

after 10 months of age, such that dietary starch would shocklessly reach its usual high portions around the first periparturient phase. That will minimize early lactation risks of constantly depressed dry matter intake, metabolic disorders (e.g., subacute rumen acidosis, advanced fatty liver, ketosis, laminitis, metritis, mastitis & immune deficiency). Furthermore, effective ruminal and small intestinal adaptation to starch digestion and glucose dynamics may be facilitated by optimizing starch processing techniques [9, 10]. However, this requires more research.

Implication

A prolonged management program for heifers of steady starch feeding from weaning through the first lactation and on is required for healthy and capable starch assimilation and glucose metabolism in dairy cows. Ruminant evolution necessitates such an extended adaptation of rumen fermentation, post-rumen assimilation, and splanchnic metabolism to major starch feeding during lactations. As a rule of thumb, the high levels of dietary starch fed during lactation must be realized quite gradually to not shock the first and second calf heifers and adult cows with sudden overloads of starch, when compared to commercial growing heifer rations with usually quite modest grain starch.

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