



Influence of different slurry application methods on grass silage quality

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Introduction

The objective of this study was to compare the effect of different slurry application methods on grass silage quality and number of clostridia spores.





Different slurry application techniques



Treatments:

- Mineral N fertilizer (only 2013)
- Broadcast
- Band-spread
- Trailing-shoe

Application time:

- Early: 1-3 days after cut
- Late: 7-10 days after cut

Slurry: 4-5% DM

30 kg NH₄-N per ha and cut

Forage:

Samples were ensiled in 1.5 l laboratory silos (3 silos per treatment)



Chemical composition of fresh forage samples

Year	Cut	DM %	Ash g/kg DM	Crude protein g/kg DM	Crude fiber g/kg DM	ESC g/kg DM
2013	1	22.2	72	120	254	146
	3	30.1	81	117	225	122
	4	33.7	78	143	207	124
2014	1	42.0	85	143	161	180
	2	35.2	73	73	334	105

DM: dry matter; ESC: ethanol soluble carbohydrates

Botanical composition

2013: pure grass stands

2014: grass-clover stands (86 % grasses, 13 % clover, 1 % forbs)

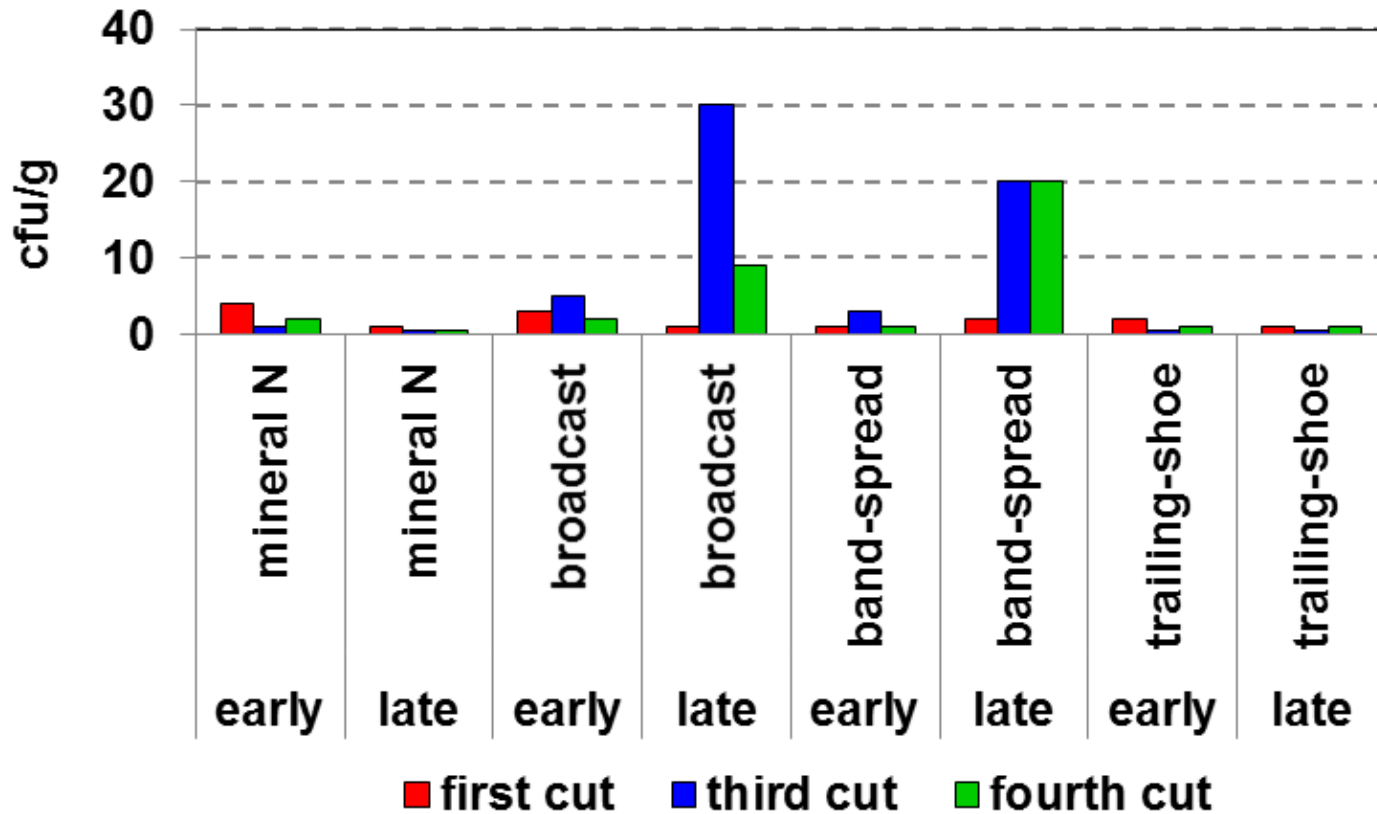


Slurry application and rainfall

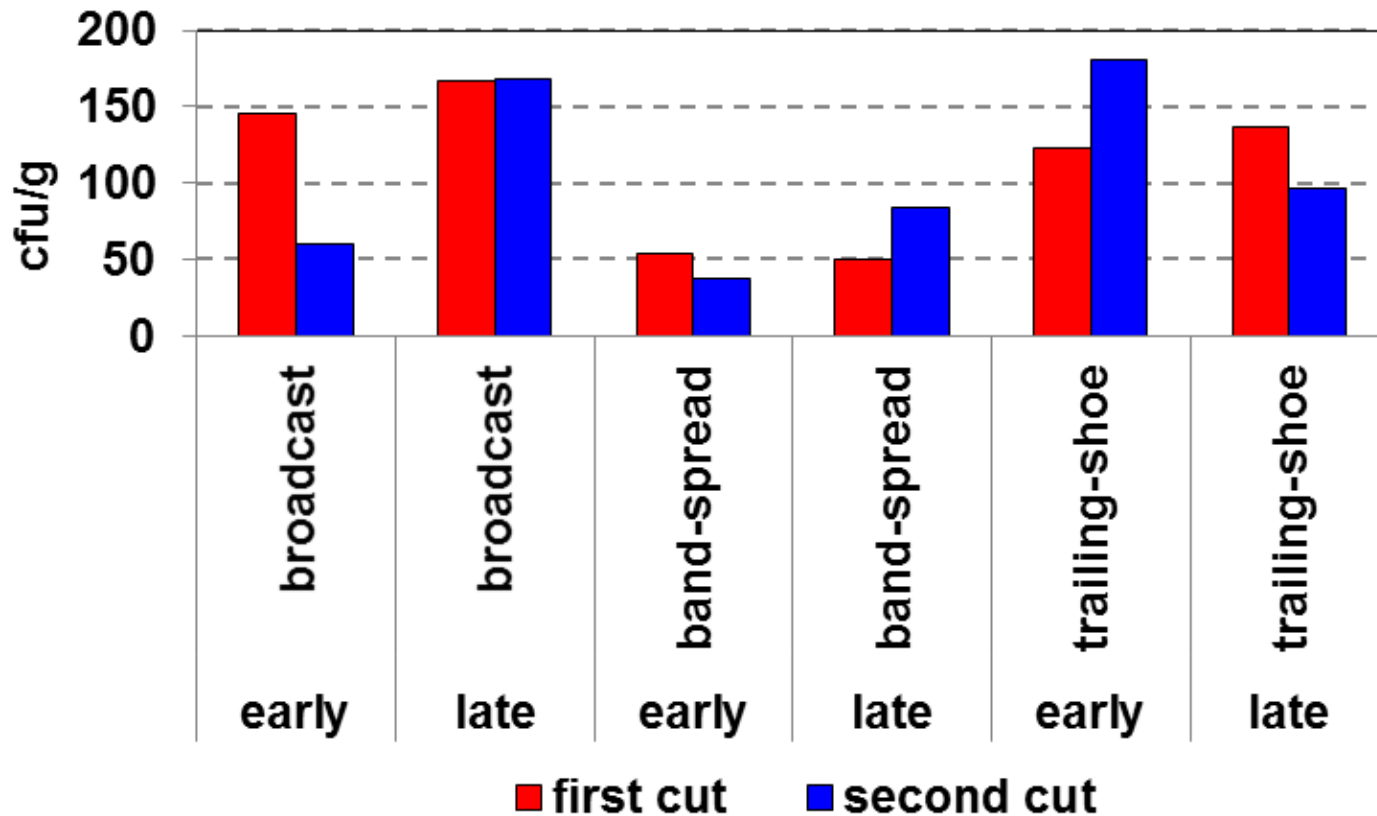
Rainfall between slurry application and next cut

