



LITCHFIELD ANALYTICAL SERVICES

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Feeds Forages Mycotoxins Soils Plant Tissues Manure Fertilizers Lime Water

KSU Particle Size (Micron) Analysis

Interpretation for Swine Diets

<u>Microns</u>	<u>Potential Outcome</u>
< 500	Shown to Cause Ulcers
600 to 800	Optimum
> 800	May not be fully digested

Reference: "Particle Size Target Levels For Swine Diets", Kansas State Univeristy

Interpretation For Dairy Cows

Relative Corn Index (RCI) is an experimental approach to evaluating corn particle size. Determined by multiplying the percent of corn grain on each screen by a constant (1 to 5 starting with the coarsest screen). The finer the corn is processed, the larger the RCI.

<u>Screen</u>	<u>Factor</u>	<u>Coarse Corn</u>		<u>Fine Corn</u>	
		<u>%</u>	<u>Score</u>	<u>%</u>	<u>Score</u>
# 4	1	10	10	0	0
# 8	2	30	60	10	20
#16	3	45	135	40	120
#30	4	10	40	40	160
Pan	5	5	25	10	50

If the RCI is over 350, the starch should be readily available to be fermented in the rumen and could lead to acidosis if the forage is too fine, ration was not fed as a Total Mixed Ration (TMR), or diet contains higher levels of starch. A ration with an RCI below 300 could minimize the risk of rumen acidosis, but limit dry matter intake, rumen fermentation, milk yield, and milk components. No research has been conducted to determine the optimal RCI based on feed intake, forage particle length or starch level.

Reference: Hutjens, M.F. 1999. Ration physical form and rumen health. Four-State Dairy Management Seminar Proceedings. P. 1-3.