



Guide for Making High-Quality Hay in the 16% to 30% Moisture Range

Featuring the AGCO® HayBoss™ Automatic Applicator
and AGCO Buffered Acid Hay Preservative -
The Combination of Choice for the
Serious Hay Producer



Choose an AGCO System - Automatic HayBoss, Electronic, or Manual - for Accurate and Consistent Application



HayBoss™

AGCO Buffered Acid Hay Preservative allows baling high-quality hay in a wider moisture range. And now, selecting the right system for applying preservative has never been so easy. Choose from the deluxe AGCO HayBoss system, an electronic system, or an economical manual version.



1 Automatic Control - HayBoss

Gives complete control of AGCO Hay Preservative application, including: moisture content, baling speed, target application rate for hay moisture, actual application rate, and the preservative applied.

This intuitive touchscreen monitor accurately displays hay moisture on-the-go, adjusting preservative application every three seconds to match hay conditions. This precision allows the HayBoss to keep the operator aware of changing crop conditions.

Strategically located moisture sensors continuously send accurate readings to the HayBoss monitor.

Custom harvesters and hay growers are discovering that the HayBoss gets them as close to non-stop baling as possible, thanks to the system's capabilities. These capabilities include:

Automatic Mode - displays moisture content, baling speed, target and actual application rates, and preservative volume used

Manual Mode - turns pumps on and off, displays moisture content, and applies a set rate of preservative

Setup Mode - adjust baling and application rate settings, or view and change spray tip selection

Diagnostics - automatically checks performance and pump output

Job Records - stores up to 63 job records by date and time, tons baled, product used, highest and average moisture

The automatic HayBoss system is available on all baler types: large square, small square, and round.



2 Electronic Cab Control

This solid-state electronic pump control mounts in the cab or on the fender and allows quick and easy rate setting. Rate is set with a selection dial. Once set, the application rate is held constant. Electronic control is available for all baler types.



3 Manual Control

A good alternative for the small acreage hay producer just getting into hay preservative, the manual pressure regulator provides economical full-rate adjustment at the applicator. Manual control is only available on the small square and round balers.



Large Square

Already a clear favorite of custom hay professionals across the continent, the automatic HayBoss system makes for near non-stop baling, thanks to its large capacity 110-gallon (416L) poly tank. Includes a 12-volt pumping system as well as all required plumbing and wiring. Electronic control is also available.



Small Square

Growers will find the 55-gallon (208L) poly tank allows for long baling intervals. Includes a 12-volt pumping system as well as all required plumbing and wiring. Choose from the automatic HayBoss, electronic, or manual control.



Round

More growers are realizing the preservative advantage with round bales. A 55-gallon (208L) poly tank matches big throughput. (Early-model balers use a 25-gallon [95L] poly tank.) Includes a 12-volt plumbing system as well as all required plumbing and wiring. Choose from the automatic HayBoss, electronic, or manual control.

Controls and Tank Availability by Baler Type

Applicators are available for the AGCO family of hay equipment lines. Application systems are also available for other equipment brands, including Case IH, John Deere, and New Holland. See your AGCO Hesston Parts Dealer for details.

Baler Type/ Bale Size*	Controls			Applicator Tank Size		
	Automatic HayBoss	Electronic	Manual	110 gal (416L)	55 gal (208L)	25 gal (95L)
Large Square 3' x 3' 3' x 4'	X	X		X		
Small Square 14" x 18" 16" x 18"	X	X	X		X	
15" x 22" (Western-Style) 15.75" x 22" (Western-Style)	X	X			X	
Round 4' x 4' 4' x 6' 5' x 6' 4' x 5' 5' x 5'	X	X	X**		X***	X

* Bale sizes shown are approximate; actual bale size will vary from baler to baler
 ** Manual control available on 25-gallon size only.
 *** 55-gallon tank availability limited to specific late-model round balers. See your AGCO Hesston Parts Dealer for details.

