

# FDA-ISSC Vibrio Studies: Summer 2013

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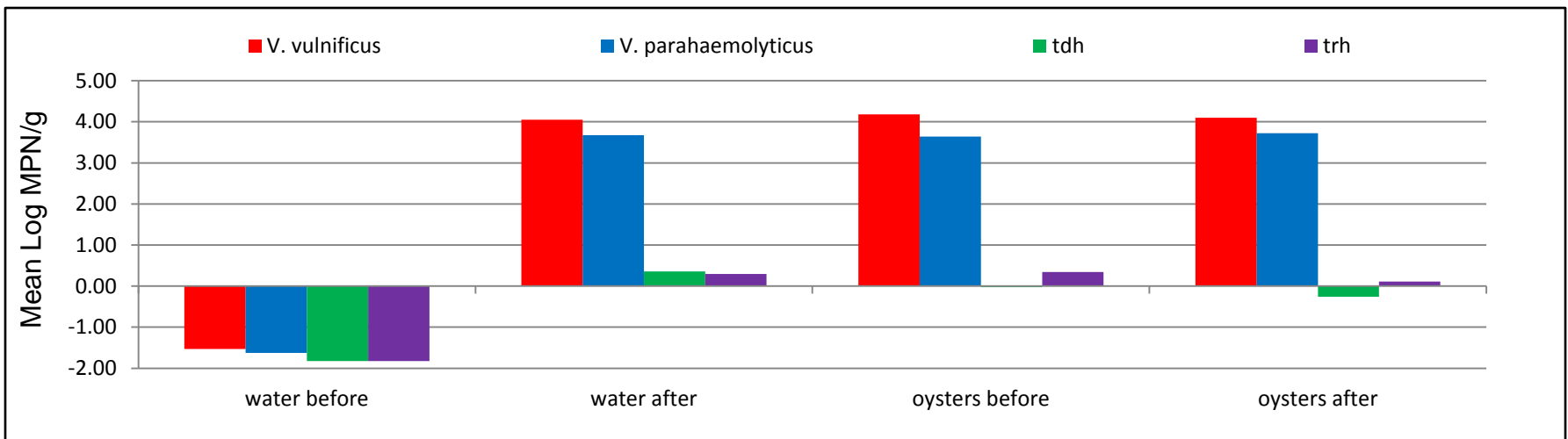
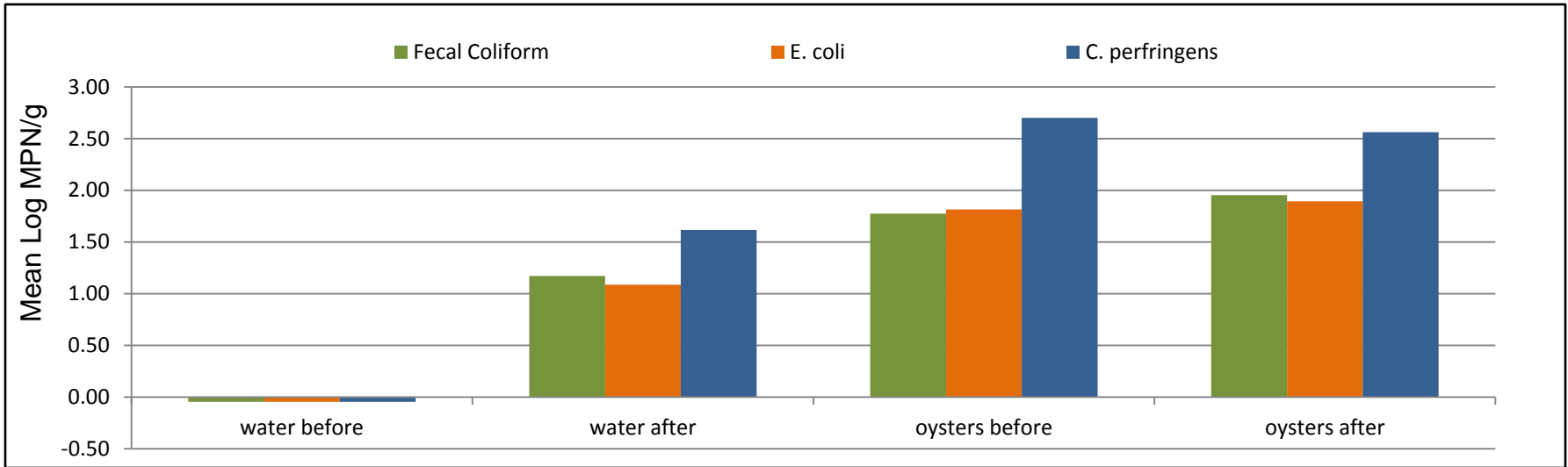
# Vibrio Studies

