



Anaerobic Digester Foaming Workshop

April 21, 2010



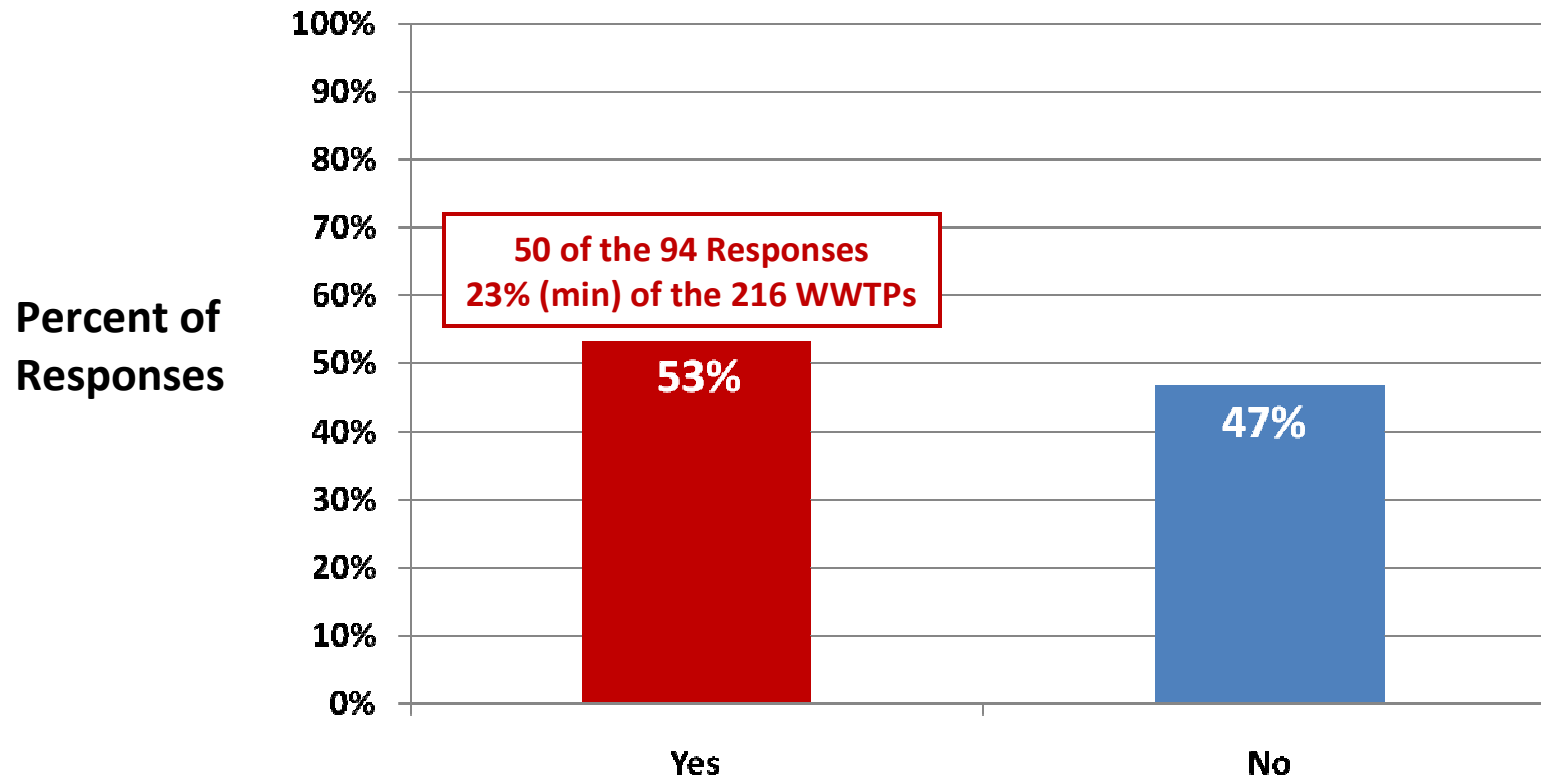
Brief Survey Summary

- **About 216 WWTPs have anaerobic digestion:**
 - Illinois: 64
 - Minnesota: 56
 - Wisconsin: 96
- **Ad hoc committee developed questionnaire to gauge the extent of anaerobic digester foaming problems at WWTPs**
- **Follow-up calls and e-mails**



