



MARYLAND MILK MOOS

Updates

By Fabiana Cardoso, Ph.D
Dairy Extension Specialist, University of Maryland

This month, we will delve into a crucial topic: the Avian Influenza (H5N1) outbreaks observed in dairy herds across the country. This issue has significant implications for our industry, and we aim to provide valuable insights and practical advice to help you navigate these challenging times.

Stay tuned for expert opinions, latest research findings, and actionable tips to protect your herds and ensure the health and safety of your dairy operations.

Thank you for being a part of the Milk Moos community. Let's work together to address this critical issue.

Inside This Issue

Optimizing Corn Silage: Planting Decisions	2
Avian Influenza (H5N1) Outbreaks Seen in Dairy Herds Across the Country	4
Events & Programs	6
Resources	8

► AGRICULTURAL NUTRIENT MANAGEMENT PROGRAM

We remain fully operational and committed to meeting your needs.

CONTACT YOUR LOCAL EXTENSION OFFICE ADVISOR BY GOING TO

go.umd.edu/advisors



This institution is an equal opportunity provider.

UNIVERSITY OF MARYLAND EXTENSION



UNIVERSITY OF MARYLAND EXTENSION





Forage Management

Optimizing Corn Silage: Planting Decisions

Niraj Suresh¹ and Fabiana Cardoso¹

¹Animal & Avian Sciences, University of Maryland

Focal point

- ◆ Proper planting techniques are crucial for producing high-quality corn silage.
- ◆ High-quality corn silage improves efficiency, production, profitability, herd health, and sustainability of dairy operations.
- ◆ Feed costs are the highest for dairy farms, making maximizing corn yield economically beneficial.

Corn silage plays a major role in dairy nutrition. For the vast majority of dairy farms in Maryland and then nation, corn silage will make up the majority of the ration. Corn silage is a complex feed, there are several steps that must be taken to make, preserve, and feed high quality corn silage to maximize milk production. These include things such as planting and production of the corn, harvesting and packing the corn plant, storage of the silage, and proper feeding management strategies. This article will focus on different management strategies to consider when planting corn that will have a significant effect on the yield and nutritional value of the crop. Making good silage starts with planting the seed. Proper planting strategies should be a priority. If the corn does not grow, no silage can be made.

The planting decisions we will discuss are:

1. Soil Preparation
2. Planting Date
3. Row Spacing
4. Planting Depth
5. Seed Spacing
6. Soil Preparation

The farmer must ensure proper seed placement and seed to soil contact. In the past, tillage was seen as a necessity. However, in recent years with modern planting technology, corn can be planted in many different soil conditions. Very deep and silt loams with a high moisture capacity seem to give the best corn production. Generally speaking, the better the moisture and drainage of the soil, the better the corn production.

Maryland Milk Moo



Optimizing Corn Silage: Planting Decisions continued...

Planting Date

The best time frame for planting corn will vary with geographic region. Corn is a summer annual, meaning it will be planted in the Spring, grow throughout the Summer, and be harvested in the Fall. The ideal soil temperature for proper germination is around 50 degrees Fahrenheit. In Maryland, the soil normally reaches this temperature around late April. Planting at this time will allow for an optimal growth period.

Row Spacing

Row spacing refers to how much distance is in between each row of corn in the field. The standard practice is to plant with a row spacing of 30 inches. Recently there has been considerations to maximize corn yield in a given parcel of land by reducing row spacing and also utilizing twin rows. Use of 15 and 20 inch rows are now being seen. Twin rows are when 2 rows for corn are planted extremely close together and a larger space such as the standard 30 inches will separate the twin rows. Several studies have indicated improved yield when using these 2 methods. It is up to the farmer to consider whether or not reducing row spacing or using twin rows is feasible. Farmers with smaller farms may be more inclined to consider these options.

Planting Depth

The standard depth for planting corn seeds is 2 inches. This allows for ideal germination and is seen in the majority of operations. Generally speaking,

the broad range of planting depth for corn will be anywhere from 1.5-3 inches. 1.5 inches can be beneficial in cooler, wetter soils. In warmer, drier soils, planting deeper can be beneficial.

Seed Spacing

Seed spacing will vary with row width and the amount of seeds per acre. One way to calculate seed spacing in inches is by using this equation:

