Fermentation Profile
Target Levels

DAIRYLAND
Laboratories, Inc.

Moisture %	Legume-Mixed Legume Silage 65%+	50-65%	<50%	Grass Silage <70%	Corn Silage 60-65%	HM Corn 25-30%
pH	4.0 - 4.3	4.3 - 4.7	4.7 - 5.0	4.3 - 4.7	3.8 - 4.2	4.0 - 4.5
Lactic Acid	6.0 - 8.0	4.0 - 6.0	2.0 - 4.0	6.0 - 10.0	5.0 - 10.0	1.0 - 2.0
Acetic Acid*	1.0 - 3.0	0.5 - 2.5	0.5 - 2.0	1.0 - 3.0	1.0 - 3.0	<0.5
Propionic Acid	<0.5	<0.25	<0.1	<0.1	<0.1	<0.1
Butyric Acid	<0.5	<0.25	<0.1	<0.1	<0.1	<0.1
Iso-Butryic Acid	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethanol	<1.0	<1.0	<0.5	<1.0	<3.0	<2.0
Methanol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Butanol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1-Propanol	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5
1,2 – Propanediol**	0 - 3.0	0 - 3.0	0 - 3.0	0 - 3.0	0 - 3.0	0 - 3.0
Ammonia – CP (%of CP)	<15.0	<12.0	<10.0	<12.0	<8.0	<10.0
Lactic:Acetic ratio	2+	2.5+	2.5+	2+	3+	3+
Lactic (% of total acids)	60+	70+	70+	60+	70+	70+

Source: 1) Limin Kung Jr., University of Delaware – personal communication
2) Richard E. Muck, U.S. Dairy Forage Research Center, Madison, WI – personal communication

Note: Target levels represent naturally fermented silages or silages treated with fermentation aids such as microbial inoculants and/or enzymes.

*Forages inoculated with *Lactobacillus buchneri* products may result in higher than normal concentrations of acetic acid. Research shows the increased levels do not results in poor fermentations or negative effects on animal intake.

** 1,2- Propanediol is typically <0.25% but can be as high as 3.0% in silages inoculated with *Lactobacillus buchneri.*