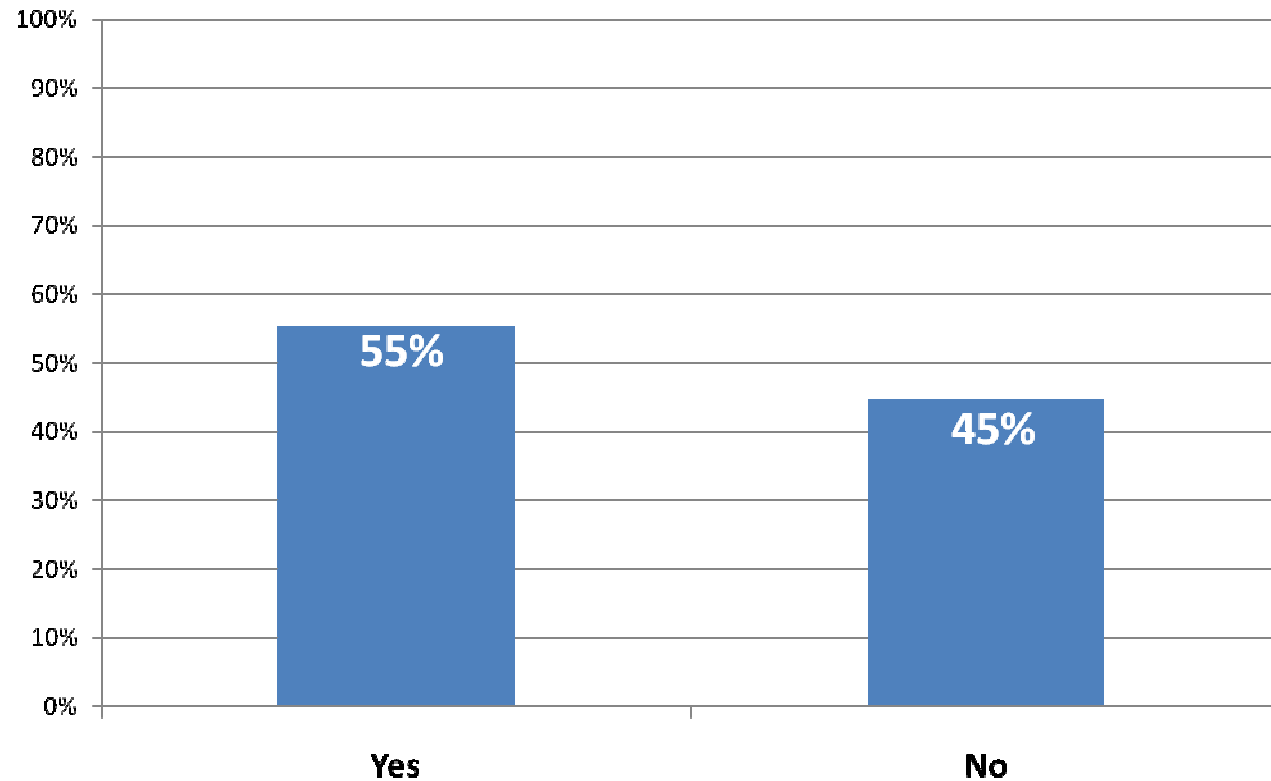
Survey – 94 Responses (44%)

- Significant Digester Foaming in Last 10 Years?



Survey Responses

- Was Cause of Digester Foaming Determined?



