TECH TALK

ALLBIND HD: The next generation of pellet binders

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Alltech®

The primary purpose of a pellet binder is to improve pellet quality so there are more whole pellets and less fines and dust in the finished feed product. One of the main sources of customer complaints at a feed mill is pellet quality — specifically, the presence of excessive fines and dust.

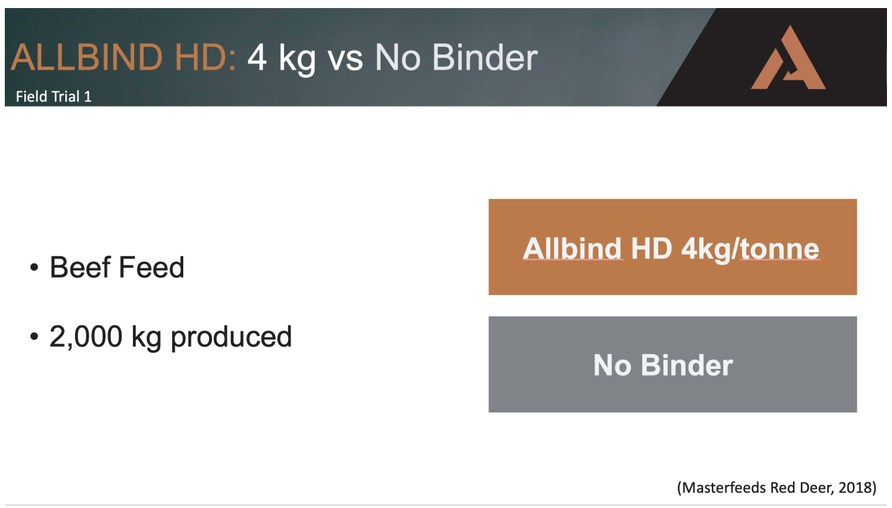
Pellet quality is measured in terms of the Pellet Durability Index (PDI). This figure is determined through a standardized procedure in which a sample of pelleted feed is run through a tumbling device. The fine particles are then screened out, and the remaining pellets are weighed. The weight of the remaining pellets is then divided by the original weight to give a PDI percentage.

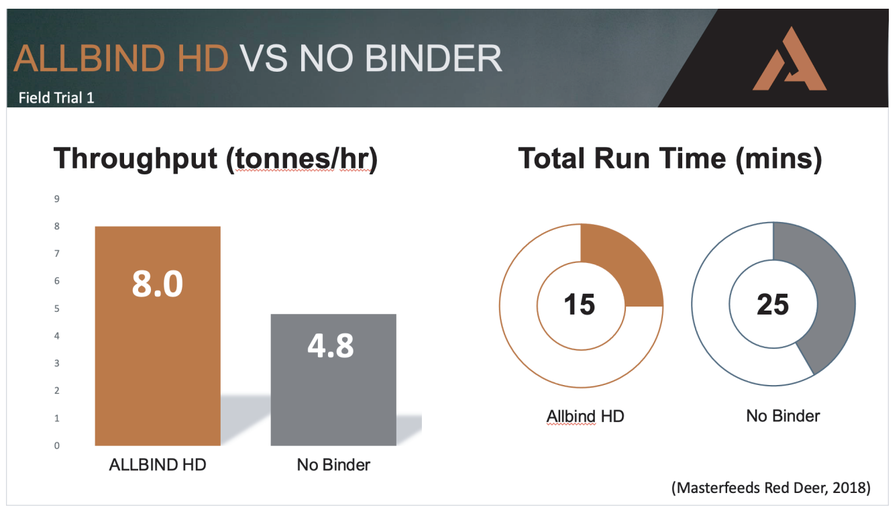
There are several factors that affect pellet quality, such as the ingredients in the formula, the particle size of the ingredients, the percentage of fat in the formula and the specific equipment being used. It's not unusual for the same formula to have different pellet quality outcomes at different feed mill locations, so the use of pellet binders is very location- and formula-specific. The required pellet quality will also vary depending on the end user. For some customers, pelleting is primarily done to make the feed flow better out of the bin; this would especially be true when the feed is being added to a total mixed ration (TMR) for dairy and beef animals. For other customers, it is very important that the fines and dust be kept to a minimum, including in feed used in Dairy Robot feeders or in specialty feeds being sold through farm stores. The decision on whether to use a pellet binder — and how much to include — is very much dictated by the specific formula and the end-user's requirements; it's certainly not "one size fits all."

