

Q. Why should I use a silage inoculant?

A. Even the best forages tend to have relatively low numbers of lactic acid bacteria on them and they are not the best types to bring about a fast, efficient fermentation.

Q. What is an inoculant intended to do?

A. An effective inoculant dominates the fermentation process, resulting in a faster pH fall and a more efficient fermentation with higher residual sugars, a higher proportion of lactic acid, less protein breakdown and lower dry matter losses.

Q. Why is it important to eliminate air from the silo quickly?

A. Immediately after ensiling plant enzymes and microorganisms that use air are still active and will use some of the sugars needed for fermentation as well as start to break down plant proteins. Also, in the presence of air, the yeasts and molds that cause aerobic spoilage grow and multiply much faster. When the air gets used up the enzymes are inactivated, the molds form inactive spores and the yeasts stop multiplying. The longer air is available initially the more sugars will be wasted and protein broken down. More yeasts and molds will also be present when you expose the silage to air at feedout, increasing the risk of aerobic spoilage.

Q. Why is rapid fermentation so important?

A. Rapid acidification inhibits the plant enzymes that break down protein, retaining more of the nitrogen as true protein which will be utilised more efficiently by the rumen microorganisms for production. It also inhibits undesirable bacteria, like clostridia, that compete for sugars, potentially producing a poorly fermented, unpalatable silage with high DM losses. The faster the pH fall the better.

Q. What is *Lactobacillus plantarum*

A. *L. plantarum* is recognized as the best type of lactic acid bacteria for producing lactic acid quickly and efficiently in silage. As this is the strongest acid produced in silage, this will lead to a faster pH fall. ECOSYL applies large numbers (100,000 per gram of forage) of a particular strain of *L. plantarum*, called MTD/1.

- Q.** Why is the MTD/1 strain so important?
- A.** MTD/1 has a number of characteristics that differentiate it from other strains of *L. plantarum* and make it particularly suitable as a silage inoculant. It is very robust so ECOSYL has a long shelf life and tank mix life and starts working quickly when applied to the crop. It works over a wider pH range (7.5 to 3.5) and temperature range (46-113°F) than most other strains and it is able to work in the presence of air so there is no delay in it getting going after the forage is ensiled.
- Q.** Does ECOSYL contain other strains of bacteria or enzymes?
- A.** No, trials have shown that MTD/1 can bring about a successful silage fermentation with a wide range of crops and in a wide range of ensiling conditions without the need for other bacteria or enzymes.
- Q.** Aren't products containing multiple bacteria and enzymes better?
- A.** No. The reason most products contain more than one type of lactic acid bacteria is because most strains of *L. plantarum* don't begin to work until the pH has fallen to around pH 5 so other helper bacteria able to grow at a higher pH, such as *Pediococcus* or *Enterococcus*, are used to start the fermentation. With such inoculants, not all the bacteria applied are working immediately. With ECOSYL all 100,000 are so the pH falls faster. Enzymes are expensive so inclusion rates are generally low. There is a distinct lack of published evidence demonstrating that the enzyme component in combined inoculant/enzyme products brings any benefits.
- Q.** Which forage crops can ECOSYL be used with?
- A.** ECOSYL can be used on most crops, including corn, alfalfa, grasses, small grains, high moisture corn and sorghum. ECOSYL has been extensively tested on all of these crops and in many geographical areas worldwide, including the U.S. and Canada.
- Q.** How are silage inoculants regulated?
- A.** In the U.S. there is no mandatory efficacy approval system. Products must simply conform to the Association of Feed Control Officials (AFCO) guideline on labelling (ingredients, net weight, etc). Claims for product efficacy (fermentation, reduced aerobic spoilage) on labels, brochures, etc, can only be made if they have first been submitted to the FDA and no objection raised by them. Animal performance claims can only be made if a full animal drug submission has been made and approved by the FDA. Note: The FDA will note 'approve' any products, only 'recognise' or 'accept' the claims.

The FDA has recognised ECOSYL's claim for improved fermentation based on data submitted from 140 trials.

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