type="checkbox"/> Food Residuals <input type="checkbox"/> Other Manure or Organics:	Gals. Tons	<input type="checkbox"/> Alternative Use Facility <input type="checkbox"/> Manure/Organics Broker <input type="checkbox"/> Other Farm Operation
Name of person: Name of Farm/Entity:	Street: City: County: State, Zip	<input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Poultry <input type="checkbox"/> Swine <input type="checkbox"/> Horse <input type="checkbox"/> Sheep <input type="checkbox"/> Compost <input type="checkbox"/> Poultry Processing DAF <input type="checkbox"/> Food Residuals <input type="checkbox"/> Other Manure or Organics:	Gals. Tons	<input type="checkbox"/> Alternative Use Facility <input type="checkbox"/> Manure/Organics Broker <input type="checkbox"/> Other Farm Operation
Name of person: Name of Farm/Entity:	Street: City: County: State, Zip	<input type="checkbox"/> Dairy <input type="checkbox"/> Beef <input type="checkbox"/> Poultry <input type="checkbox"/> Swine <input type="checkbox"/> Horse <input type="checkbox"/> Sheep <input type="checkbox"/> Compost <input type="checkbox"/> Poultry Processing DAF <input type="checkbox"/> Food Residuals <input type="checkbox"/> Other Manure or Organics:	Gals. Tons	<input type="checkbox"/> Alternative Use Facility <input type="checkbox"/> Manure/Organics Broker <input type="checkbox"/> Other Farm Operation

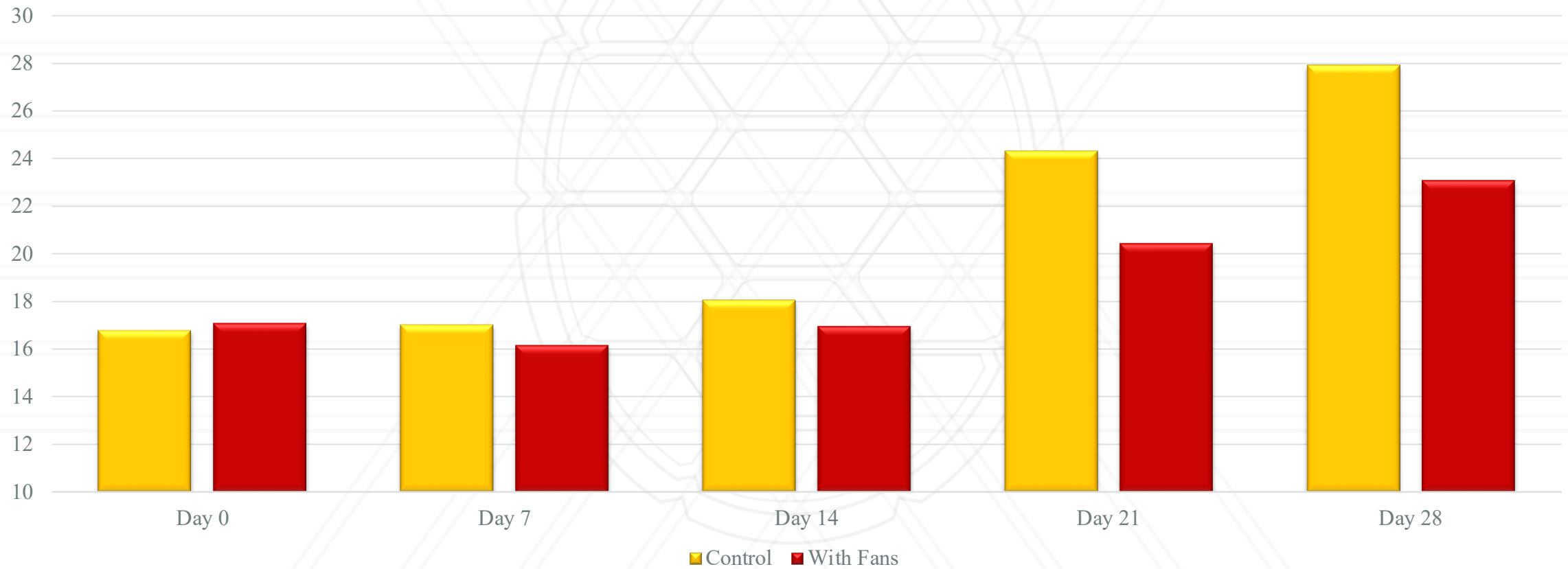
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# Circulation/Stir Fans



