

Figure 1. Morning (AM) and late afternoon (PM) pH of Greene Prairie Aquafarm pond water at 30 inches depth during the production season in selected ponds.

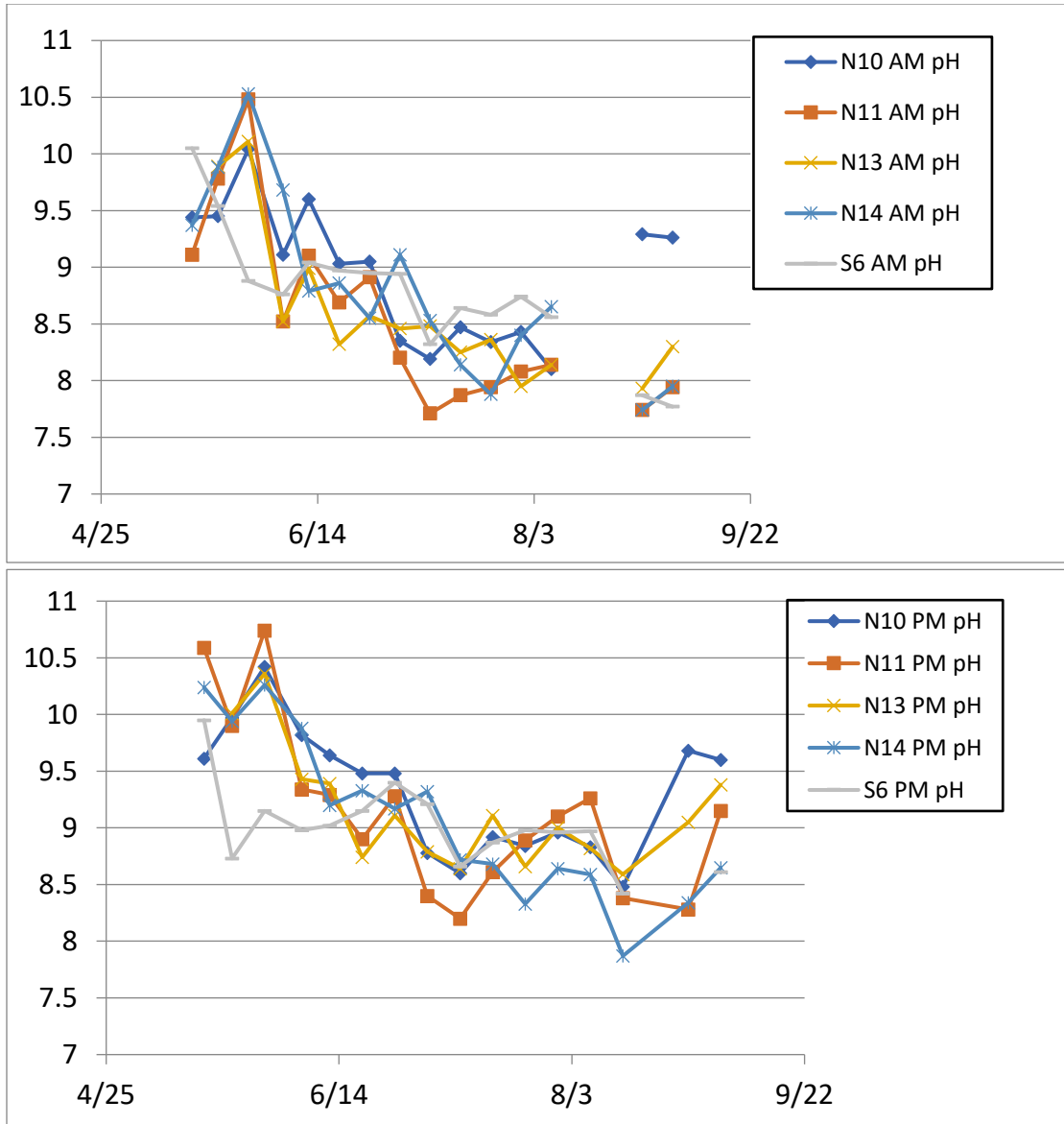


Figure 2. Pond water *Vibrio* counts through time in control ponds and in ponds treated with probiotics on three different farms. No significant differences were observed between control and treated ponds on any of the farms ($P>0.05$).