Year	Cut	Early application Rain, mm	Late application Rain, mm
2013	1	200	161
	3	74	47
	4	116	63
2014	1	68	68
	2	161	93

 **Clostridia spores of fresh forage at different application techniques and application timings – results 2013** (cfu: colony-forming units)

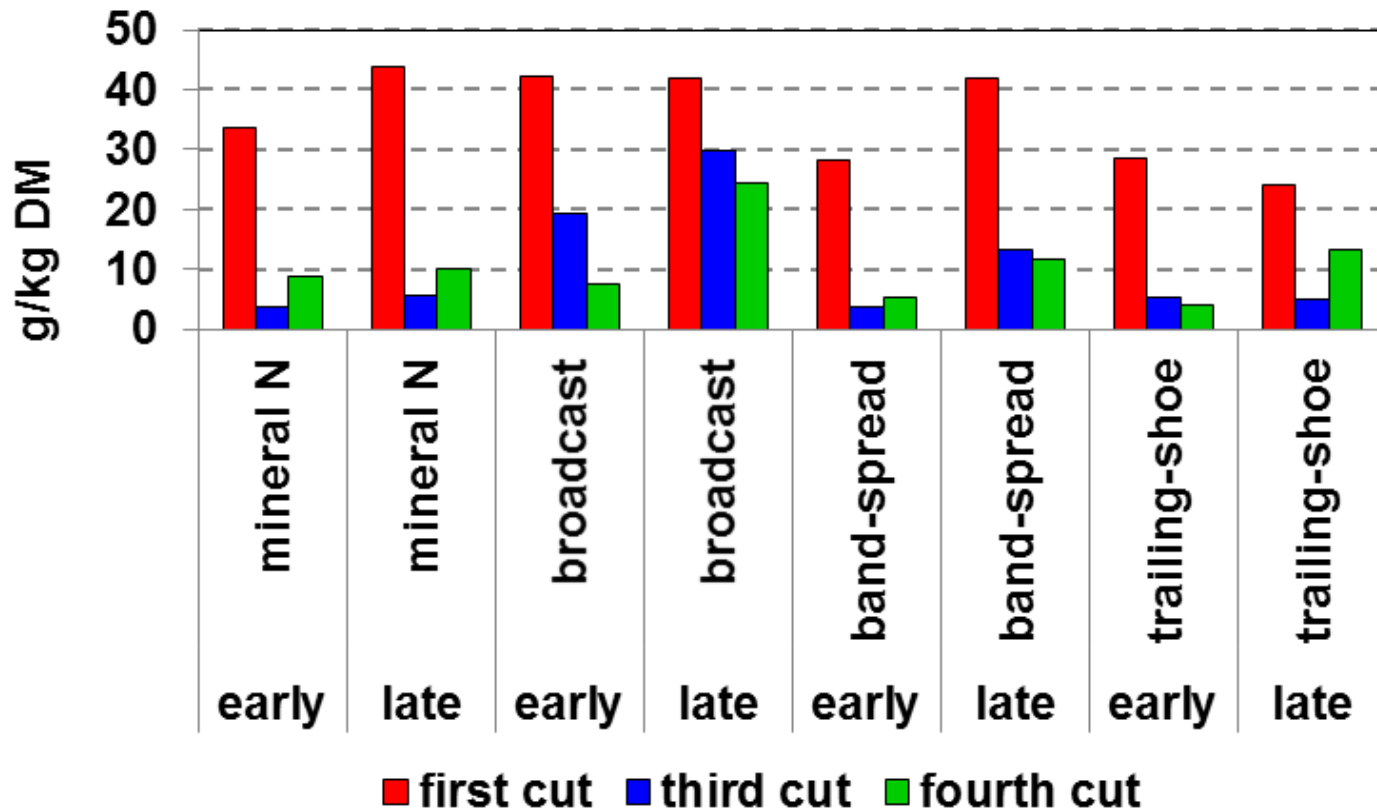


 **Clostridia spores of fresh forage at different application techniques and application timings – results 2014** (cfu: colony-forming units)