- Ice Slurry
  - Alabama
- Harvest practices
  - New Jersey
  - Virginia
  - Alabama
- Re-submerging
  - New Jersey (intertidal)
  - Washington (intertidal)
  - Alabama (anti-biofouling practices)

# Vibrio Studies

- Ice Slurry
  - Maintained  $\leq 40^{\circ}\text{F}$
  - Re-used 15-20 times
  - Water and oysters tested before dipping and after 15 min of final set
  - Tested for *V. vulnificus*, and total and pathogenic *V. parahaemolyticus* and fecal coliforms, *E. coli*, and *Clostridium perfringens* (as indicators of filth)

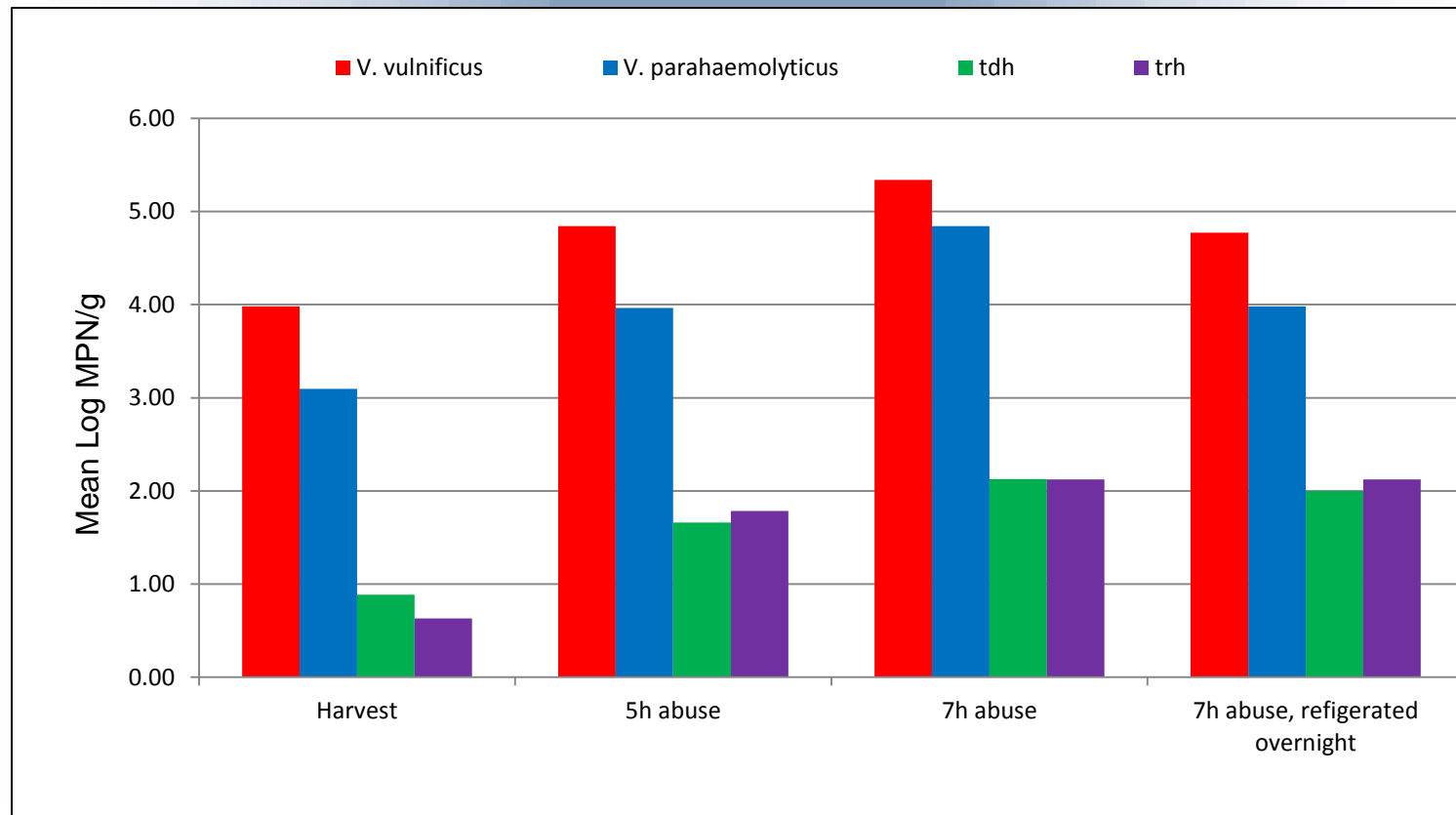
# Ice Slurry Results



# Harvest Practices

- New Jersey
  - Vibrio levels at initial subtidal harvest versus 5h shaded, 7h shaded, and 7h shaded with overnight refrigeration
  - Tested for *V. vulnificus*, total and pathogenic *V. parahaemolyticus*