# Circulation/Stir Fans

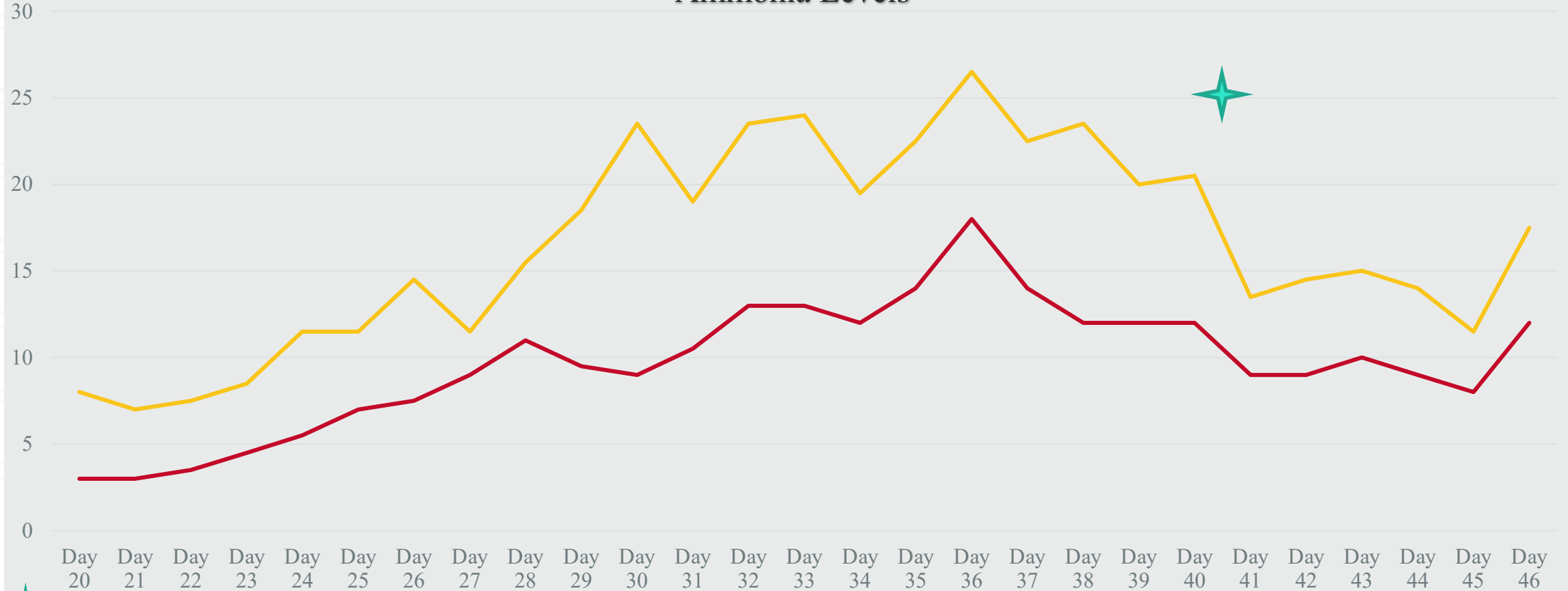
Litter Moisture (Nov-Dec 2021)