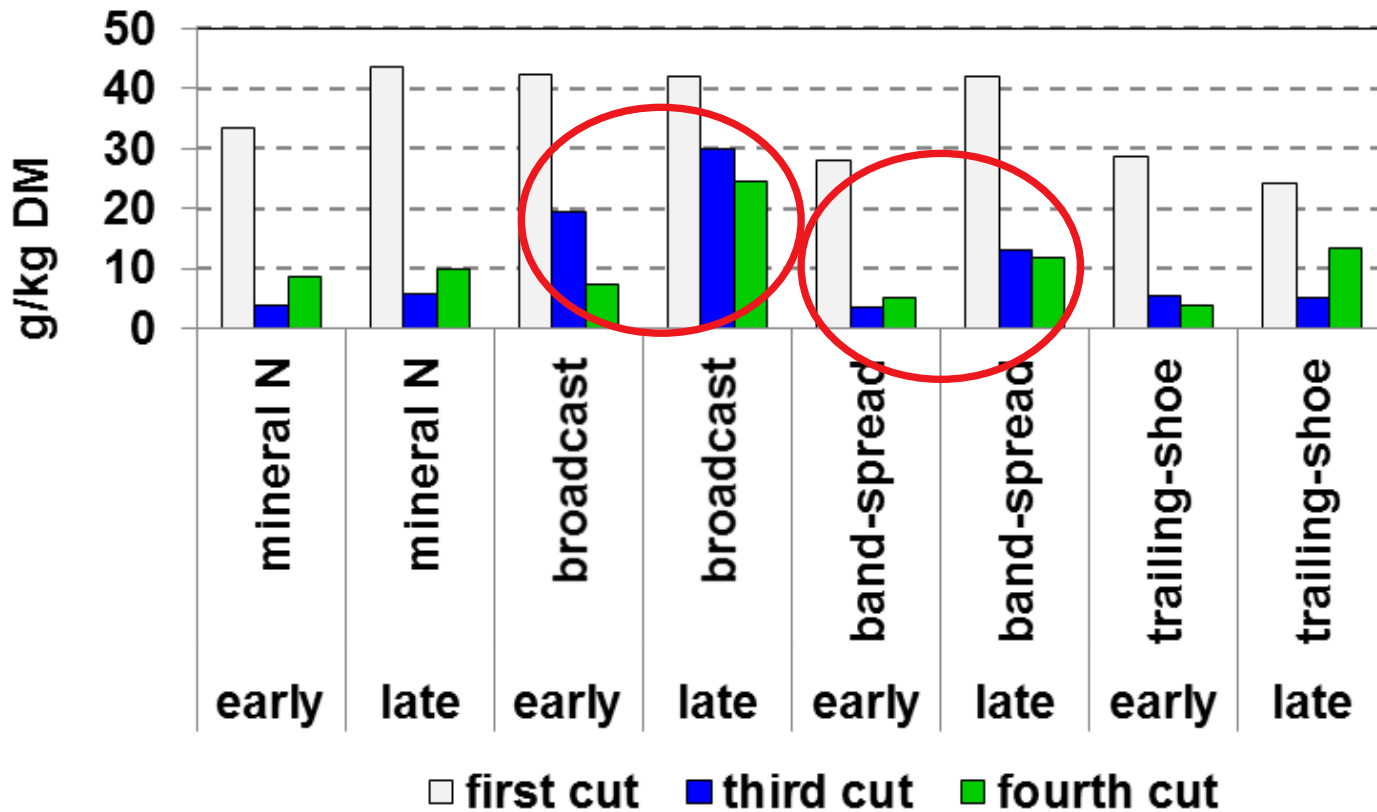


Butyric acid content of the silages at different application techniques and application timings - results 2013