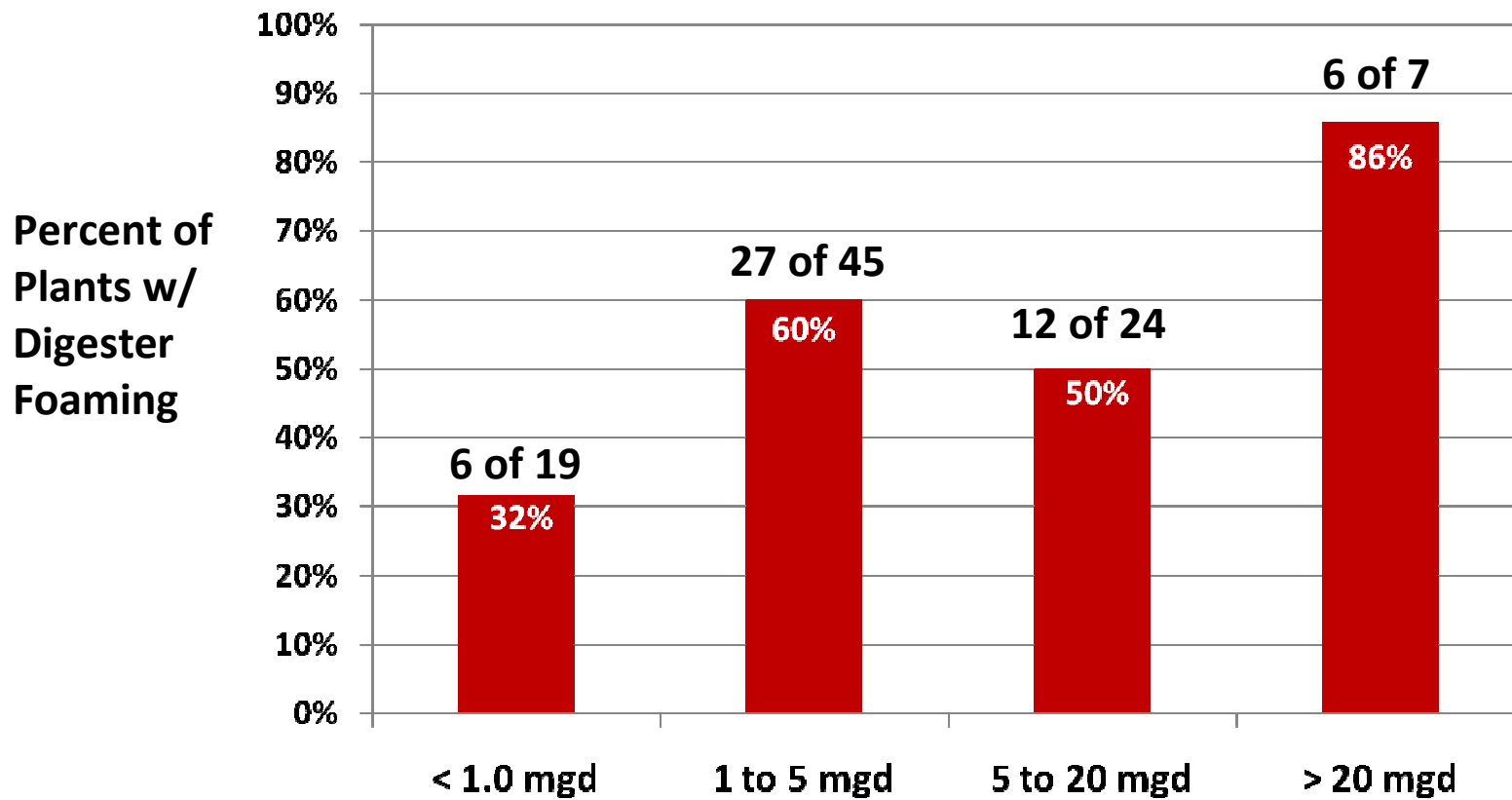
Survey Trends

- **Size of WWTP**
- **Type of Liquid Biological Treatment**
- **Foaming in Activated Sludge?**
- **Nutrient Removal**
- **Type of Anaerobic Digestion**
- **Digester Detention Time**
- **Digester Mixing System**



