



GRAIN MANAGEMENT FORUM MAY 2014

'HARVEST 2014 AND BEYOND: WHAT'S IN STORE?'



MILL AND GRAIN DIVISION
TRAINING AND DEVELOPMENT



Grain Management – Grain Treatment Programme

WHAT IS GRAIN TREATMENT?

Grain Treatment is the process of applying a Surfactant Mould Inhibitor at harvest and aerating that stored grain.

WHAT IS A SURFACTANT MOULD INHIBITOR?

A Surfactant Mould Inhibitor from the Adesco range is a synergistic blend of acids and their salts together with a surfactant. Adesco products contain the highest possible concentration of active ingredients along with a higher level of surfactant to assist in the penetration of the liquid into the grain. Adesco products are designed to be stable when exposed to aeration.

WHY TREAT?

The objective of the Grain Treatment programme is to provide merchants with an economic, alternative processing solution at harvest for moist grain. The 'treated' grain stores safely and has an extended shelf life after further processing. If the grain is rolled the appearance is ideal and robust for Coarse Mix diets.

HOW IS IT DONE?

Surfactant Mould Inhibitor is sprayed onto the grain and mixed in a mixing augur/conveyor at pre-determined rates depending on the moisture of the grain and throughput of the system.

IMPORTANT ISSUES IN THE GRAIN TREATMENT PROCESS

- 1) It is important to have your system fully calibrated and serviced prior to the start of harvest. This is provided free of charge to Adesco customers.
- 2) Know the grain moisture content and apply the correct rate of product. Rate of application varies depending on moisture content as the table below shows.
- 3) Record what is done: record the date, the type of grain, system throughput, the moisture, the tonnes treated, and store destination.

GRAIN TREATMENT:

The recommended rates of Adesco Surfactant Mould Inhibitors are:

MOISTURE%	Kilos per tonne*	
	Up to 4 months	4 to 12 months
15%	0.50	1.00
16%	1.00	2.00
17%	2.00	3.00
18%	3.00	4.00
19%	3.75	4.75
20%	4.50	5.50
21%	5.50	6.50
22%	6.50	7.50
23%	7.50	8.50
24%	9.00	10.00
24% AND ABOVE	NOT RECOMMENDED	NOT RECOMMENDED

*Individual usage rates should be discussed with your Adesco Representative.



Grain Treatment – Liquid Application



Bespoke systems are supplied by Adesco to ensure accurate, uniform and consistent application of their Surfactant Mould Inhibitor products.

Grain Treatment – Operating Procedures

GRAIN TREATMENT – BEFORE START-UP OF THE TREATMENT PROCESS

- 1) Intake equipment – measure and set the throughput
- 2) Liquid application system – ensure the system has been calibrated (Adesco) and calibration chart is at hand
- 3) Moisture – test the grain for moisture content and segregate as per company policy
- 4) Monitor weighbridge intake records

DURING TREATMENT

- 5) Know the moisture content of the grain to be treated. Retain samples
- 6) Refer to the calibration chart and choose the application rate and set the pump to apply the correct amount of Surfactant Mould Inhibitor – Throughput and Moisture
- 7) Record all parameters of the treatment process
 - a. Date, start and finish time
 - b. Throughput of the treatment system (grain throughput)
 - c. Pump setting
 - d. Tonnes treated
 - e. Product used
 - f. Actual application rate/tonne treated (daily reconciliation)
 - g. Comments and signature
- 8) Record any issues encountered throughout the treatment process



Aeration

Adesco Treated Grain needs to be carefully aerated and monitored throughout its storage life to ensure its original quality is maintained.

The purpose of aeration is to keep the temperature of the grain at a level which will reduce the risk of insect infestation. There are a few simple pointers, based on 18 years experience, to aerating your grain successfully.

These are;

- 1) Ensure all ducts are cleaned prior to harvest and all fans are in good working order.
- 2) In flat store situations walk the grain pile at least once every week.
- 3) Only aerate when ambient air temperature is at least three to four degrees lower than the temperature of the grain. Aerating at night generally meets this requirement and is cost effective.
- 4) Extraction of air over the grain pile will help reduce condensation.
- 5) Have an effective method of temperature monitoring in order to achieve the target temperatures set out below.
- 6) Do not read the temperatures directly above aeration ducts or close to pedestals as this may not represent the true temperature in the grain pile.
- 7) Record temperatures each time you read them in order to monitor the trend of the temperatures over time throughout the grain pile.