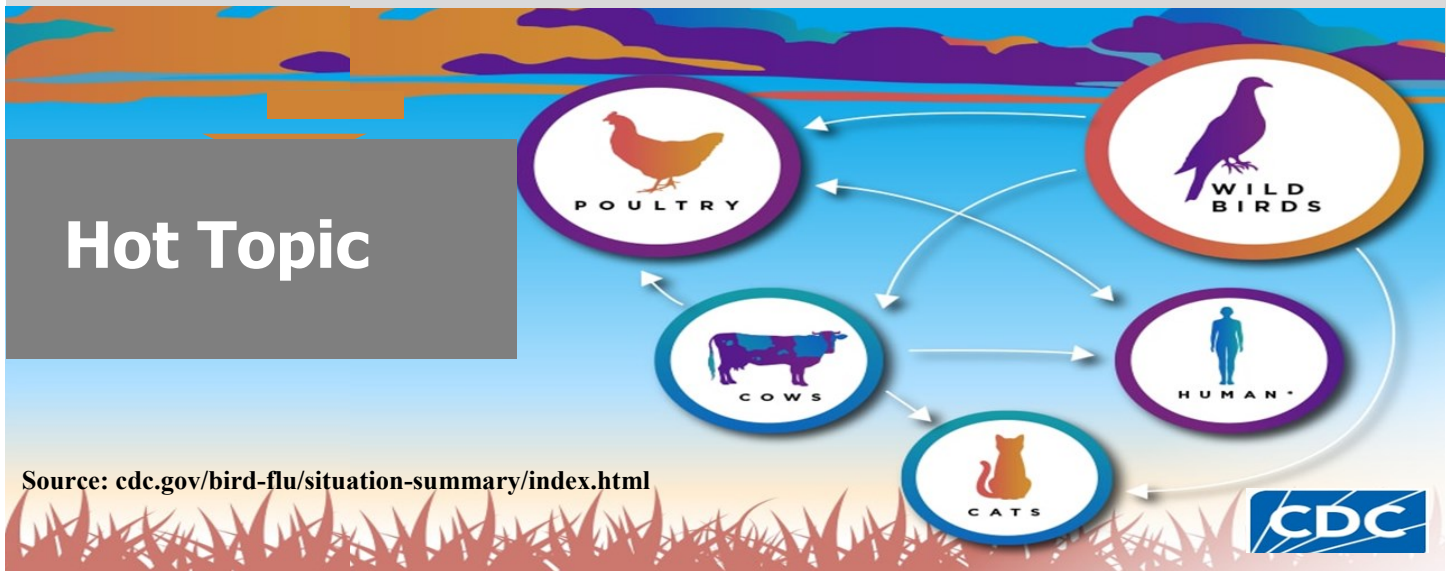
$$(43,560/\text{seeds per acre}) \times 12 \\ (\text{row spacing in inches}/ 12)$$

43,560 is the amount of square feet in 1 acre.

Proper planting techniques for corn is the first step in creating a high quality corn silage. High quality corn silage is essential to maximize the efficiency, production, profitability, herd health, and sustainability of a dairy operation. Feed is the number one cost for dairy farms. Maximizing corn yield will allow for considerable economic benefits to dairy farms.

References

1. Lawrence, J. (2022). Corn Silage: From Seed to Feed. Hoard and Sons.
2. N.A. (N.D.) Corn. Maryland Grain Producers. <https://marylandgrain.org/corn/>



Avian Influenza (H5N1) Outbreaks Seen in Dairy Herds Across the Country

Niraj Suresh¹ and Fabiana Cardoso¹

¹Animal & Avian Sciences, University of Maryland

Avian influenza, a disease originating from wild aquatic migratory bird species, has been an issue in domestic poultry production for several years, with cases first occurring in 2003. The highly contagious disease can have devastating impacts on poultry producers, with eradication of the entire flock common practice for biosecurity.

This year the pathogen has found a new host, dairy cattle. There are several strains of avian influenza, the strain being observed in dairy herds is H5N1. It was first identified in dairy cattle in March 2024 in Texas. It has been confirmed in dairy herds across 12 states, with the number most likely much higher. Dairy producers are hesitant to test for it since it will affect their milk sales if found to be contaminated.

While the disease can be fatal in poultry, the clinical signs that have been observed in dairy cattle are far less severe. Common clinical signs are reduced appetite, reduced milk production, reduced rumination, nasal discharge, and thickened and discolored milk. While pasteurization does make the milk safe to consume, the reduced milk production and chance for change in consistency will reduce milk sales for the dairy farmer if their herd is contaminated.

The disease has become particularly concerning as it has been found to be transmissible from cows to humans. So far there are 3 total human cases from exposure to dairy cattle, 2 in Michigan and

Focal point

- ◆ Avian influenza is a very contagious disease, commonly seen in dairy poultry but now being observed in dairy herds across the nation
- ◆ This is a very recent phenomenon, first being observed in March of this year
- ◆ Knowledge and research on the matter is extremely limited, but dairy scientists are working hard to understand the epidemic
- ◆ While the symptoms are minimal in cattle, if contamination is found milk sales will be stopped
- ◆ Cow to cow and cow to human transmission have both been observed
- ◆ Proper management and biosecurity are essential to reduce the spread and risk of contaminating your herd

Avian Influenza (H5N1) Outbreaks Seen in Dairy Herds Across the Country continued...