# Harvest Practices – New Jersey

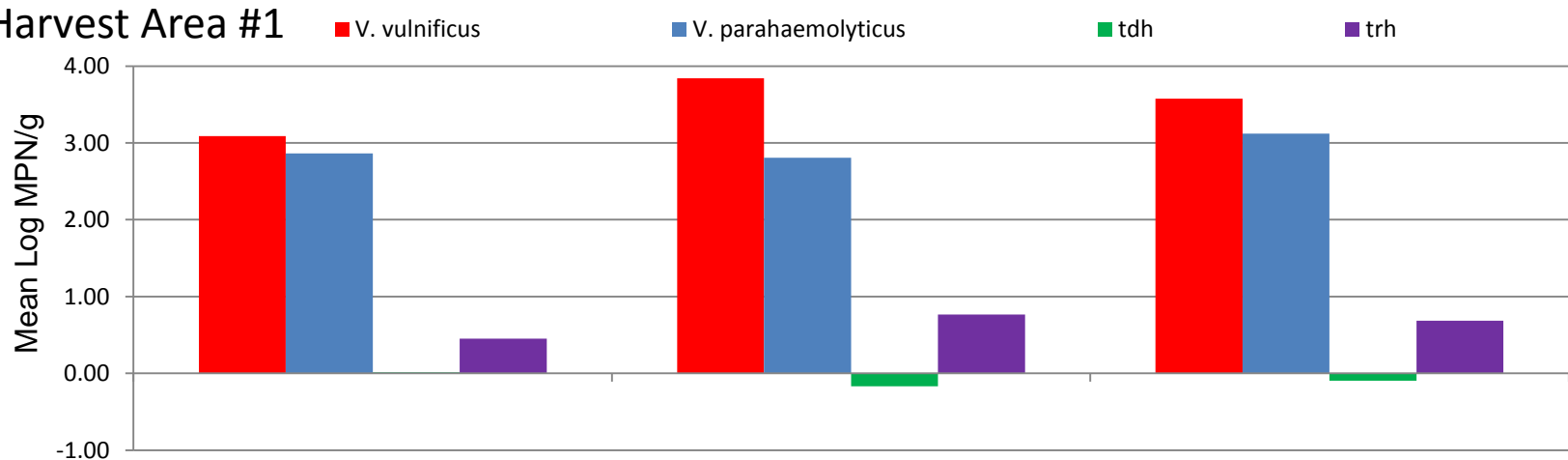


# Harvest Practices

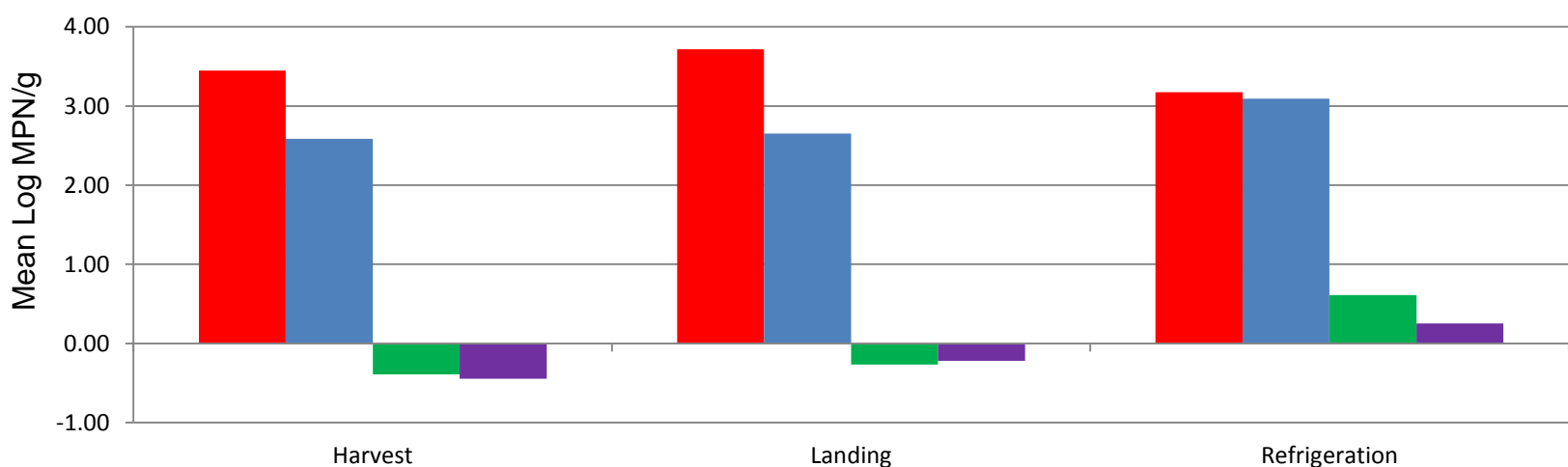
- Virginia
  - Harvest area #1. Vibrio levels at initial harvest versus  $\leq 5$ h ambient (landing) and  $\leq 5$ h ambient with time to internal temperature (refrigeration)
  - Harvest area #2. Vibrio levels at initial harvest versus immediately iced (landing) and time to internal temperature (refrigeration)
  - Tested for *V. vulnificus*, total and pathogenic *V. parahaemolyticus*