STORED GRAIN TARGET TEMPERATURES

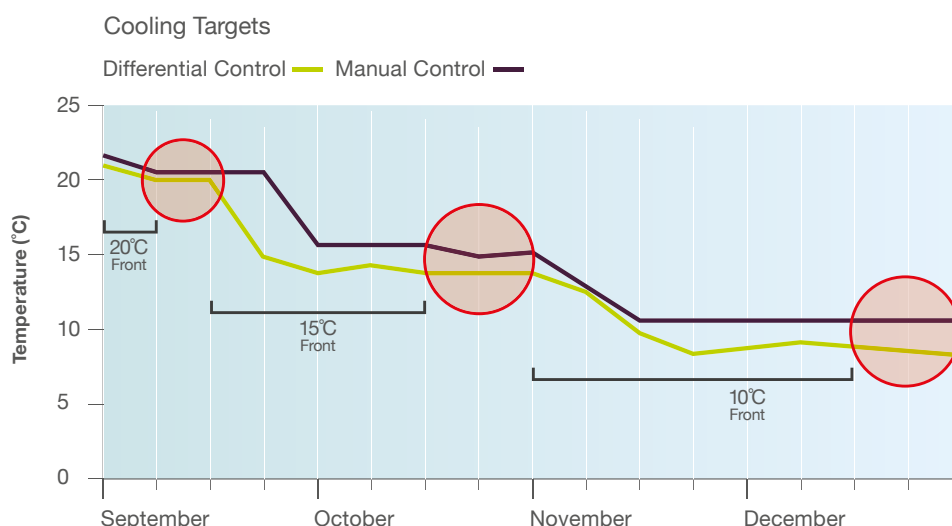
- Following the treatment of grain at harvest it is of utmost importance that the grain is aerated as soon as possible after going into store.

- Cooling targets should be:

- Below 15°C within 3 weeks of Harvest - check every day
- Below 10° C within 6 weeks of Harvest - check every second day
- Keep below 10°C for remainder of storage period - check weekly

- DO NOT ALLOW the temperature of the grain to go above 25°C at any time.

- Adesco will support you throughout the storage period by visiting your store to take and report the temperature of the grain in store. Adesco will also take samples on a regular basis for analysis which will be an indicator as to the quality of grain over time.





Key Issues for Consideration in the Grain Treatment Process

- Ideal grain for the process is between 15-24% moisture.
- The store must have adequate low level ventilation. Adesco will assist with aeration assessment and design.

ADESCO PRODUCTS:

- Have a combination of Organic Acids, Salts of Acids and Surfactant, all approved Animal Feed Additives.
- Are classified as irritant rather than corrosive.
- Are a combination of free propionic acid to kill of the natural moulds that are present in grain when harvested and ammonium propionate for long term preservation of the grain.
- Have a high level of surfactant which assist in the penetration of the product into the grain kernel.

ADESCO APPLICATION:

- Adesco products must be applied using a mixing screw. Chain and flight or belt conveyors are unsuitable. The length of the mixing screw needs to be at least 3 meters.
- Adesco take responsibility in conjunction with the customer for dosing the liquid uniformly, accurately and consistently into the mixing screw.
- Adesco supply the dosing equipment to an agreed specification.
- Adesco engineers install, commission and calibrate the dosing system.

ADESCO SUPPORT:

- Adesco will be present at initial start up and regularly during the treatment process at harvest.
- System performance and product usage is also checked during these visits.
- Breakdown response is usually available within 8-12 hours.
- Once the stores are full, support with the aeration and monitoring of the grain pile is provided.

Jack O'Hare

jack.ohare@adesco.ie
Telephone: 087 2208816

Tom Burns

tom.burns@adesco.ie
Telephone: 087 2684321





MILL AND GRAIN DIVISION

ADESCO SUPPORT

Adesco Nutricines
Newton House
Bachelors Walk
Bagenalstown
Co.Carlow, Ireland
T: +353 (0)59 97 22995
E: info@adesco.ie
www.adesco.ie

ABOUT ADESCO

Adesco is committed to helping grain processors to quickly and significantly improve competitiveness by reducing the cost of high quality grain production.

Adesco's innovative science-led solutions work with nature to reduce the cost of consistently producing higher quality grain with improved nutritional yield that is cleaner and more environmentally sound.

Adesco offers a range of advanced products, measurement and application systems and ongoing grain performance programmes.

For more information on the programme, email info@adesco.ie

www.adesco.ie