# Circulation/Stir Fans

Ammonia Levels

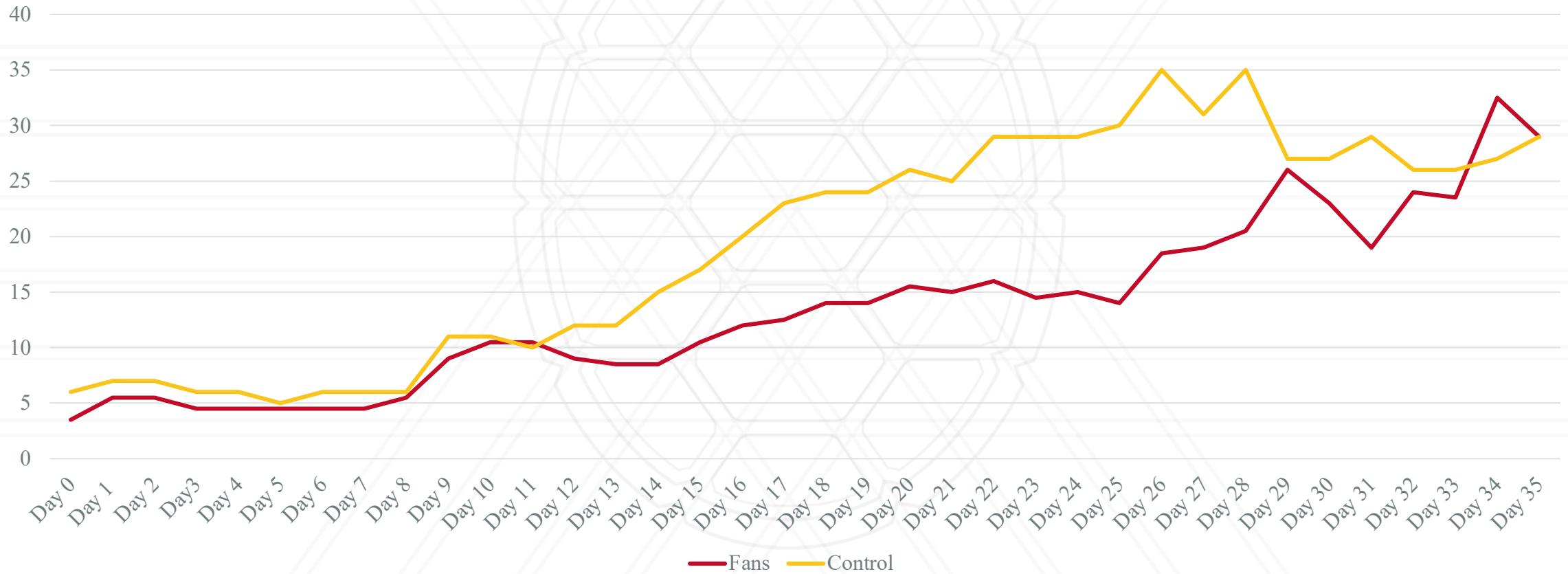


 Tunnel Ventilation Started

— Fans — Control

# Circulation/Stir Fans

Max Ammonia Levels Dec 2021



# Buffers

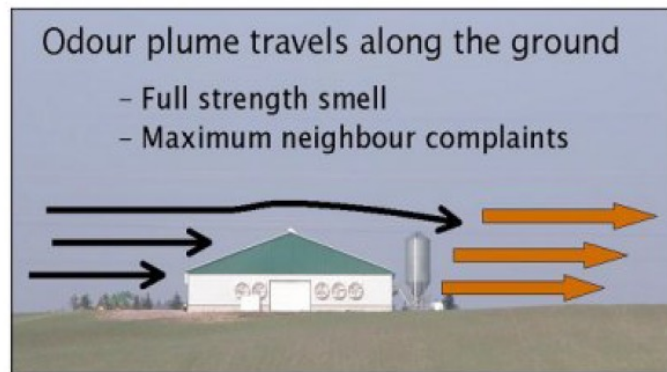
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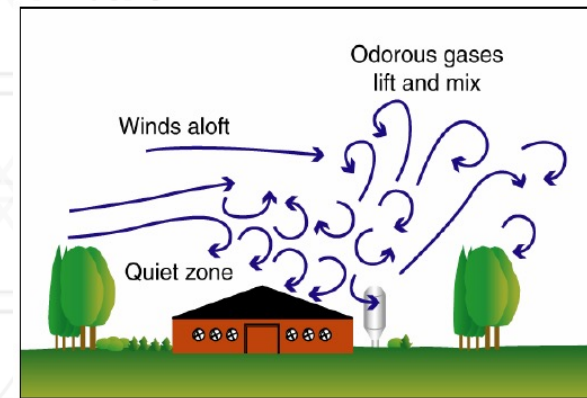
# Buffers-Reduce Dust and Ammonia

## Buffers can reduced dust by 49%, ammonia 46%

(Bud Malone, <https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/efficacy-of-vegetative-environmental-buffers/> P. Patterson)



Without windbreaks and without wind management the odor plumes are picked up by passing air masses and travel near the ground with little or no dilution or filtration. Diagram by Todd Leuty.



Windbreaks located upwind and downwind of poultry farms will reduce and manipulate air flow around the facility to reduce the spread of odors. Overhead winds can lift particles and gases into the lower atmosphere to help dilute and disperse odors. Also, more clean air diverts up and over the source of odor. Diagram by Todd Leuty.

# Reduce Dust



# Nutrient Capture & Erosion Control

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## Fecal bacteria trapping by grass filter strips during simulated rain

Sediment concentrations were reduced an average of 96% by 4.5 m filter strips and 98% by 9.0 m filter strips.

Average fecal coliform trapping efficiency was 75% in 4.5 m filter strips and 91% in 9.0 m filter strips.

Average fecal streptococci trapping efficiency was 68% in 4.5 m filter strips and 74% in 9.0 m filter strips.

M.S. Coyne, R.A. Gilfillen, A. Villalba, Z. Zhang, R. Rhodes, L. Dunn, and R.L. Blevins. *Journal of Soil and Water Conservation* Second Quarter 1998 vol. 53 no. 2 140-145