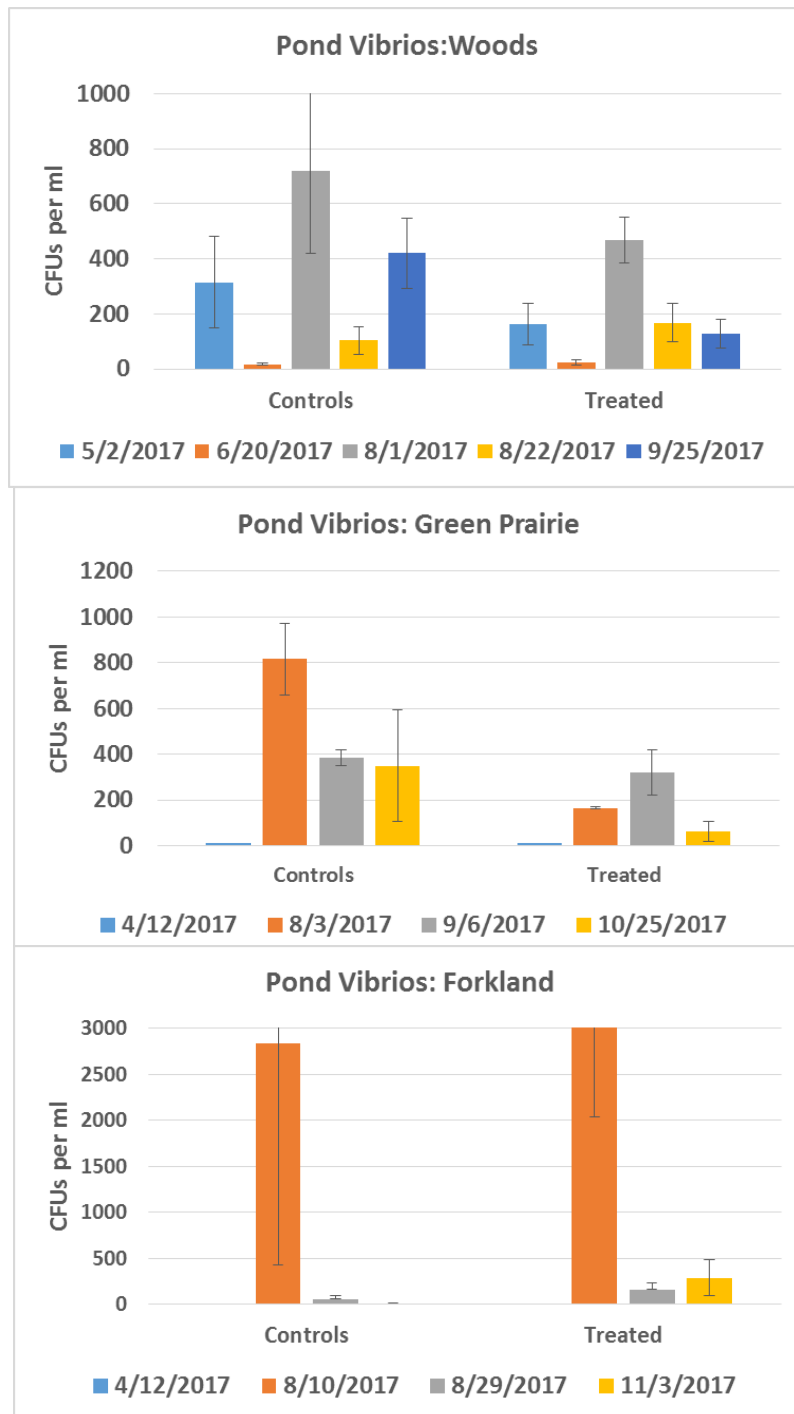


Figure 3. Pond water *Vibrio* type in pond water of three different farms over time in ponds that had been treated with probiotics (Treated) or not treated (Control). The green color represents pathogenic *Vibrio* and the yellow represents non-pathogenic *Vibrio*.