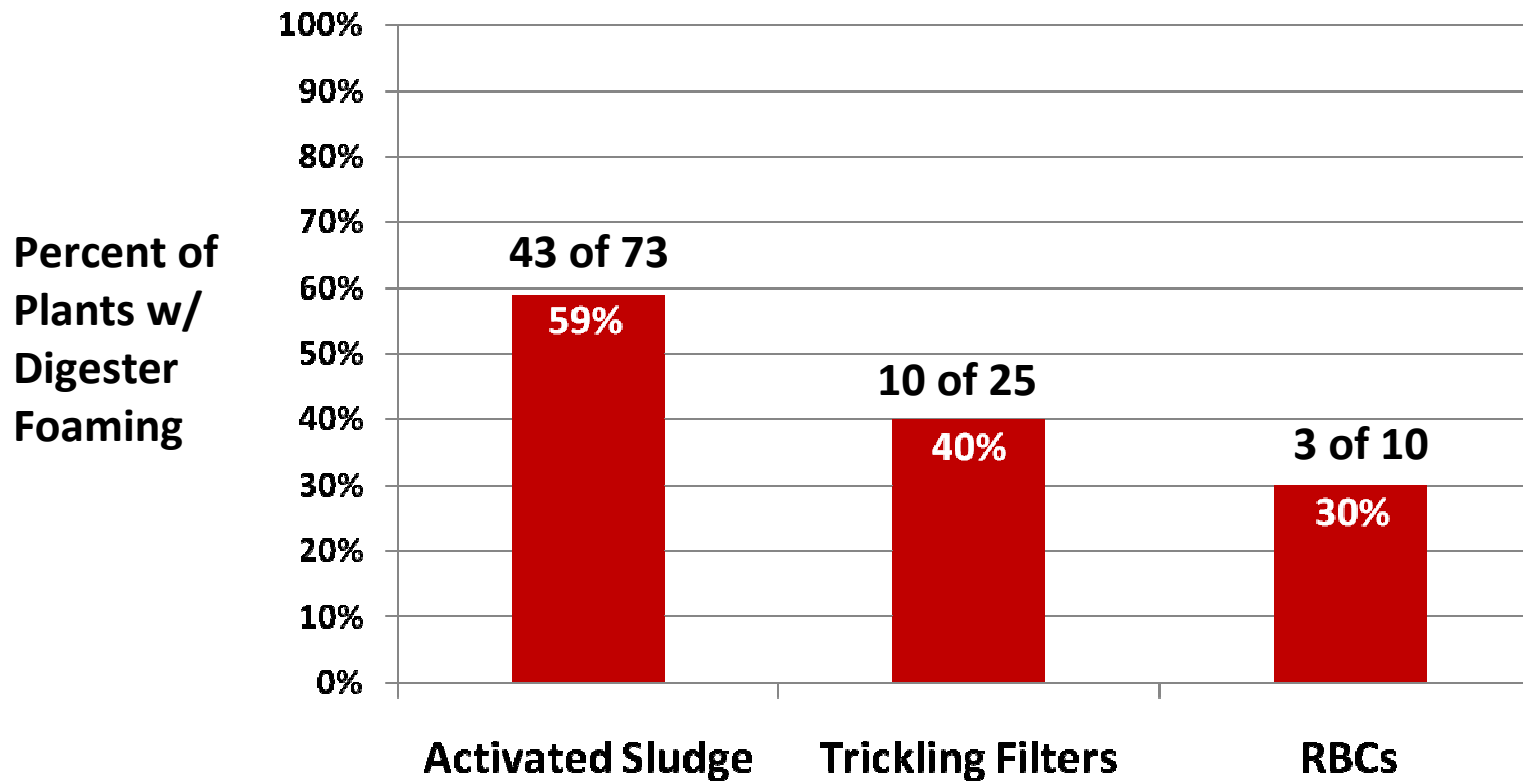
Survey Trends

Size of WWTPs



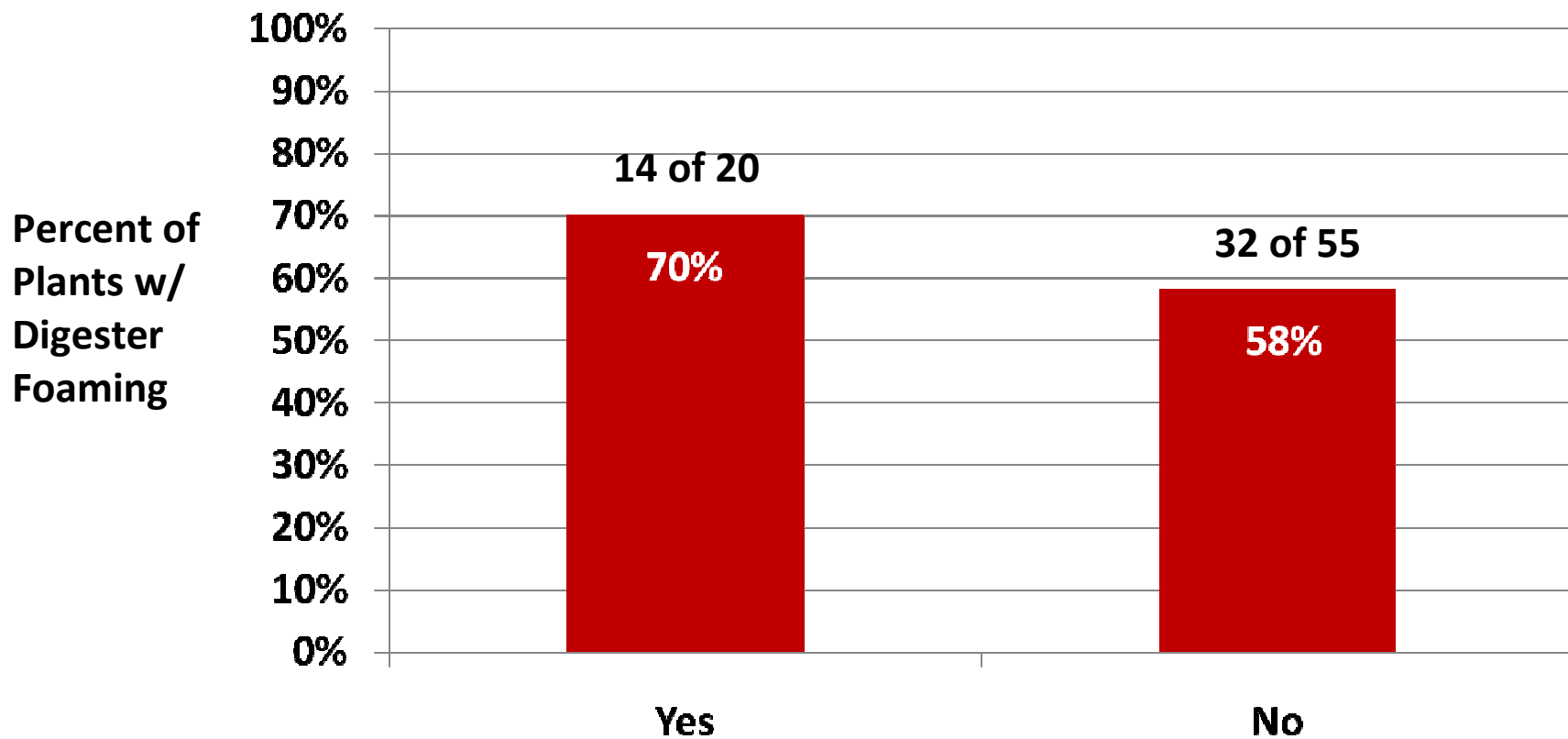
Survey Trends

