

Scenario 1 - Current dairy production

Score sheet

Name of scorer: Expert 4

30% lameness

Comments

WHEN do they get it? HOW LONG does it last for? WHEN are cows culled? Papers just talk about cows, regardless of age
Yield loss due to lameness is seen more commonly in cows from 2nd lactation onward...'
<https://www.daera-ni.gov.uk/news/lameness-not-so-hidden-cost-dairy-farm>

0.17 of entire herd is early culled that have lameness, affects 50% of their lives
0.25 of entire herd lives to 7 yrs have lameness, affects 71% of their lives

0.08
0.18

0.26 effect on the whole herd and their lifetime

Welfare principles	Welfare criteria							1st round score	90% certain lower bound	90% certain upper bound	2nd round score	90% certain lower bound	90% certain upper bound	Comments
Good feeding	1	Provision and access to food. Animals should have appropriate access to the quantity and quality of appropriate foodstuffs for health and wellbeing.						65	55	70				1st lactation around 2 yrs old? 25% of herd culled after 4-5 years of age. Others might go on to 6-8 years? Mixture of housing as calves/young stock/milking herd. 95% of GB herd have access to pasture at some stage, 65% for 6-9 months I have calculated a 25% effect of lameness at this level across whole herd/lifetime
	2	Provision and access to water. Animals should have appropriate access to the quantity and quality of water for health and wellbeing.						90	80	95	60	50	70	animals have access to food or would die. Variety probably low, but able to graze at some stage in life. That's good for non-lame cows, may be bad for 25% of cow-lifetime that is lame, but clearly they do not get NO food. Cows are often TOO THIN regardless of lameness? High lactation rate to blame?
Good housing	3	Animals should have comfort when resting.						70	60	75			95	Animals have access to water or would die. Access may be restricted to cows with lameness. Water need during housing, not while out at grass??
	4	Animals should have thermal comfort being neither too hot nor too cold.						70	60	80	60	50	70	A million questions over mats, cow stalls etc which I am ignorant of. Needs amending based on experts in group. Worse for cows with lameness as harder to get up and down
	5	Animals should have sufficient space to move freely.						70	50	80	70	60	80	I don't know enough about thermal comfort for cows across seasons, breeds, housing types so this will need amending based on experts in group
Good health	6	Animals should be free from injuries and disorders (e.g. skin conditions, lameness, bone fractures etc.).						65	50	75			70	I haven't considered space allowance for cows here so this will need amending based on experts in group. Some of life is housed, so cannot move freely
	7	Animals should be free from disease, including metabolic conditions, with high standards of health						60	50	70	55	40	70	Lameness would affect 25% of entire herd over lifetime, at this rate by my estimates. Other injuries and disorders I am unaware of
	8	Animals should not suffer pain - for example as a result of poor management, handling, surgical or						65	50	75	50	40	70	Metabolic disease associated with high milk production, poor cow condition scores. Mastitis 50% (https://www.rpsca.org.uk/adviceandwelfare/farm/dairy/keyissues) I couldn't find 25% of lifetime affected by lameness across herd/types of cows/lifespans, plus another 10% for other issues?
Appropriate behaviour	9	Animals should be able to express normal, non-harmful social behaviours (such as grooming and						80	60	85	55	40	70	Lameness would affect 25% of entire herd over lifetime, so cannot control social behaviours as easily. Bullying, herd size may be more important. May be TOO HIGH
	10	Animals should be able to express other normal behaviours (e.g. foraging, exploring).						70	50	80	50	40	60	Most cows have access to pasture at some time in lifetime. When housed, more restricted behaviours. Lameness will restrict behaviour for 25% of herd's lifetime. May be TOO HIGH
	11	Animals should be handled well with positive and not negative animal-human relationships.						70	65	80	60	55	75	Assume this takes up a small proportion of lives. Depends on if handler is one to drive cows along tracks, to parlour? Treating animals when sick, lame? Handling for transport, for slaughter, etc? Handled daily by herdspeople? 2x a day when lactating?
	12	Additional aspects not already adequately covered above in relation to the balance between positive and negative affective states for animals.									60	55		

0.66 is average proportion of lifespan affected by reproductive issues

0.33

Scenario 2 - Dairy production with only 5% lameness score 2/3

Score sheet

Name of scorer: Expert 4

Comments

See calcs other sheet

Welfare principles	Welfare criteria							1st round score	90% certain lower bound	90% certain upper bound	2nd round score	90% certain lower bound	90% certain upper bound	Comments
Good feeding	1	Provision and access to food. Animals should have appropriate access to the quantity and quality of appropriate foodstuffs for health and wellbeing.						80	70	85	75	65	80	Typically it will be (25 % versus 4%) 21% better impact on lifetime in low lameness systems
	2	Provision and access to water. Animals should have appropriate access to the quantity and quality of water for health and wellbeing.						95	85	95	90	80	95	80 Better, but still some bullying at feed face? STILL condition scoring (cows too thin) due to high lactation rate
Good housing	3	Animals should have comfort when resting.						85	75	90	75	65	85	85 Better due to less lame cows?
	4	Animals should have thermal comfort being neither too hot nor too cold.						70	60	80	72	62	82	82 no change? Would less lameness mean they could choose thermal zone easier?
	5	Animals should have sufficient space to move freely.						70	50	80	60	50	70	70 no change, see other sheet
Good health	6	Animals should be free from injuries and disorders (e.g. skin conditions, lameness, bone fractures etc.).						85	70	90	75	60	85	85 Improvement of about 20%?
	7	Animals should be free from disease, including metabolic conditions, with high standards of health care and hygiene.						70	60	80	60	50	70	70 I reasoned that implementing better hoof/track/production care would mean other improvements that affect this score too
	8	Animals should not suffer pain - for example as a result of poor management, handling, surgical or other procedures, slaughter etc.						80	75	85	70	65	75	75 Improvement of about 20%? Would less lameness improve management, handling, but no effect on surgical or other procedures?
Appropriate behaviour	9	Animals should be able to express normal, non-harmful social behaviours (such as grooming and social bonding).						85	75	85	55	45	65	65 Small increase, main cause is still other housing/management factors. Amend accordingly with other score sheet
	10	Animals should be able to express other normal behaviours (e.g. foraging, exploring).						80	60	90	70	60	80	80 Small increase, but bigger increase than social behaviours, main cause is still other housing/management factors. Amend accordingly with other score sheet
	11	Animals should be handled well with positive and not negative animal-human relationships.						75	65	80	65	55	70	70 Less handling required with less lameness? Less likely to be driven?
	12	Additional aspects not already adequately covered above in relation to the balance between positive and negative affective states for animals.												