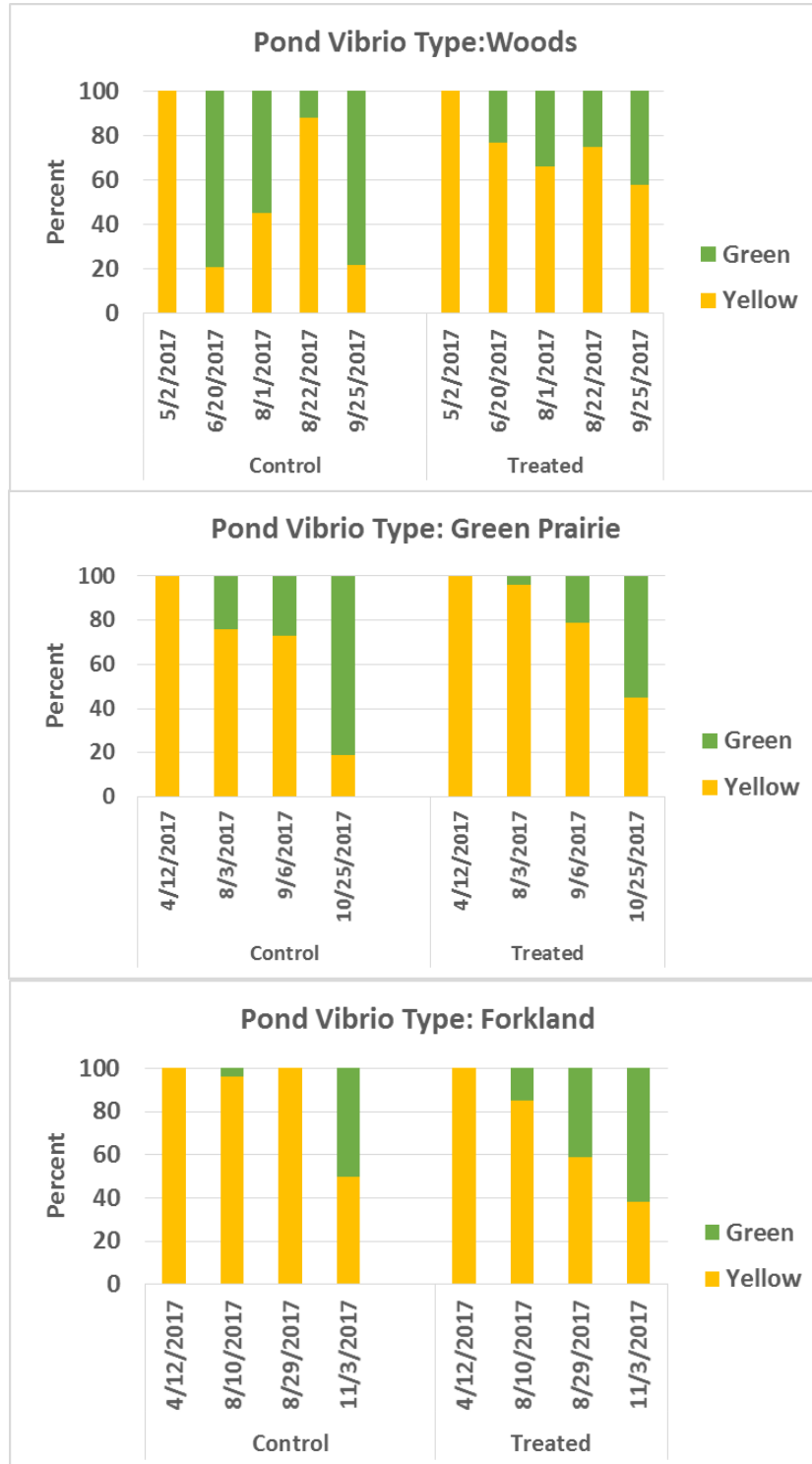


Figure 4. Concentrations of *Vibrio* in shrimp tail meat sampled from ponds treated with probiotics (Treated) or not treated (Control) on three different farms over time.