Type of Biological Treatment



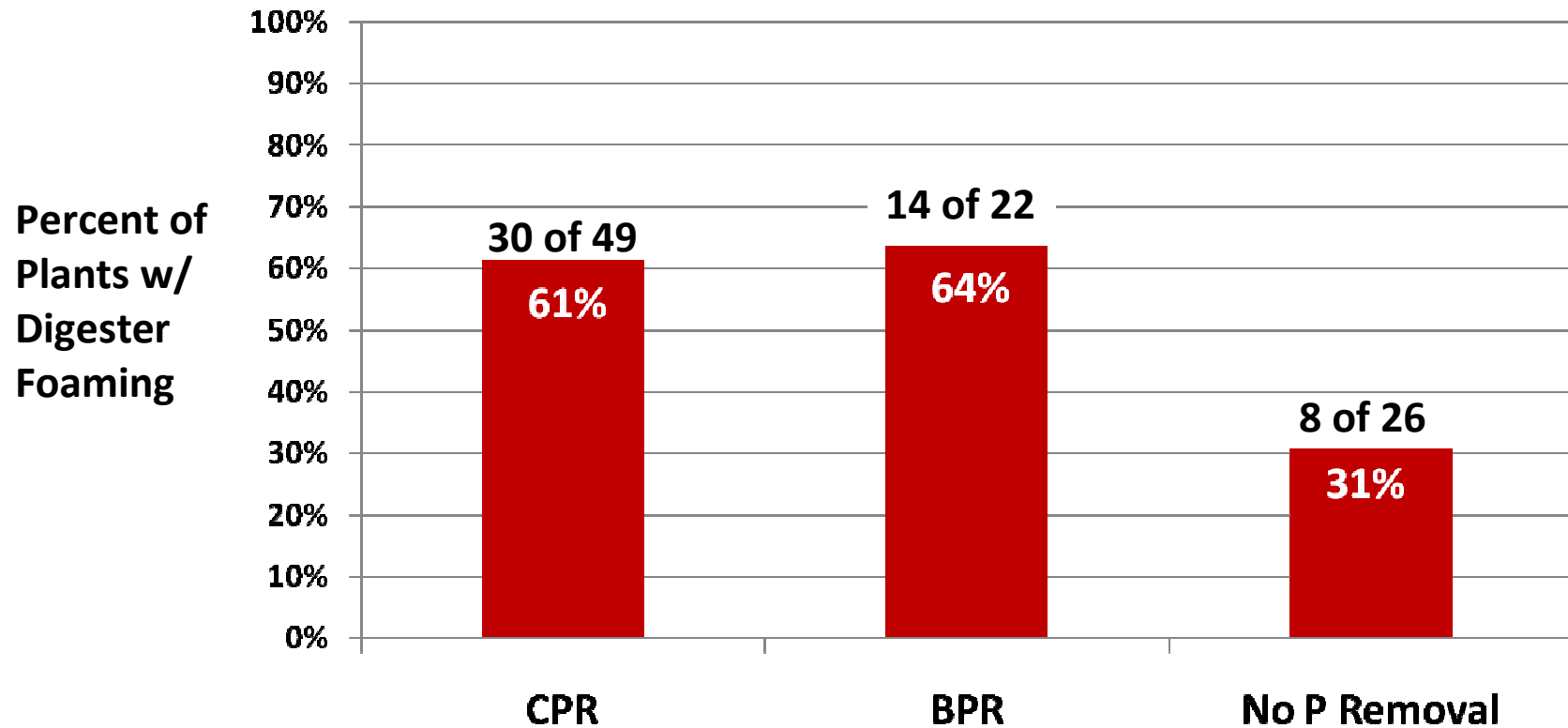
Survey Trends

Foaming in Activated Sludge?



