

DAIRY PIPELINE

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SILAGE SHRINKAGE: WHAT DOES THE DATA SAY?



“...there are many forage best management practices that farmers should consider to minimize total silage shrinkage, and therefore increase net farm income.”

Total silage shrinkage is defined as the difference between the amount of forage delivered and packed in the silo and the amount of forage actually fed to the animals. There are five main components of total silage shrinkage: 1) losses during forage delivery and packing, 2) losses linked to the respiration, fermentation and oxidation processes (i.e., invisible losses), 3) losses due to seepage, 4) losses due to silage spoilage, and 5) losses during the feed out process.

Total silage shrinkage has a substantial negative impact on net incomes of dairy farmers. For example, assuming a corn price of \$5.30 per bushel, a corn field yielding 20 ton/acre (as fed basis) with a 33% dry matter concentration would result in a corn silage cost before shrinkage of about \$40 per ton of silage. Considering a 10 and 25% total silage shrinkage the final cost of the fed silage will be \$48 and \$57, respectively. For a 100-milking cow dairy with its replacements, this difference in shrinkages may imply an economic loss of \$13,795 per year. The question farmers may frequently ask is how much shrinkage should they expect for their silage.

A study from the Dairy Forage Research Center in Wisconsin (Martin et al., 2004) measured shrinkage from 24 silo bags and observed that total shrinkage ranged from 0 to 39.9%, with an average of 16.4%. Total shrinkage from the worst six bags (25% of the bags) ranged from 25.9 to 39.9%. The interesting observation from this study is that spoilage losses accounted less than half of the total losses (6.9% on average).

This means that more than 50% of total shrinkage is linked to the operative processes (i.e., forage delivery, packing and removal), seepage and the invisible losses.

Knowing that total silage shrinkage can be substantial, it is important to consider some factors affecting silage shrinkage:

- **Dry matter (DM) concentration.** Silages with more than 40% DM usually have the greatest silage shrinkage due to invisible losses (i.e., oxidation). Silages with less than 25% usually have the greatest silage shrinkage due to seepage.
- **Silo type.** Bunker silos have greater silage shrinkage than silo bags, and these have greater silage shrinkage than tower silos.
- **Packing density.** Silage shrinkage is inversely related to packing density (i.e., more density implies less shrinkage).
- **Silo maintenance.** Keeping the silo well covered and sealed is crucial to minimize silage shrinkage.
- **Inoculants.** Evaluate the use of inoculants to minimize silage shrinkage.
- **Feedout rate.** A minimum of 8 inches of the silo face should be extracted to minimize silage shrinkage.

In summary, there are many forage best management practices that farmers should consider to minimize total silage shrinkage, and therefore increase net farm income.

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DAIRY OVERVIEW OF THE 2014 FARM BILL

The 2014 Farm Bill has finally been passed by the house and the senate, and signed by President Obama. The \$965 Billion bill has an overall decrease in spending of about 1.7%. As you can see from the chart on the following page, the majority of the “farm” bill, nearly 80%, is food stamps and supple-

mental nutrition. The remainder is earmarked for various agricultural programs. This article will focus on the dairy title portion of the bill. The dairy checkoff program is renewed. The current Milk Income Loss Contract (MILC) program will run until August 30th, if needed. At that point the new...



Upcoming Activities

See [VTDairy](#) for details.