Running two Hesston 3 x 4 large square balers, Jerry Chrismer, Chrismer Custom Farming, Parker, Arizona, puts up 50,000 bales a year using the HayBoss "every night, 7 days a week for 7 - 8 months. "The reason I decided to go with the HayBoss system is for the accurate moisture readings. No more getting out and probing in 20 places. The HayBoss system does that for me. Windrowed hay can be 10% moisture content at one end and 10% at the other end, but 20% - 22% in the middle 30 - 40 feet. Without the machine, you wouldn't know about that 20% - 22%. The HayBoss picks that up and puts preservative on those spots."



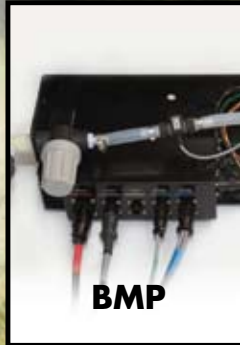
HayBoss Monitor

The touchscreen monitor of the HayBoss mounts in the cab of the tractor giving complete access to the entire application process. Running in Automatic mode the operator can easily see:

- The current moisture content of the crop (MC)
- Moisture trend over the last 90 seconds
- Number of tons per hour being baled
- Amount of AGCO Hay Preservative used per job
- Target and actual application rates
- Or return to the main menu to run diagnostics, change settings in setup mode, view job records, or switch the system to run in manual mode

Baler Mounted Processor and Pump Housing

Integral to the HayBoss's operation are three pumps and a baler-mounted processor (BMP.) The pumps and BMP are mounted to a pump plate housed on the applicator's frame, protected from the elements. The BMP serves as the HayBoss's central processing unit (CPU) and receives readings collected by the star wheel sensors. The BMP processes these readings and turns pumps 1, 2, and 3 on or off, applying the correct amount of preservative for the moisture of the crop that is being baled.



BMP

Inside



Spray Shield Assembly

Spray shield assemblies have been specifically designed for each type of baler to provide complete and even spray coverage of AGCO Hay Preservative as the crop is picked up. On the large square, three hoses run inside the baler's side panel from the applicator's three variable speed pumps to a spray shield mounted underneath the baler's tongue. The hoses each connect to a corresponding set of nozzles on the spray shield.



Top



Underside

All components shown for HayBoss system on large square baler.

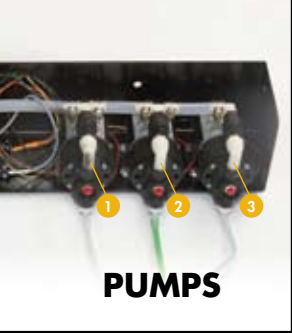


Tank and Saddle

Depending on the type of baler, applicators come with a 25-gallon, 55-gallon, or 110-gallon poly tank (110-gallon shown on large square). The tank securely straps into the tank saddle that has been custom engineered for each type of baler so as not to interfere with any of the baler's components. A drain/fill line allows the operator to quickly fill the tank with AGCO Hay Preservative using a transfer pump or to drain the tank at the end of the day or season.



Drain/Fill Line



PUMPS



STAR WHEELS ON LARGE SQUARE BALER

Two are mounted on the top of the bale chute on a large square baler.



SENSING DISCS ON ROUND BALER

Two discs - one on each sidewall - allow side-to-side sensing on a round baler.



STAR WHEELS ON SMALL SQUARE BALER

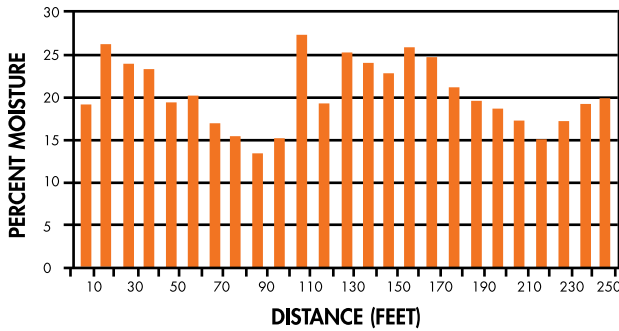
Two are mounted on the bottom of the bale chute on a small square baler.