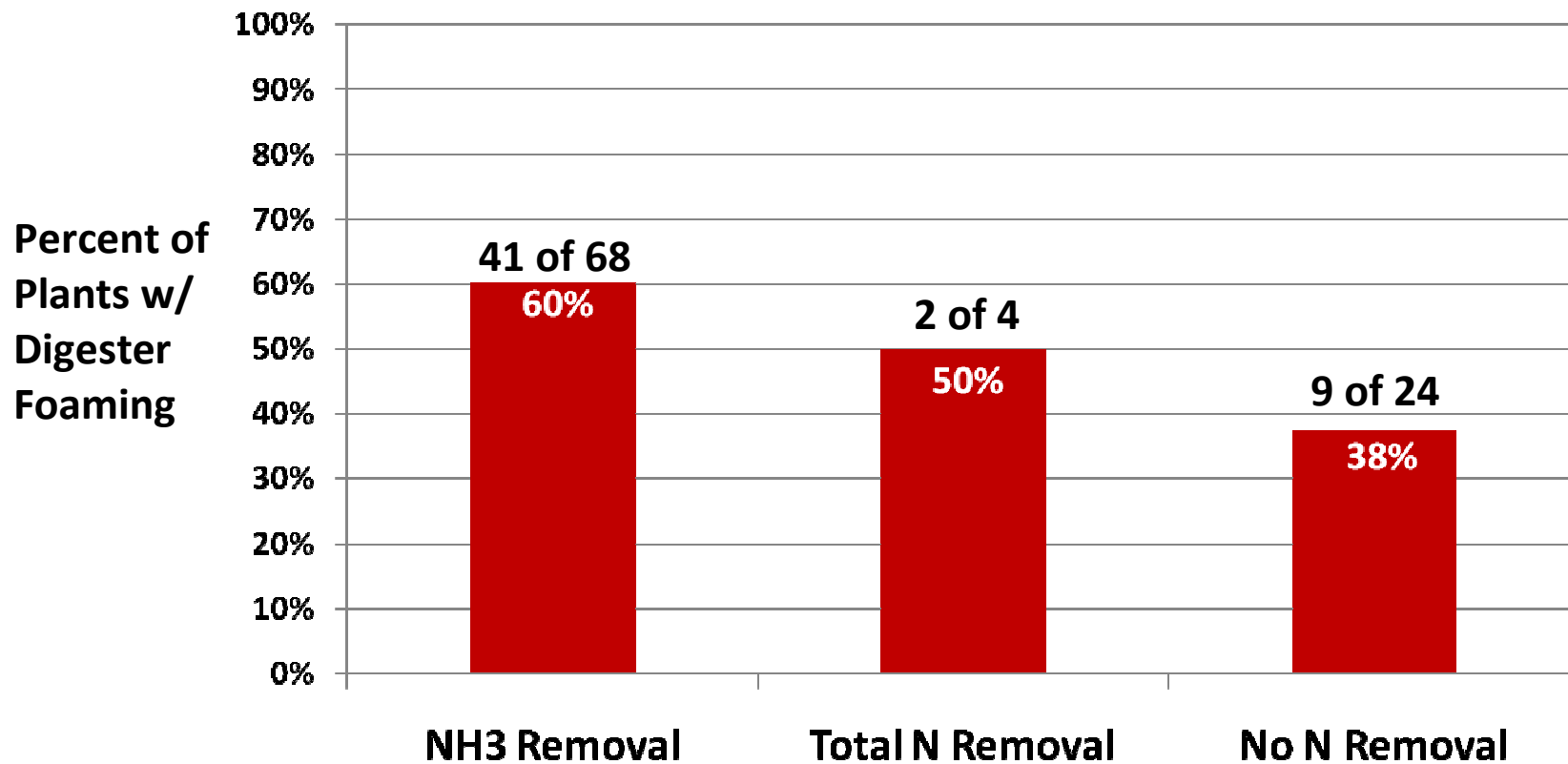
Survey Trends

Phosphorus Removal

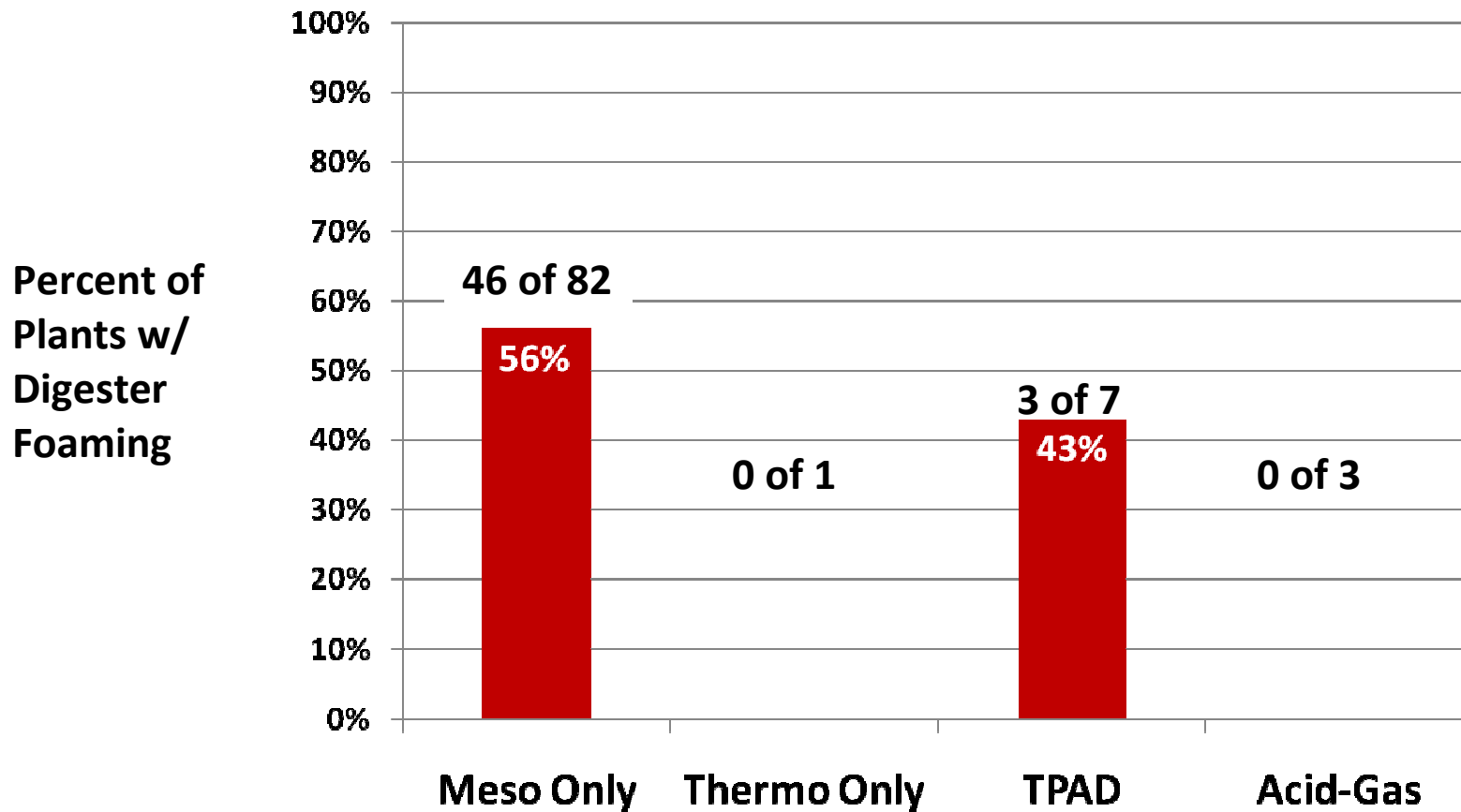


Survey Trends