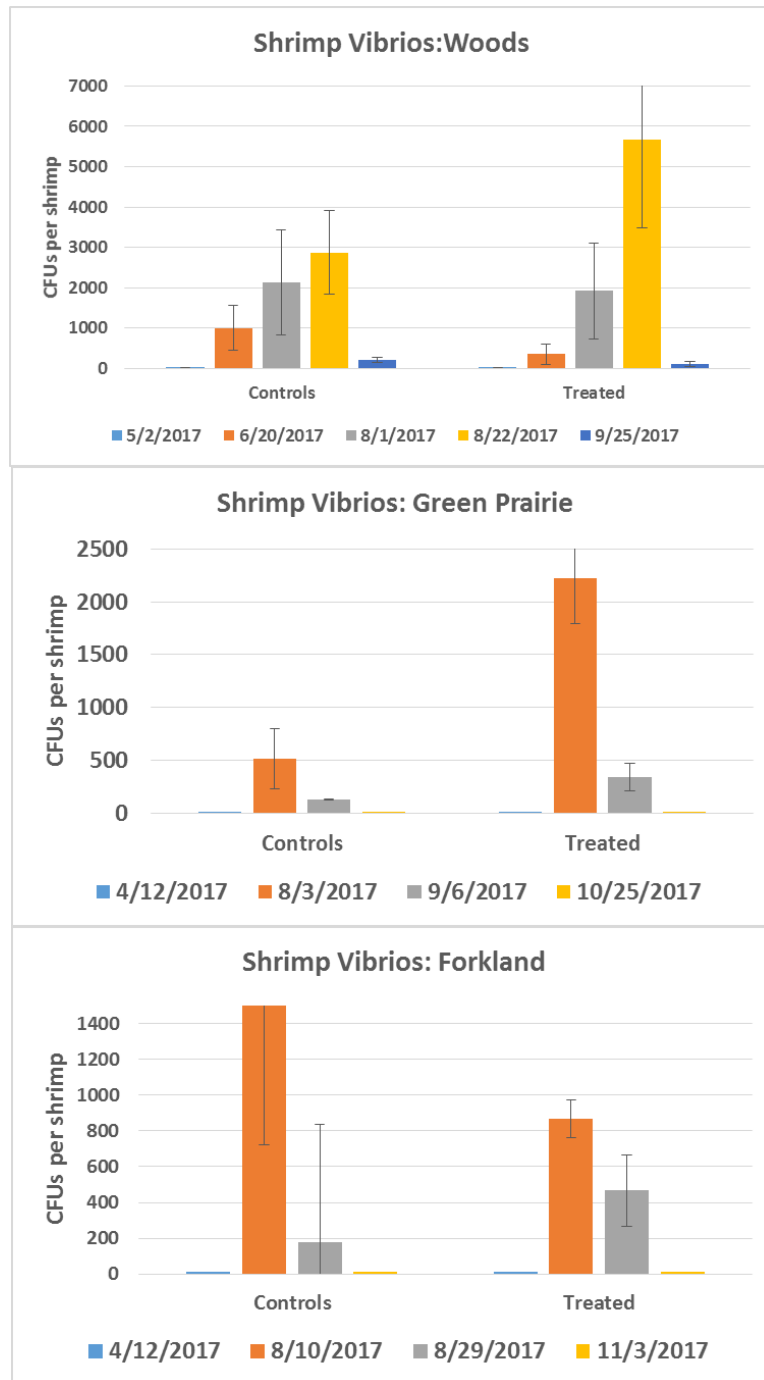
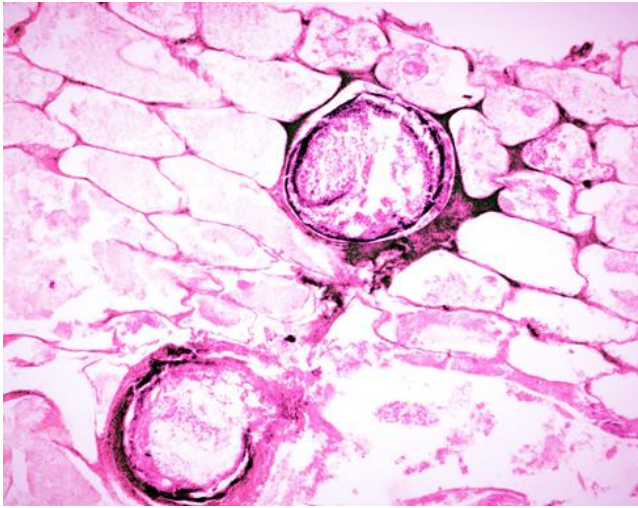
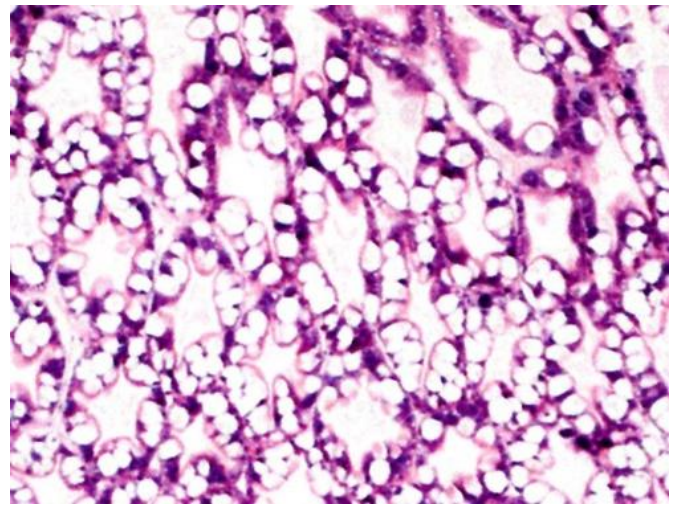