Bale Sensors for the Automatic HayBoss System

Accurate moisture readings are given to the automatic control by moisture sensors. Sensor shape, size, and mounting position varies by baler type, but all work in the same fashion. A positive sensor mounts on one side and an isolated ground on the other side. When the hay bale comes in contact with these sensors, a current passes through the bale, sensing moisture from one side to the other through the entire width of the bale. Sensing through the whole bale gives a very accurate moisture reading that is sent to the BMP.

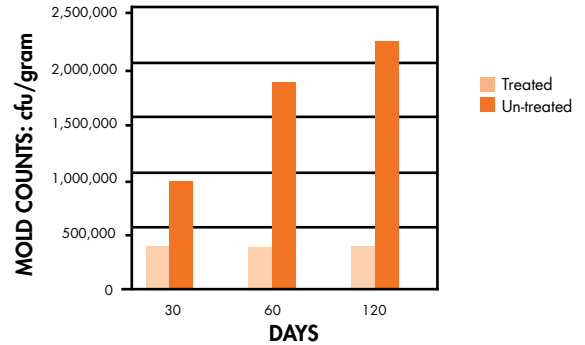
Why You Should Use AGCO Buffered Acid Hay Preservative

Hay moisture not only varies from one side of a cut hay field to the other, it can vary within the windrow itself. And wet hay can lead to high CFU (colony-forming units) mold counts which, in turn, erode hay quality and profits. In both situations, AGCO Hay Preservative can make the difference.



Windrow Moisture Taken Every 10 Feet
Second Alfalfa Cutting - Artesia, NM, USA

As this chart reveals, moisture within the windrow can vary: parts of the windrow may be dry enough to bale, while other parts of the same windrow are not. AGCO Hay Preservative allows you to bale within a wider acceptable moisture range, which accommodates both situations without sacrificing hay quality.



3' x 3' Large Square Bales Harvested at 22% Moisture and Treated with AGCO Hay Preservative
2002 University of Wisconsin Research

This chart reveals the difference in mold development in treated vs. untreated hay...even four months after being baled wet. AGCO Hay Preservative allows you to bale within a wider moisture range while inhibiting mold development.

Bale Between 16% and 30% Moisture While Maintaining Bale Quality with AGCO Hay Preservative

- Get a jump on the weather, reduce leaf shatter, and bale more acres per day.
- Effective on all types of baled forage crops, including alfalfa and grass, which are susceptible to spoilage at higher moistures
- Citric acid helps naturally maintain the smell and color of hay
- Propionic acid is chemically buffered: gentle on equipment and the environment
- Pound for pound, buffered acid does everything straight propionic acid will do without the corrosion or danger
- At 6.0 pH, AGCO Hay Preservative is as neutral as rainwater



Application Rate Chart			
Baler Type	Moisture	Stem Moisture	Dew Moisture
Large Square	16% - 22%	6 lb/ton	3 lb/ton
	23% - 26%	10 lb/ton	8 lb/ton
	27% - 30%	DO NOT BALE	16 lb/ton
Small Square	16% - 22%	4 lb/ton	2 lb/ton
	23% - 26%	8 lb/ton	6 lb/ton
	27% - 30%	16 lb/ton	12 lb/ton
Round	16% - 22%	4 lb/ton	2 lb/ton
	23% - 26%	8 lb/ton	6 lb/ton
	27% - 30%	16 lb/ton	12 lb/ton

Container Sizes	
Size	Preservative Amount*
13 U.S. gal / 49.2 L	120 lb / 54.4 kg
50 U.S. gal / 189.3 L	450 lb / 204.1 kg
200 U.S. gal / 757.1 L	1,800 lb / 816.5 kg
*Preservative is sold per pound, not per gallon. 1 Gallon = 8.33 lb / 4 kg	