March 3, 2014

Winter Livestock Update
Augusta County

March 5, 2014

Winter Livestock Update
Rockingham County

March 12, 2014

Augusta Co. DHIA Banquet

March 12, 2014

Milk program w/Dairyman
Specialty out of Rocky Mount

March 20, 2014

Young Farmer Institute

March 24, 2014

Franklin County Round Table
discussion group

April 1, 2014

Forage Management Work-
shop/Ryegrass Cover Crop

April 2, 2014

Farm Credit Finance Program

April 5, 2014

Spring Holstein Show

May 19, 2014

12th Annual Hokie Cow Classic

September 22-24, 2014

Southeast Quality Milk
Initiative 2nd Annual Meeting

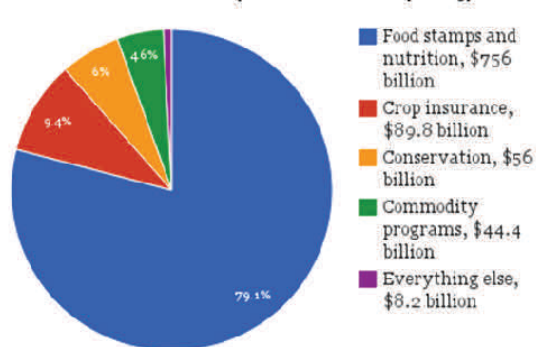
If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office.

For more information on Dairy Extension or to learn about current programs, visit us at [VTDairy](#) —Home of the Dairy Extension Program at: www.vt.dairy.dasc.vt.edu.

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What's in the farm bill? (Costs from FY2014-2023)



programs are to be in place. The MILC program and the rarely used Dairy Export Incentive Program will both be eliminated. The other program being eliminated is the Dairy Product Price Support program. This is a good thing for dairy producers as this program was outdated and often thought to actually prolong periods of low milk prices since it purchased dairy products and stored them for later resale.

The bill establishes a new program, the Dairy Product Donation Program (DPDP), which will purchase retail dairy products for 3 months or until margins rebound. The DPDP would only activate if margins fall below \$4.00 for two consecutive months. The program would trigger out if US prices exceed international prices by more than 5%. Under this provision USDA would purchase a variety of dairy products to distribute to food banks or other non-profit organizations. USDA is required to distribute, not store, these products. Organizations receiving USDA purchased dairy products would be prohibited from selling the products back into commercial markets.

The other big change to the new dairy policy is the expansion of dairy margin insurance program. All dairy operations will be eligible to participate in the program. In the first year of the Margin Protection Program (MPP), coverage will be limited to the volume of milk equivalent to the producer's production history. Pro-

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duction history is defined as the highest level of annual milk production during 2011, 2012 or 2013. There are also provisions for new producers to enroll in the program. In subsequent years, annual adjustments to the producer's production history will be made based on the national average growth in overall US milk production as estimated by USDA. Any growth beyond the national average increase will not be protected by the program. There will be a \$100 per year administrative fee to participate in the MPP. In 5% increments, producers will be able to protect from 25% up to 90% of their production history. Producers can select margin protection coverage at \$0.50 increments from \$4/cwt. through \$8/cwt. Premiums will be fixed for 5 years (through 2018) and are as follows:

Dairy operations may participate in either

Under 4 Million Pounds Sold		Over 4 Million Pounds Sold	
Coverage Level, Margin	Premium*	Coverage Level, Margin	Premiums
\$4.00	None	\$4.00	None
\$4.50	\$0.01	\$4.50	\$0.02
\$5.00	\$0.03	\$5.00	\$0.04
\$5.50	\$0.04	\$5.50	\$0.10
\$6.00	\$0.06	\$6.00	\$0.16
\$6.50	\$0.09	\$6.50	\$0.29
\$7.00	\$0.22	\$7.00	\$0.83
\$7.50	\$0.30	\$7.50	\$1.06
\$8.00	\$0.48	\$8.00	\$1.36

*Except for the premium at the \$8.00 level, these premiums will be reduced by 25% for each of calendar years 2014 and 2015 and only for marketing under 4 million lbs.

the MPP or the Dairy Livestock Gross Margin Program under the Federal Crop Insurance Act, but not both. The actual margin will be calculated by USDA monthly using a formula with the current average all-milk price minus the average calculated feed cost to produce 100 pounds of milk.

While this farm bill is not perfect, and many of the programs will be implemented over the next 7 months, it is the biggest change to dairy policy in over half a century. We will see how well it will work over the next 5 years. Of course, if milk prices remain high then most of this policy will have little effect on producers.

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