

# Multi Time Point Rumen *in situ* Starch Digestion Guidelines for Dairy Cattle

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Revised June, 2020

**Note: The Goal corresponds to the top 15% of samples measured by Rock River Laboratory.**

Feed	<i>in situ</i> Rumen Starch Disappearance			
	Hours	Average	Goal	Low
Corn Silage	0	20 - 30	> 35	< 10
	3	60 - 70	> 80	< 45
	7	70 - 80	> 85	< 65
	16	85 - 95	> 95	< 85
	24	90 - 100	> 95	< 90
Ear Corn/Snaplage	0	40 - 50	> 60	< 30
	3	60 - 70	> 80	< 50
	7	75 - 85	> 90	< 70
	16	85 - 95	> 95	< 85
	24	95 - 100	> 95	< 95
High Moisture Corn	0	35 - 45	> 55	< 25
	3	55 - 60	> 70	< 40
	7	65 - 75	> 80	< 60
	16	80 - 90	> 90	< 80
	24	90 - 95	> 95	< 90
Dry Ground Corn	0	20 - 30	> 30	< 15
	3	30 - 40	> 40	< 30
	7	50 - 60	> 65	< 45
	16	70 - 75	> 80	< 65
	24	85 - 90	> 95	< 85
TMR	0	40 - 50	> 65	< 25
	3	50 - 60	> 70	< 45
	7	60 - 70	> 80	< 65
	16	75 - 85	> 85	< 75
	24	90-100	> 95	<90
Steam Flaked Corn (Wet Chemistry Only)	0	30 - 35	> 50	< 10
	3	NA	NA	NA
	7	60 - 65	> 75	< 45
	16	NA	NA	NA
	24	NA	NA	NA

Feed	Dynamic Starch $k_d$ , % Starch per h; Determined using 3 and 7h in situ SD		
	Average	Goal	Low
<b>Corn Silage</b>	20.0	> 25.0	< 12.5
<b>Earlage /Snaplage</b>	20.0	> 25.0	< 14.5
<b>High Moisture Corn</b>	15.5	> 22.0	< 12.0
<b>Dry ground corn</b>	12.0	> 15.0	< 8.5
<b>TMR</b>	15.0	> 20.0	< 10.0

Our goals and benchmarks were developed using data from our database, data from Heuer (2014) as well as in vivo digestion data summarized by Goeser (2014). The Goals correspond to the top 15% of samples measured through Rock River Laboratory, Inc.

#### References

Heuer, C.R. 2014. MS Thesis, University of Wisconsin – Madison.

Goeser, J.P. 2014. What do the cows have to say about NDF and starch digestion? Proc. 2014 Four State Dairy Nutrition and Management Conference. Dubuque, IA. pg. 47-55.