# Harvest Practices – Virginia

## Harvest Area #1



## Harvest Area #2

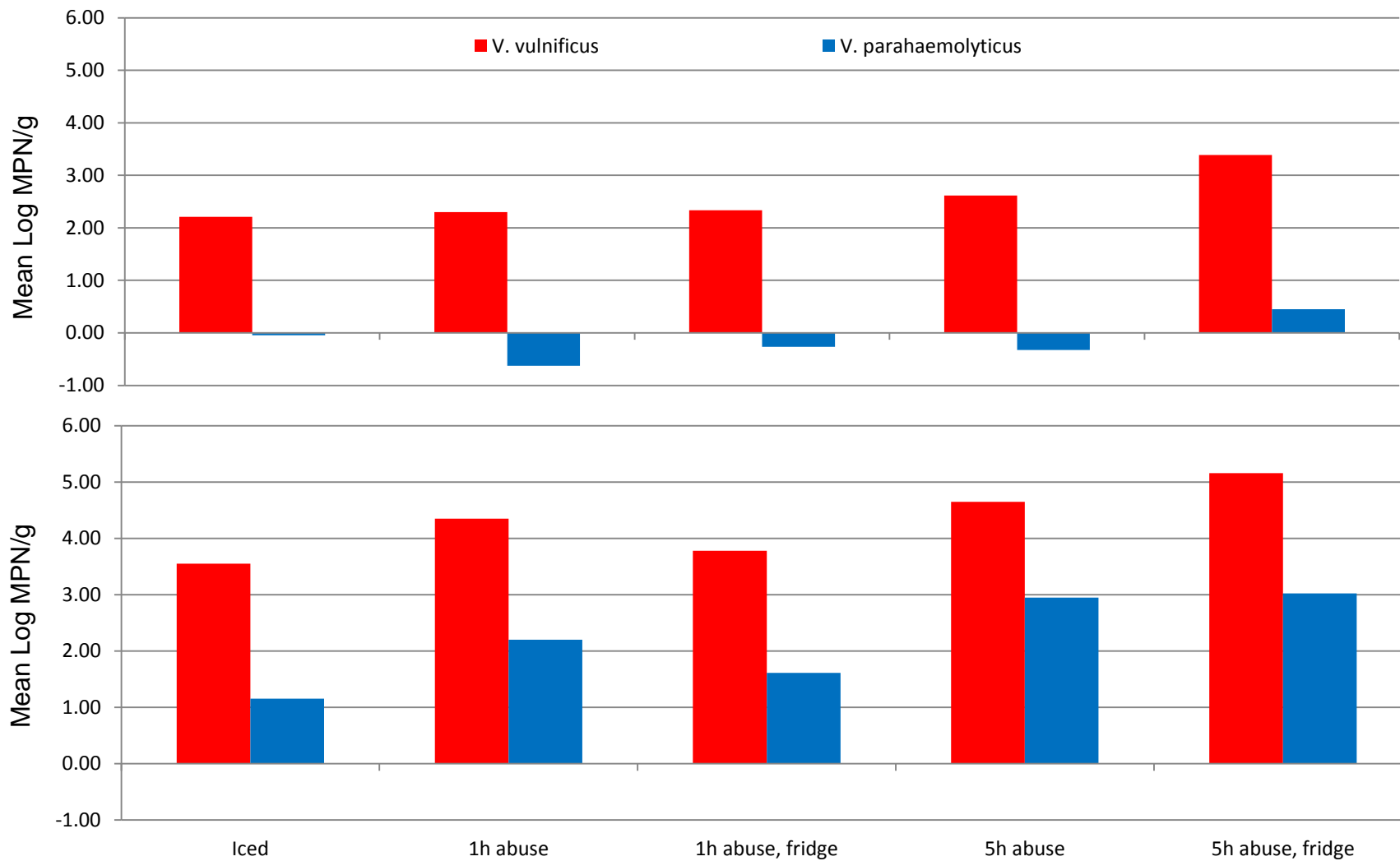




# Harvest Practices

- Alabama
  - Vibrio levels at initial harvest versus after 1h and 5h ambient storage versus subsequent refrigeration (time to temperature)
  - Sampled from two different harvest areas
  - Tested for *V. vulnificus*, total and pathogenic *V. parahaemolyticus*

