

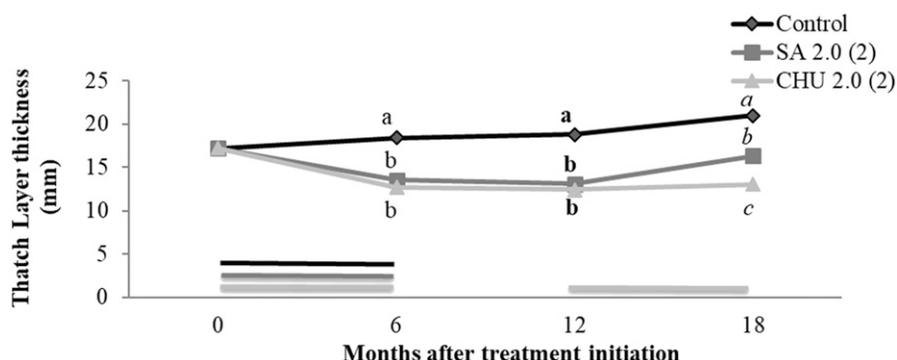
## Thatch reduction using an enzyme

### *Powerful lignin degrading enzyme*

**Lignase** is an enzyme extracted from white rot fungi and is a potent technique to effectively manage thatch in turfgrass systems. Lignin is a major component of plant cell walls and acts as a protective matrix that limits microbial degradation of cellulose and hemi-celluloses. Certain white-rot fungi produce an extra-cellular enzyme which breaks down lignin and opens a pathway for other microbes to degrade the exposed cellulose and hemi-cellulose. **Lignase** is made from this enzyme.

#### Why choose Lignase?

**Lignase** is an easy to apply liquid formulation that works unseen under the surface breaking down lignin without disturbing the playing surface nor damaging the turfgrass plant. **Lignase** reduces destructive and costly mechanical methods, such as scarifying and hollow coring, and damaged plant tissue leads to disease that incurs more costs to control. In addition, revenue is lost during the operations and recovery phases.



Thatch layer thickness (TLT; in mm) at 6, 12, and 18 months after treatment initiation on creeping bentgrass. Laccase treatments 0 (control), SA 2.0 (2) for 6 months during year 1, and CHU 2.0 (2) for 6 months during year 1 and 6 months during year 2 are shown. Treatments are presented as the laccase source followed by the activity level (units·cm<sup>-2</sup> and application frequency (weeks) in parentheses. Horizontal lines near the bottom of the graph represent periods of treatment application from 0 to 6 months and 12 to 18 months. Values are the means of four replicates. Treatments with the same letter within a sampling date (6 months = lowercase standard; 12 months = lowercase bold; 18 months = lowercase italics) are not considered statistically different according to Fisher's protected least significant difference (LSD) at  $\alpha = 0.05$ . SA, laccase procured from Sigma Aldrich; CHU, laccase procured from China (Jiangnan University). From: Sidhu S. (2019) Short-term and Residual Effects of Laccase Application on Creeping Bentgrass Thatch Layer. HORTSCIENCE 54(9):1610-1620. 2019. <https://doi.org/10.21273/HORTSCI13970-19>

#### The main benefits of Lignase are:

- Proven effect on lignin degradation
- No interference on the playing surface
- Effective in a wide range of rootzone conditions
- Reduces disruption and increases player satisfaction
- 100% environmentally friendly and safe to use

#### Application Guidelines

Dilute 4kg **Lignase** in 500 liters of water per hectare of turfgrass surface.

Apply six times from April to October (depending on soil temperatures in spring), equating to every four weeks from late spring to autumn.

**Lignase** can be tank mixed with biostimulants.

**Storage** Store unused packets of **Lignase** in a cool, dry environment.

Call now for more information

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