The use of exogenous fibrolytic enzymes on improving fibre digestibility and performance of lactating dairy cows

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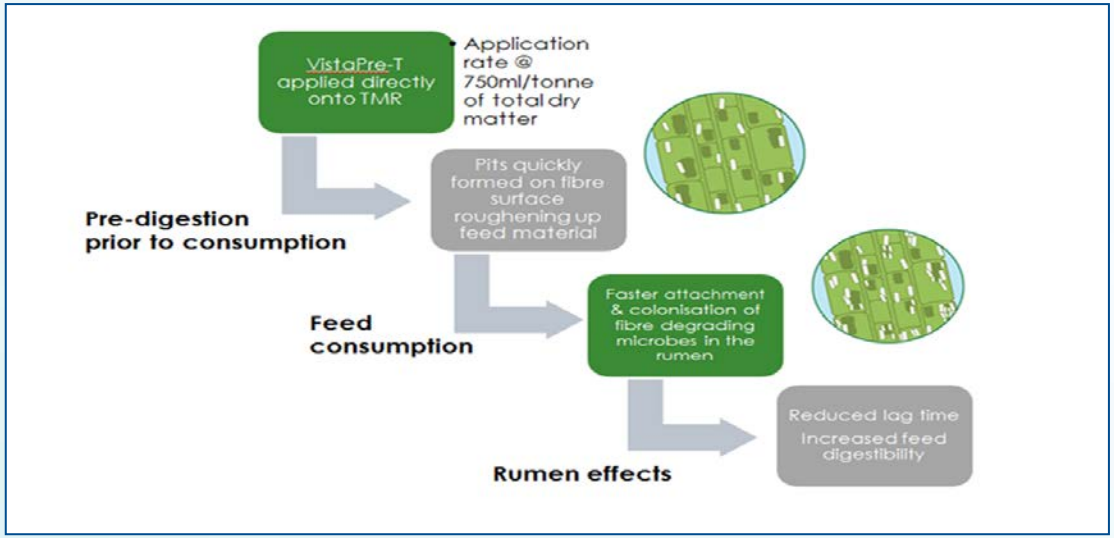
Exogenous fibrolytic enzymes (EFEs): mode of action

Exogenous fibrolytic enzymes (EFEs)

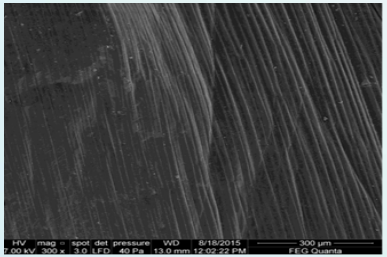
- derived from a fermentation extract of Trichoderma reesei
- enriched in xylanase and cellulase activity
- make holes or pits in the fibre surface
- reduce lag time to digestion
- pre-treatment effects – action outside the cow



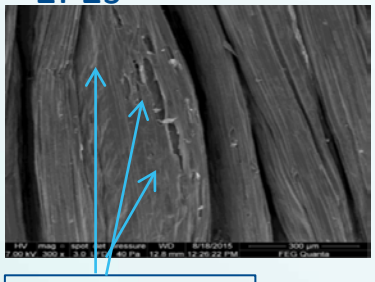
Exogenous fibrolytic enzymes (EFEs), effect on fibre

Effect on grass silage, after 3 h incubation

Control



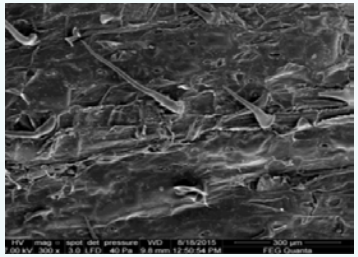
EFEs



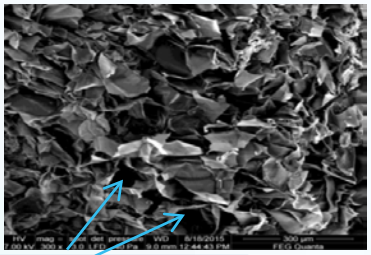
Holes/ pits

Effect on maize silage, after 1h incubation

Control



EFEs



Holes/ pits

N=74	NDF (%)	ADF (%)	Soluble CHO (%)	D-value (%)	ME value (MJ/Kg DM)
Average value before pre-treatment	47.9	30.5	4.13	64.9	10.8
Range (before pre-treatment)	34.4-69.5	22.0-43.6	1.26-6.57	48.9-76.2	8.2-12.7
Effect of EFEs*	**-9.0**	**-5.6**	**+1.09**	**+4.8**	**+0.8**
Average value post-treatment	38.9	24.9	5.22	69.7	11.6

*VistaPre-T

Exogenous fibrolytic enzymes (EFEs), effect on performance

Trials have observed

- Improvements in milk yield (+2.4 kg/d, 33.0 vs 30.4 kg/day)
- Improvements in feed efficiency (+ 11.9%, 1.60 vs 1.43, P=0.03) driven by both increased yield and reduced DMI