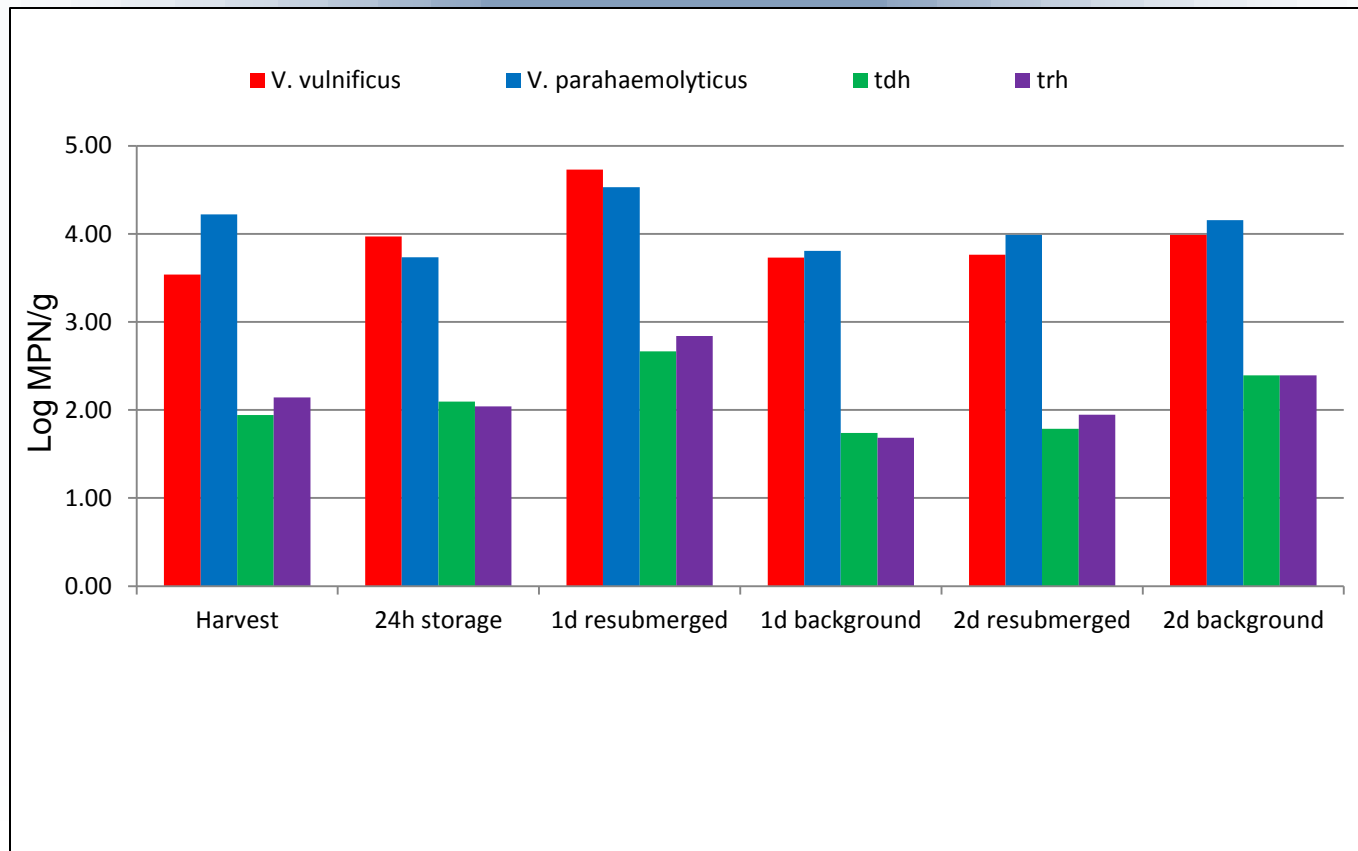
# Harvest Practices – Alabama



# Re-submerging

- New Jersey
  - Vibrio levels at initial intertidal harvest versus after sorting and refrigeration (prior to resubmersion )
  - Compared to resubmerged oysters after one and two tidal cycles versus background levels
  - Tested for *V. vulnificus*, total and pathogenic *V. parahaemolyticus*