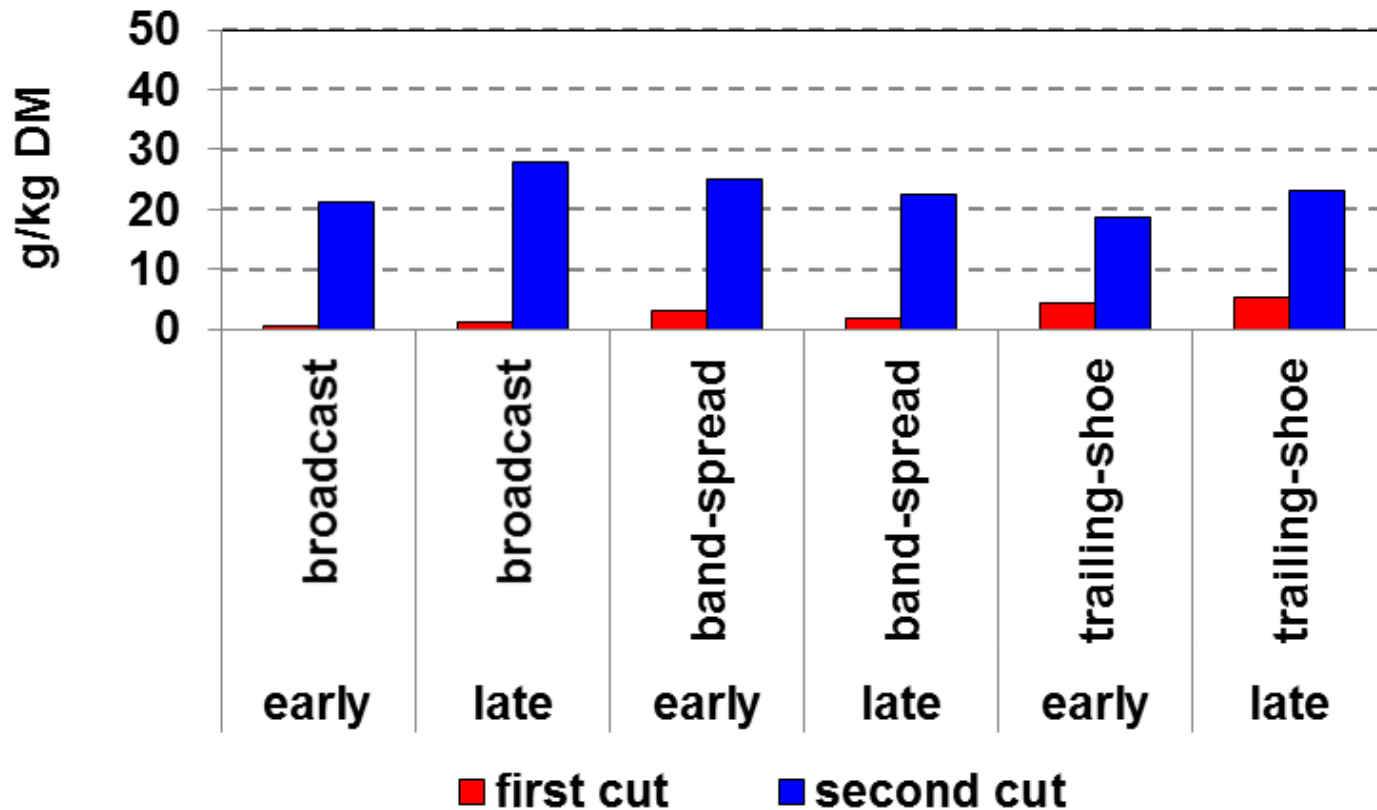


Butyric acid content of the silages at different application techniques and application timings - results 2013