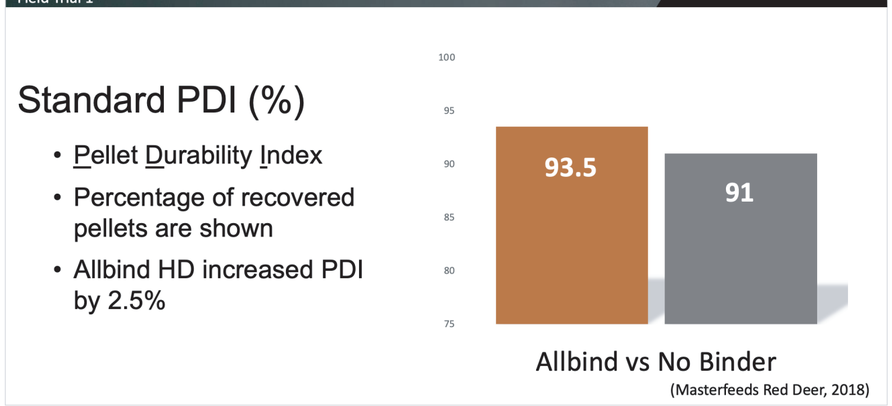
One factor to consider when choosing whether to use a pellet binder is the effect it will have on mill throughput. Some pellet binders do a good job of gluing the pellets together but have a detrimental effect on mill throughput. In an ideal world, the pellet binder will maintain or improve the pellet's mill throughput, since the tons per hour that can be produced is one of the major factors for an efficient feed mill operation.

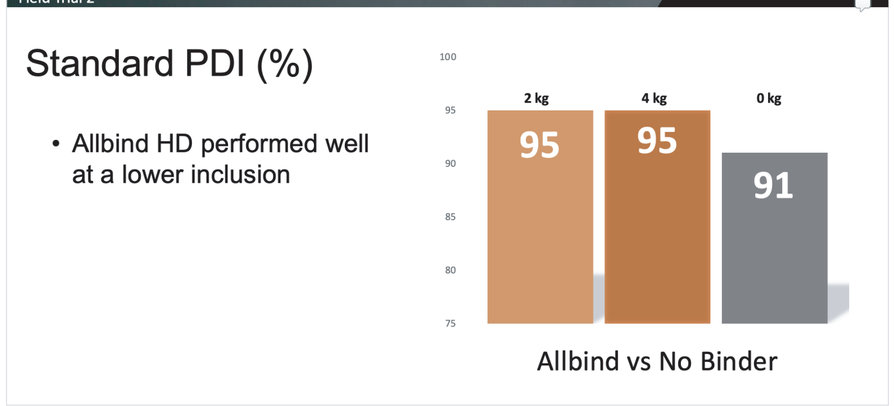
The development of a pellet binder at Alltech was spurred by the company's acquisition of several commercial feed mills — notably, Ridley in the U.S. and Masterfeeds in Canada. Several pellet binders were being used in these systems, and Alltech saw this as an opportunity for product innovation. Alltech already offered a pellet binder called Allbind, but we quickly realized that there was room for improvement in terms of the product's efficiency and cost-effectiveness. Three new versions of Allbind were developed and tested, and of those three, Allbind HD clearly emerged as the best option, as it improved both pellet quality and mill throughput at the same time.

Included below are the results of field trials conducted at Masterfeeds in Canada. These trials showed that we were able to improve PDI percentages while simultaneously increasing pellet mill throughput, all while being provided at lower inclusion rates.









What makes Allbind HD different? Allbind HD combines two modes of action: reactivity in the pre-conditioning stage and gluing action as the pellets begin to cool down. We believe the combination of these two modes of action has a synergistic effect, resulting in better PDI percentages and better pellet mill throughput. We were also able to dramatically reduce the amount of pellet binder that is required. For example, in the trials, 8 pounds of a Lignosulfonate pellet binder was replaced with just 3 pounds of Allbind HD. This resulted in a significant cost-savings and also allowed for reformulation cost-savings due to space being freed up in the formula.

Key takeaways:

- Allbind HD improves pellet durability and pellet mill throughput
- Allbind HD works on a variety of feeds and has been tested in commercial feed mill facilities
- Allbind HD has a low inclusion rate, allowing for cost-savings and formulation flexibility

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