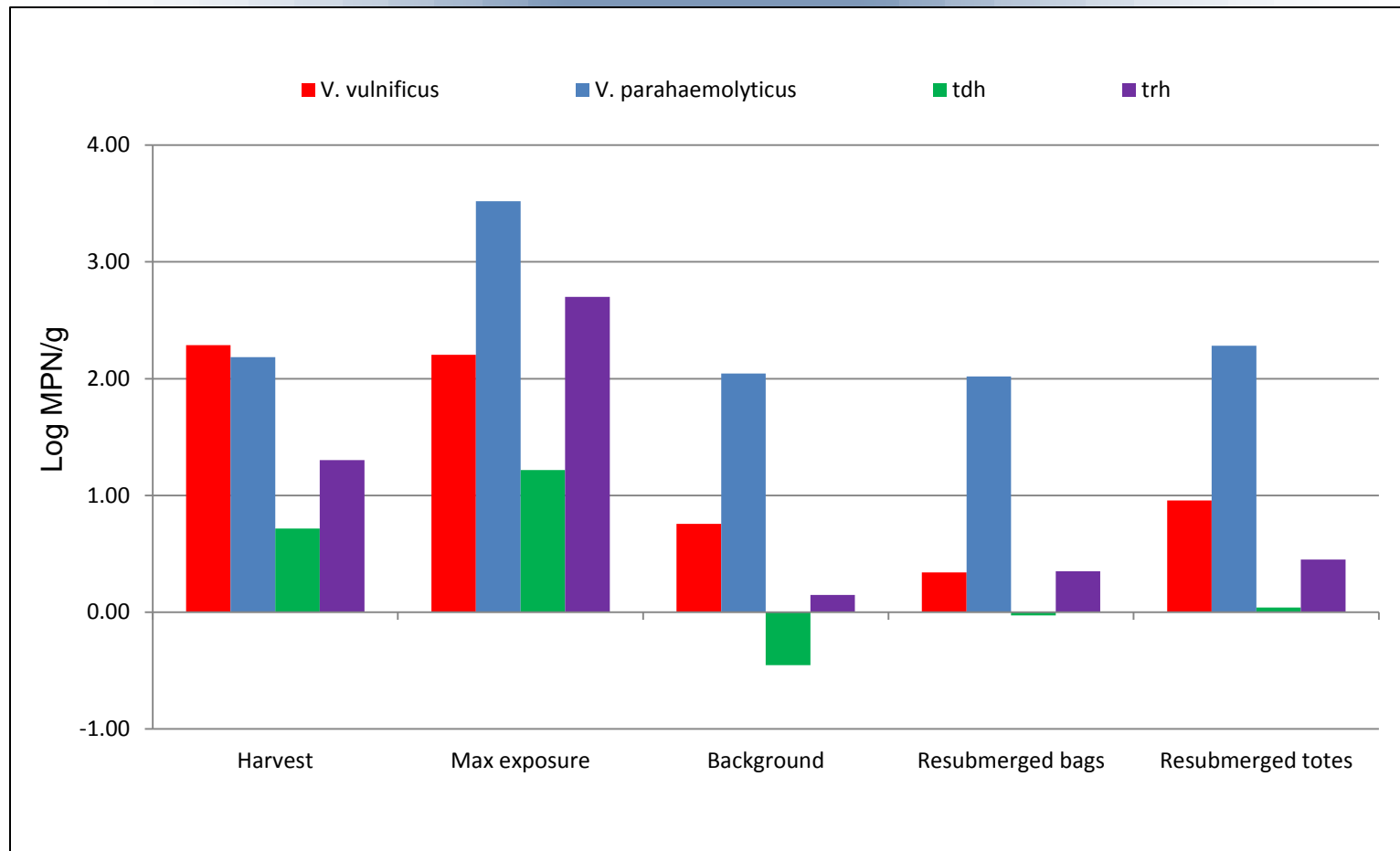
# Re-submerging – New Jersey



# Re-submerging

- Washington
  - Vibrio levels at initial harvest versus maximum intertidal exposure
  - Vibrio levels resubmerged in bags and totes versus background levels
  - Tested for *V. vulnificus*, total and pathogenic *V. parahaemolyticus*

