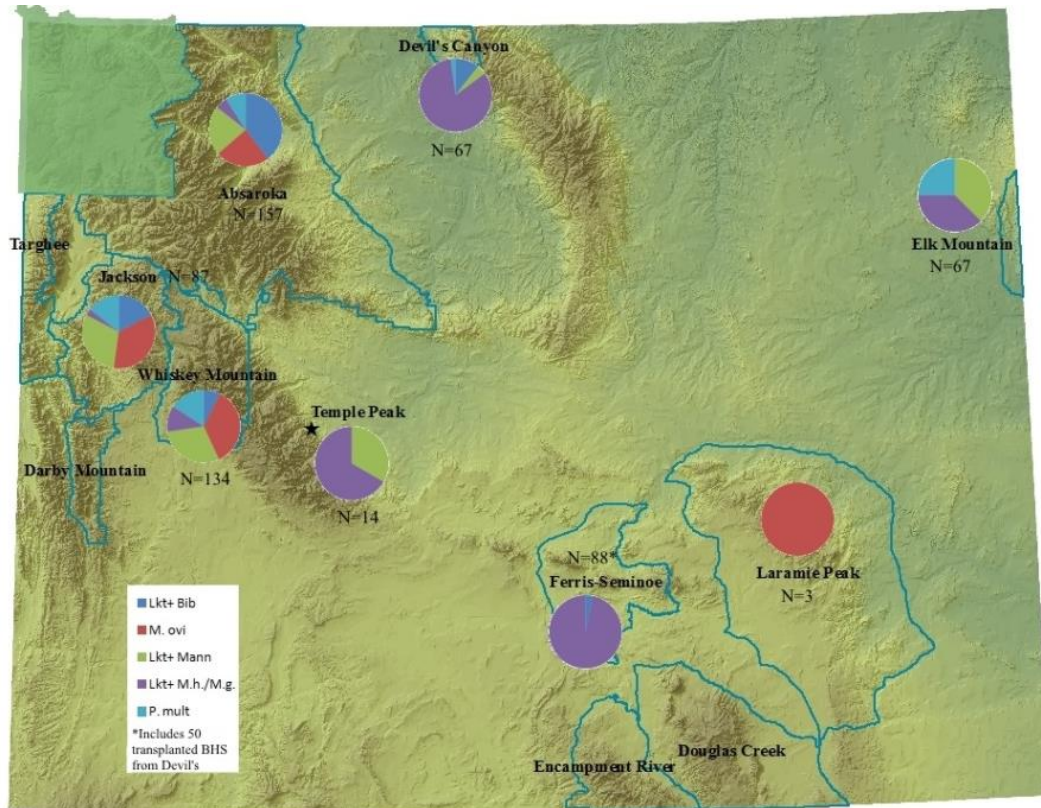


Table 1. The number of *Mannheimia* spp. isolates from each herd, per year. Sampling for 2017 is in progress.

	2012	2013	2014	2015	2016	2017	TOTAL
Absaroka	0	2	4	1	0	2	9
Jackson	5	0	4	0	2	2	13
Whiskey	3	0	2	1	0	1	7

Figure 1. Map of Wyoming and the location of the Absaroka, Jackson, and Whiskey Basin herds that this project will focus on.



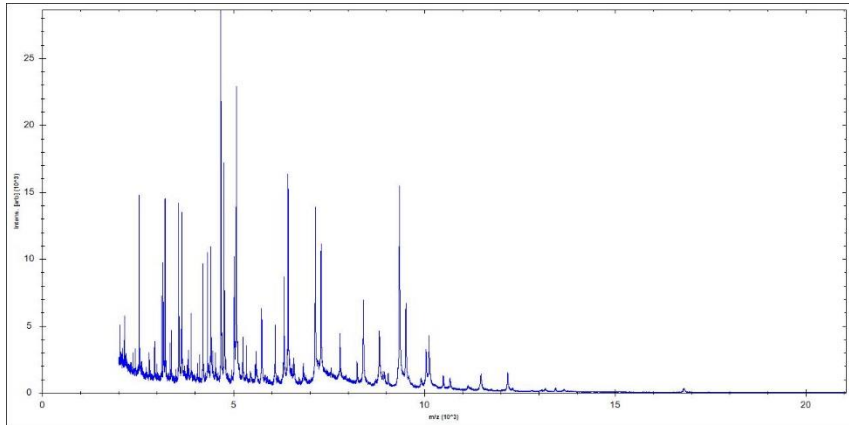


Figure 2. Mass spectrum or “fingerprint” of *Mannheimia hemolytica*. Each peak corresponds to proteins found in this bacterium. Most peaks will be the same within a species, however some peaks may differ, and that will allow us to distinguish genotypes.

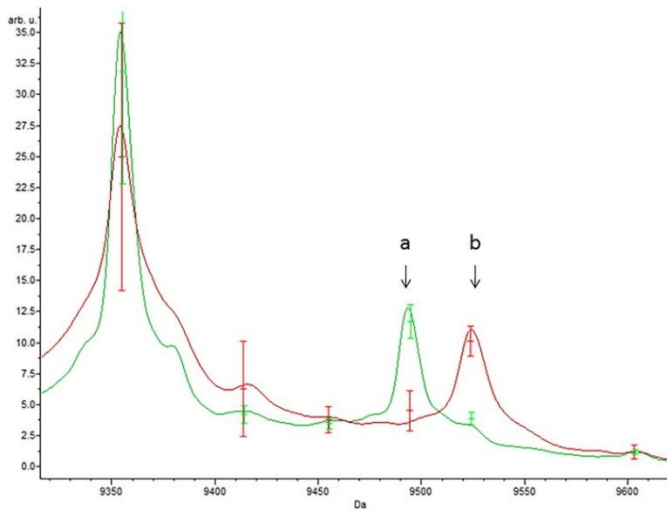


Figure 3. Mass spectrum peaks that differentiate *Mannheimia hemolytica* genotype 1 (red) from genotype 2 (green). Loy and Clawson, 2017.