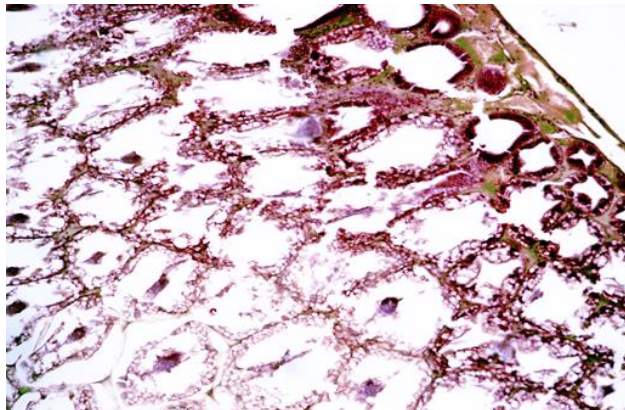
Figure 5. Photos of shrimp hepatopancreous (HP) comparing normal looking tissue to tissue damaged with granulomas, or infected with bacteria or a helminthic parasite.



Granulomas and tissue sloughing in HP



Normal HP for comparison



***Vibrio* infection of HP**



Parasite in HP

Table 1. Mean concentrations (\pm standard deviation) of selected water quality variables in ponds treated with probiotics (Probiotic) or not (Control). Differences between Probiotic and Control ponds on the same farm were not significant ($P > 0.05$).

Farm	Probiotic	Control
Total ammonia-nitrogen (mg/l \pm SD)		
Greene Prairie Aquafarm	0.69 \pm 0.09	0.61 \pm 0.16
Forkland Springs	0.96 \pm 0.21	0.78 \pm 0.19
Gulf American Shrimp	0.052 \pm 0.059	0.065 \pm 0.047
Nitrite-nitrogen (mg/l \pm SD)		
Greene Prairie Aquafarm	0.0744 \pm 0.006	0.0737 \pm 0.005
Forkland Springs	0.12 \pm 0.10	0.17 \pm 0.13
Gulf American Shrimp	0.003 \pm 0.004	0.0193 \pm 0.0322
Salinity (ppt \pm SD)		
Greene Prairie Aquafarm	3.0 \pm 0.45	2.3 \pm 0.15
Forkland Springs	4.5 \pm 0.27	4.5 \pm 0.31
Gulf American Shrimp	3.9 \pm 0.13	3.9 \pm 0.08
Temperature ($^{\circ}$C)		
Greene Prairie Aquafarm	29.6 \pm 0.31	29.7 \pm 0.32
Forkland Springs	29.0 \pm 0.89	29.1 \pm 0.84
Gulf American Shrimp	29.3 \pm 0.80	29.3 \pm 0.81
pH \pm SD		
Greene Prairie Aquafarm	8.98 \pm 0.123	8.93 \pm 0.146
Forkland Springs	8.44 \pm 0.199	8.42 \pm 0.080
Gulf American Shrimp	8.15 \pm 0.446	8.16 \pm 0.435

Table 2. Mean counts (X million) of *Prymnesium*, a golden algae, and *Oscillatoria*, a blue-green algae, in ponds treated with probiotic (Probiotic) or not (Control). Differences between Probiotic and Control ponds on the same farm were not significant ($P > 0.05$).

Farm	Probiotic	Control
<i>Oscillatoria</i>		
Greene Prairie Aquafarm	207.11 ± 152.23	221.55 ± 264.42
Forkland Springs	7.765 ± 2.142	27.791 ± 33.112
<i>Prymnesium</i>		
Greene Prairie Aquafarm	40.37 ± 33.85	46.48 ± 43.28
Forkland Springs	78.517 ± 24.018	118.127 ± 44.399

Table 3. Mean survival and yield of shrimp cultured in ponds treated with probiotic (Probiotic) or not (Control). Differences between Probiotic and Control ponds on the same farm were not significant ($P > 0.05$).

Farm	Probiotic	Control
Survival (% \pm SD)		
Greene Prairie Aquafarm	29.0 \pm 16.1	13.5 \pm 13.0
Forkland Springs	26.0 \pm 25.0	23.0 \pm 3.0
Gulf American Shrimp	20.5 \pm 10.0	11.9 \pm 8.9
Yield (lbs/acre \pm SD)		
Greene Prairie Aquafarm	2177.5 \pm 669.8	1219.8 \pm 823.0
Forkland Springs	1335 \pm 784.0	2061 \pm 1021.0
Gulf American Shrimp	2240.3 \pm 1008.3	1485.3 \pm 1203.1