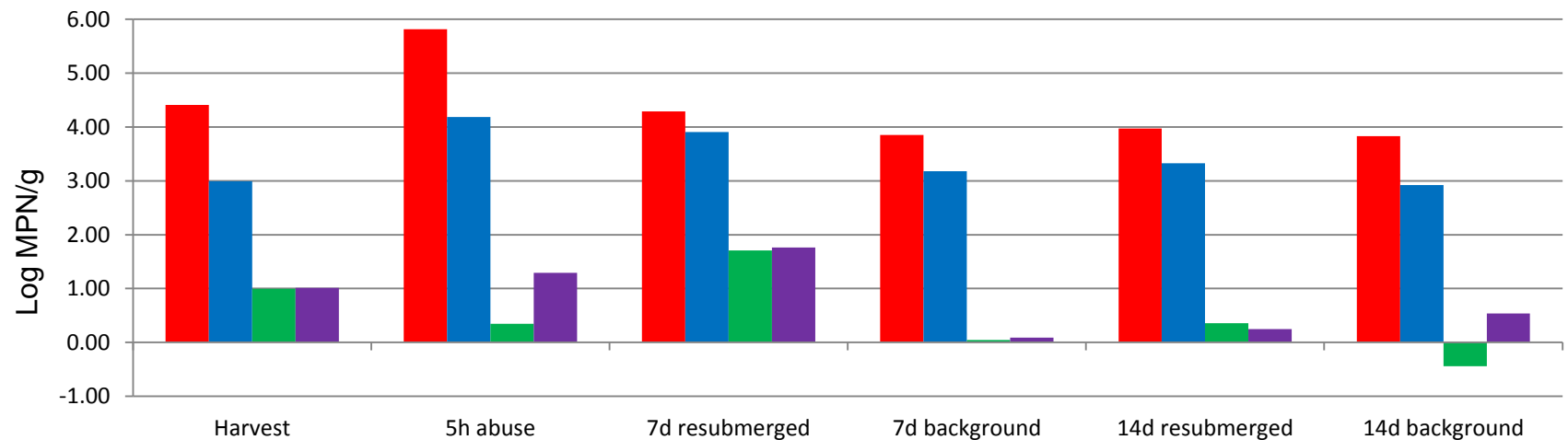
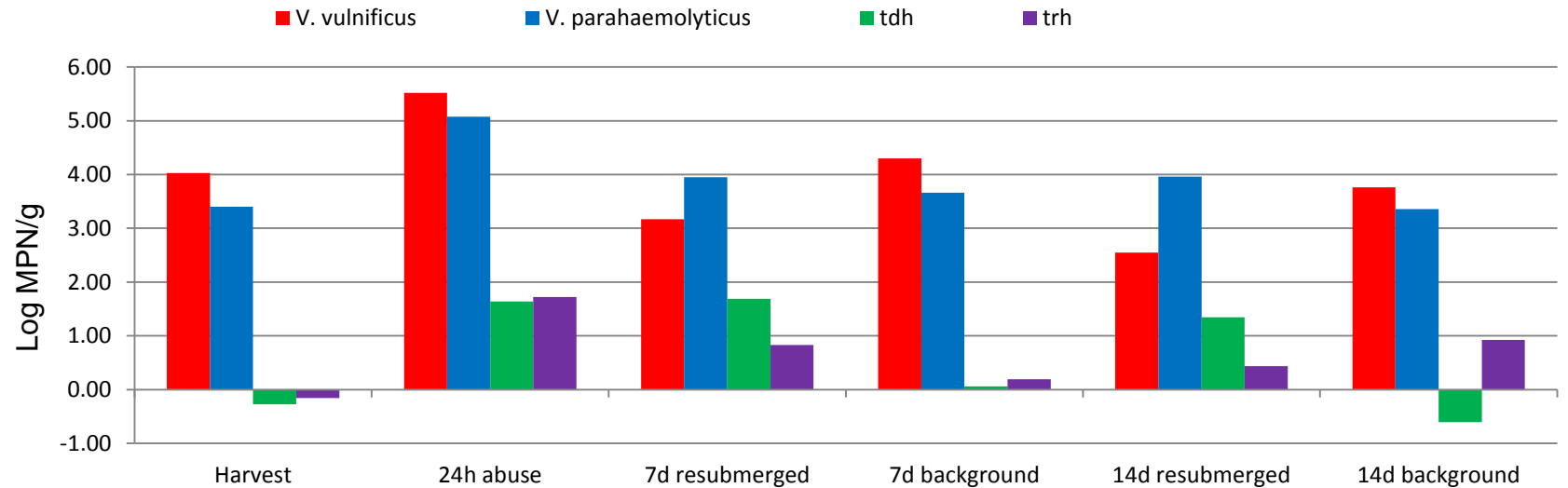
# Re-submerging - Washington



# Re-submerging

- Alabama
  - Vibrio levels at initial harvest versus 5h or 24h ambient air storage
  - Compared to levels resubmerged in baskets after 7 and 14 days versus background levels
  - Tested for *V. vulnificus*, total and pathogenic *V. parahaemolyticus*

# Re-submerging – Alabama





# Summary

- Ice slurry – results indicate no adverse effect of shellfish quality after 15 min dip
- Harvest practices – NJ and VA results indicate 0.5-1 log growth of vibrios post-harvest within 5h, with slight reductions after overnight refrigeration
- Harvest practices – AL results indicate the potential for ~1 log growth of vibrios within 1h of harvest, with continued growth during refrigeration time cool down (allowed ~12h versus the 5h in NJ and VA studies)

# Summary (con't)

- Re-submerging – NJ results indicate re-submerging for 1 tidal cycle increases vibrio levels, but levels return to background after a 2<sup>nd</sup> tidal cycle
- Re-submerging – WA results indicate re-submerging for 1 tidal cycle returns exposed oysters to near background levels, with slightly higher levels in totes versus bags
- Re-submerging – AL results indicate temperature abused oysters return to background vibrio levels within 1-2 weeks

# Acknowledgements

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