1 in Texas. However, the number is likely higher due to many farm laborers not wanting to get tested, due to loss of wages and fear of immigration issues for undocumented workers. Human symptoms have been mild as well, but the virus could evolve to be more harmful. The first 2 cases saw only conjunctiva, infection and inflammation of the eyelid. The third case however saw respiratory symptoms such as coughing. This is cause for concern as respiratory symptoms allow for much easier transmission if the virus does evolve for human to human transmission. At the moment, it is hypothesized that the disease can only be transmitted to humans from cows, meaning one person cannot give another person the disease. Right now, the best way to prevent contamination in your herd is proper biosecurity.



Biosecurity Recommendations

- **Clean and disinfect equipment** - In addition to proper sanitation of equipment, provide adequate hygiene materials for workers such as gloves and handwashing stations
- **Quarantine new cattle** - Quarantine new or returning cattle for at least 21 days. Anyone who works with them should use separate clothing, equipment, boots etc. Quarantine animals should be worked with last. Ensure proper measures are biosecurity taken after working with the quarantined animals such as cleaning boots, hands, showering ASAP, etc.
- **Isolate sick animals** -Separate sick animals with as much distance as possible and follow the same biosecurity measures as with the quarantine animals when working with them. If you have both quarantine and sick animals, deal with the sick animals after the quarantine animals.
- **Limit movements of cattle** - Try to limit cattle leaving and coming into the farm as much as possible unless absolutely necessary
- **Follow good milking practices** -Proper sanitation of both the teats and milking equipment is essential. Milkers should follow proper biosecurity measures
- **Limit vehicles and equipment** - Try to have designated equipment for certain tasks and limit movement of vehicles and equipment coming on and off the farm
- **Delay or stop non-essential visitors**
- **Avoid feeding raw milk to calves and other farm animals**
- **Feed only heat treated colostrum and pasteurized milk to calves and other animals**

Avian influenza in dairy cattle is still a very new topic. Although not much is understood and clinical signs do not seem drastic, the dairy industry is taking the issue very seriously. In recent events we have seen how disease outbreaks can devastate public health and the economy. If everyone does their part to ensure proper biosecurity and educate themselves, hopefully we can move past this outbreak.

Maryland Milk Moo

Avian Influenza (H5N1) Outbreaks Seen in Dairy Herds Across the Country continued...

References

1. American Veterinary Medical Association. (N.D.). Avian Influenza. *American Veterinary Medical Association*. <https://www.avma.org/resources-tools/animal-health-and-welfare/animal-health/avian-influenza>
2. American Veterinary Medical Association. (2024). Avian Influenza. *American Veterinary Medical Association*. <https://www.avma.org/resources-tools/animal-health-and-welfare/animal-health/avian-influenza/avian-influenza-virus-type-h5n1-us-dairy-cattle>
3. National Milk Producers Federation. (2024). H5N1 in Dairy Cattle. *National Milk Producers Federation*. <https://www.nmpf.org/resources/hpai/#:~:text=While%20dairy%20cows%20that%20have,offset%20some%20of%20these%20losses>.
4. Center for Disease Control. (2024). How CDC is monitoring influenza data among people to better understand the current avian influenza A (H5N1) situation. *Center for Disease Control*. <https://www.cdc.gov/bird-flu/h5-monitoring/index.html>

Events

- July 23: Pasture Walk Western Maryland Research & Education Center, Keedysville, MD
- August 1: Agronomic Drone School Wye Research & Education Center, Queenstown, MD
- August 2: Agronomic Drone School Central Maryland Research & Education Center, Upper Marlboro, MD
- August 7: Crops Twilight Barbecue & Ice Cream Social Central Maryland Research & Education Center, Upper Marlboro, MD

For additional details or to register go to: go.umd.edu/TFDM

Resources

Additional resources can be found on our extension page: go.umd.edu/dairyextension

Maryland Milk Moo is published quarterly by the University of Maryland Extension. It is written and edited by Fabiana F. Cardoso, Ph.D. Dairy Specialist, at the University of Maryland, 8127 Regents Dr, College Park, MD 20742-2311, tel. (301) 405-1401; e-mail: cardosof@umd.edu or Susan Barnes, Program Management Specialist, sbarnes6@umd.edu. The cost of receiving the newsletter by mail is \$5 per year, payable to the University of Maryland. The newsletter can be accessed for free on the Internet at <https://extension.umd.edu/dairy>. To subscribe email your request to dairyextension@gmail.com. In the body of the text, type subscribe, and include your first and last name and email address.

Comments and suggestions regarding the newsletter are always welcome. References to commercial products or trade names are made with the understanding that no discrimination is intended and no endorsement by University of Maryland Extension is implied.

Articles and photographs may be reprinted with permission.

University programs, activities, and facilities are available to all without regard to race, color, sex, gender identity or expression, sexual orientation, marital status, age, national origin, political affiliation, physical or mental disability, religion, protected veteran status, genetic information, personal appearance, or any other legally protected class.