AGCO Hay Preservative Ingredients	
Active Ingredient Propionic Acid	64.5%
Other Ingredients Citric Acid	5.0%
Ammonium Hydroxide, Deionized Water, Dodecylphenol Ethoxylate, Green Dyes	30.5%
EPA Registration #: 73877-1-72909	Total 100%

UNTREATED

**TREATED WITH
AGCO HAY PRESERVATIVE**



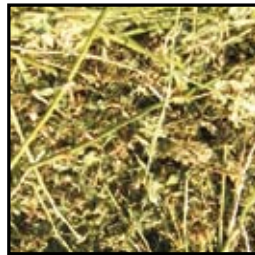
16% - 22% Moisture Level, Alfalfa Hay

Hay baled at moistures between 16% and 22% will heat enough to cause discoloration and will lose its fresh smell. Applying a low level of AGCO Hay Preservative will retain the hay's natural green color and fresh smell.



23% - 26% Moisture Level, Alfalfa Hay

Without AGCO Hay Preservative, hay baled at moistures between 23% and 26% can reach temperatures of over 120°F in storage. Mold will begin to form and the hay quality drops significantly. The same hay baled and treated with a mid-range application of AGCO Hay Preservative will stay cool and will come out of the stack the same color it went in.



27% - 30% Moisture Level, Alfalfa Hay

Baling at moistures over 27% without a preservative can result in bales heating to over 140°F. At such high temperatures the hay will turn black and may even combust. AGCO Hay Preservative will work treating hay up to 30% moisture when applied at the correct application rate.



Hay Treated with AGCO Buffered Acid Hay Preservative is Safe to Feed to Livestock

Bales treated with AGCO Hay Preservative yield more, have a higher relative feed value, and are safe to feed to all your livestock. Propionic acid, the main ingredient in AGCO Hay Preservative, is an organic acid occurring naturally in horse's gastrointestinal tract and in ruminants is produced by rumen bacteria.

More and more horse owners are choosing to feed their horses hay treated with AGCO Hay Preservative because of the improved bale quality. Untreated hay can mold and spoil causing a loss of dry matter, creating dust and even spores that are harmful to the animal's health.

"Every baler we buy will have a HayBoss on it," says Frank Jones, FJ Custom Hay, LLC of Lasalle, Colorado. Running two Hesston 3 x 4 large square balers and putting up close to 28,000 large square bales a year, Frank says his HayBoss' "are an insurance policy, a reasonably priced insurance policy.

"We use the HayBoss every time we bale. The moisture readings are accurate and the system is easy to use. Our customers and operators like that the application is done automatically by the HayBoss and there is no room for manual application adjustment errors.

"We've found baling in the 18% moisture range with preservative gives us really great looking bales. We get a lot of leaf retention, but don't use a tremendous amount of product; our bales weigh better, but it's not the moisture, it's the dry matter we are weighing at that point."



Electronic Shut-Off Eye Kit

Part No. HT474A

This optional indicator, which mounts at the hay pickup, starts and stops applicator operation in response to hay movement through the pickup. When the operator turns the baler at the field's end, the eye turns the applicator off; when the baler is back in the windrow, the eye turns the applicator back on. The shut-off eye is compatible with the automatic HayBoss or electric controlled applicators on all types of balers.



12-Volt Standard Electric Transfer Pump Part No. HT9212

This standard output model will transfer preservative at a rate of 4-gallons per minute.



High Output Electric Transfer Pump Part No. HT9214

For a rapid transfer rate of 14-gallons per minute, this 12-volt pump will get the job done quickly.



Applicator Shut-Off Switch Part No. HT475

The floor-mounted applicator shut-off switch is an inexpensive addition to your application system that enables the operator to easily stop and start the applicator with his foot. For use with an automatic HayBoss system, 2005 or newer.

AGCO HayBoss - The Hay Preservative Application System that pays for itself. Want to find out more?

Go To:

1. <http://www.agcoparts.com>
2. Under the Parts Quick Links, select "HayBoss Payback Spreadsheets and Instructions"
3. Then select the payback sheet that corresponds to your type of baler

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