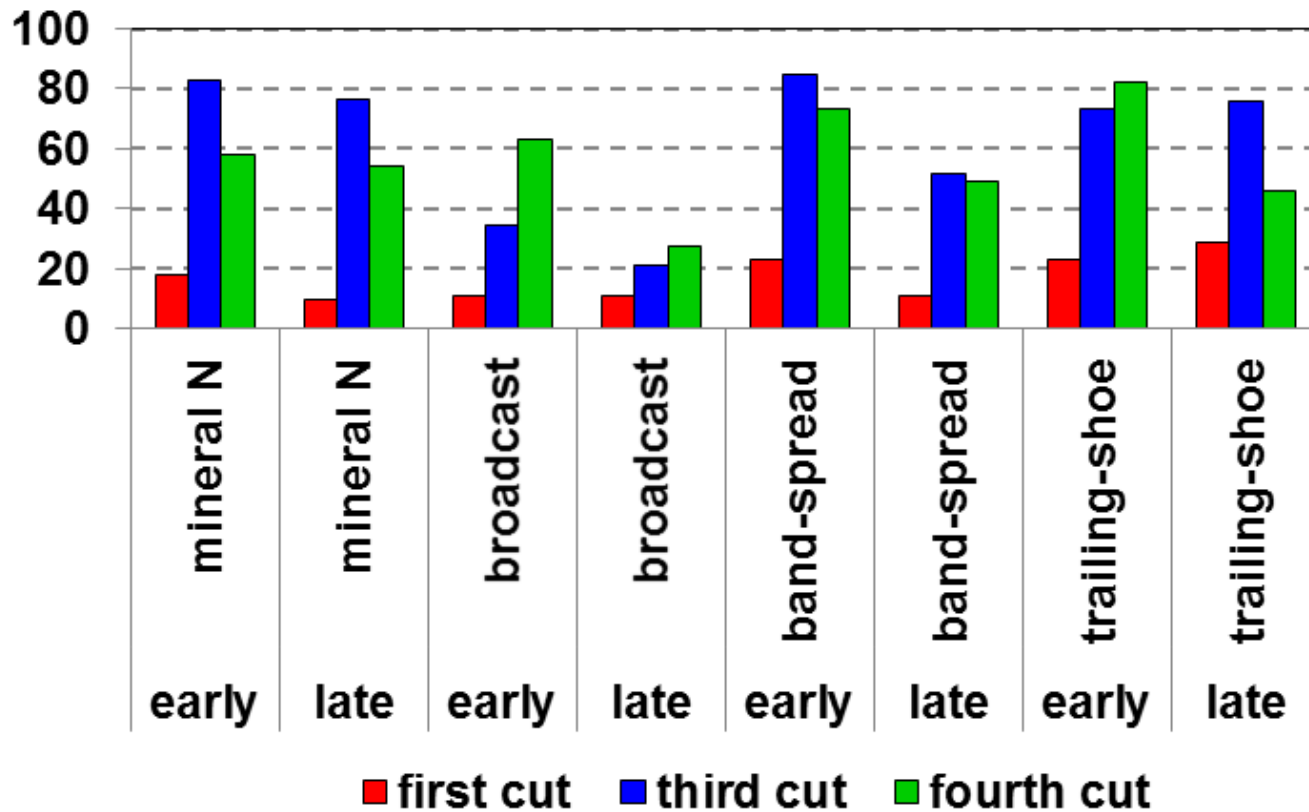


Butyric acid content of the silages at different application techniques and application timings - results 2014