Nitrogen Removal

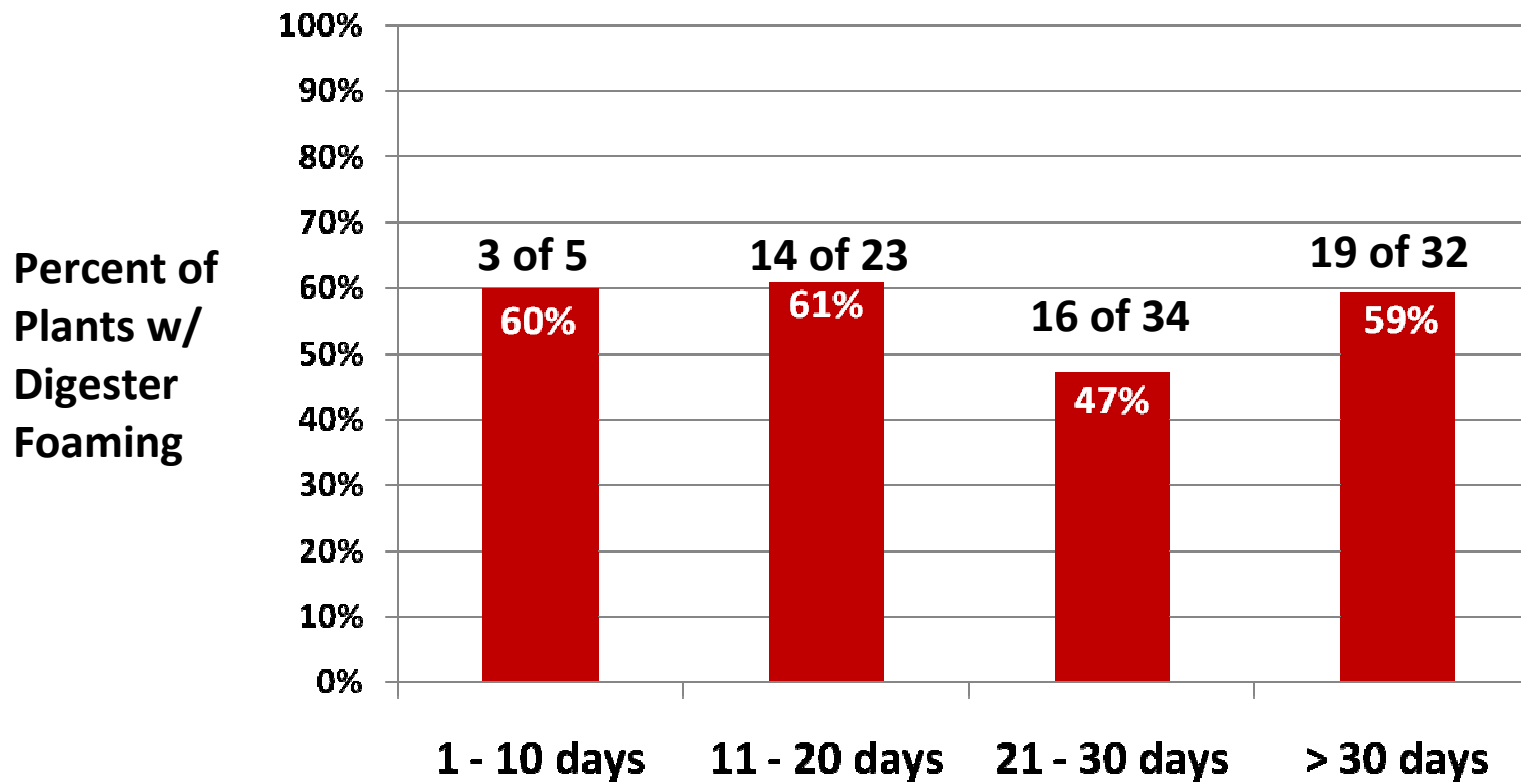


Survey Trends Digestion Process



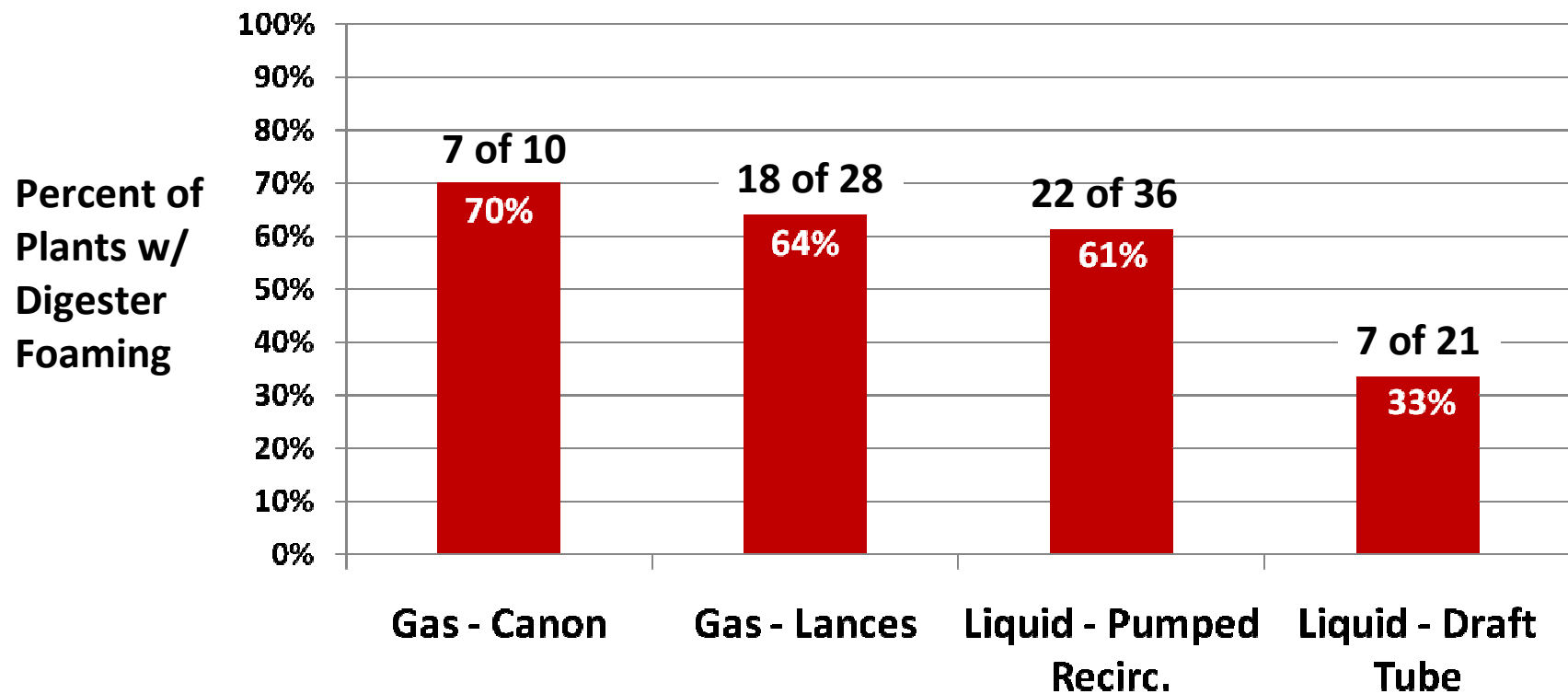
Survey Trends

Digester Detention Time



Survey Trends

Digester Mixing System





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