

TABLE 1	Evaluation and use of cowside tests for detection of subclinical ketosis in early postpartum cows																	
The chart below provides an example of three different prevalences of subclinical ketosis and how each test would perform under those circumstances. Using the published test characteristics, the number of animals correctly and incorrectly identified by the tests are calculated and a subjective opinion based on those calculations is given.																		
Test	For blood BHB $\geq$ 1.4 mmol/L		Low prevalence (5%), 100 total animals, 5 subclinical cows, 95 normal cows						Moderate prevalence (15%), 100 total animals, 15 subclinical cows, 85 normal cows					High prevalence (30%), 100 total animals, 30 subclinical cows 70 normal cows				
	Ability to correctly identify subclinically ketotic animals from animals with subclinical ketosis (sensitivity)	Ability to correctly identify non-subclinically ketotic animals from animals without subclinical ketosis (specificity)	Number of subclinically ketotic animals correctly identified by the test to treat	% of subclinically ketotic animals missed by test – number of animals missed	Number of non-subclinically ketotic animals treated for ketosis	% of all treated animals that are not subclinically ketotic	Appropriate to use test in this scenario according to author – yes, no, maybe		Number of subclinically ketotic animals correctly identified by the test to treat	% of subclinically ketotic animals missed by test – number of animals missed	Number of non-subclinically ketotic animals treated for ketosis	% of all treated animals that are not subclinically ketotic	Appropriate to use test in this scenario according to author – yes, no, maybe	Number of subclinically ketotic animals correctly identified by the test to treat	% of subclinically ketotic animals missed by test – number of animals missed	Number of non-subclinically ketotic animals treated for ketosis	% of all treated animals that are not subclinically ketotic	Appropriate to use test in this scenario according to author – yes, no, maybe
Milk acetoacetate	41%	99%	2	59% 3 cows	1	33%	Yes		6	59% 9 cows	1	14%	No – too many ketotic cows missed	12	59% 18 cows	1	8%	No – too many ketotic cows missed
Urine acetoacetate at “trace” level	95%	72%	5	5% 0 cows	27	84%	No – almost all treated animals are not ketotic		14	5% 1 cow	24	63%	Maybe	28	5% 2 cows	20	42%	Yes/ Maybe
Milk BHB	89%	77%	4	11% 1 cow	22	85%	No – almost all treated animals are not ketotic		13	11% 2 cows	20	61%	Maybe	27	11% 3 cows	16	37%	Yes/ Maybe
Blood BHB	95%	99%	5	5% 0 cows	1	17%	Yes		14	5% 1 cow	1	7%	Yes	28	5% 2 cows	1	3%	Yes
Testing in series with urine acetoacetate and then blood BHB	90%	99%	4	10% 1 cow	1	20%	Yes		13	10% 2 cows	1	7%	Yes	27	10% 3 cows	1	4%	Yes

Source: J. Carrier et al. (2014), “Evaluation and Use of Three Cowside Tests for Detection of Subclinical Ketosis in Early Postpartum Cows,” *Journal of Dairy Science* (87:3725-3735).