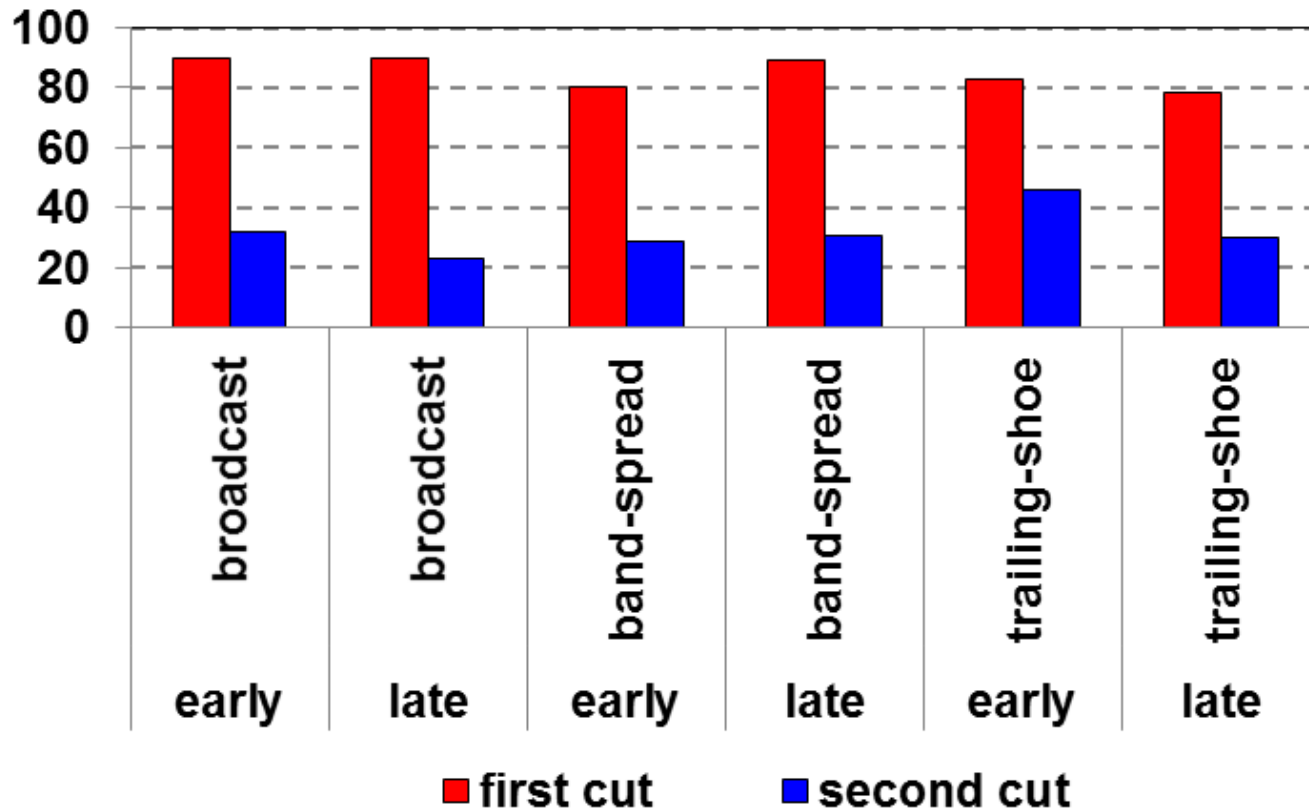


DLG-Points of the silages at different application techniques and application timings - results 2013





DLG-Points of the silages at different application techniques and application timings - results 2014





Summary

- **The different slurry application methods influenced the number of clostridia spores in fresh forage**
- **The time of slurry application had an effect on clostridia spores – increased values when slurry was late applied**
- **Besides the clostridia spores, the pre-wilting degree and the age of the forage (crude fiber content) had an important influence on the butyric acid content and the silage quality**



Thank you for your attention!

