

REVIEWERS COMMENTS AND RESPONSES OF THE AUTHORS

COMMENTS TO THE AUTHORS

Editor/Chief Editor Landbauforschung

We will accept your manuscript incorporating major revisions based on the comments of the reviewers. So please take into account the reviewers' recommendations to sharpen your position. Please write a short response to each of the reviewers comments. Please follow strictly the instructions for authors. The revised version of your manuscript will be evaluated again by the Chief editor and, if necessary, by the reviewers.

REVISION – RESPONSES OF AUTHORS

Responses to the comments are shown in the shaded boxes

Reviewer # 1:
This article outlines potential solutions to the welfare and ethical problem of low value calves born in dairy herds. I was hoping for some new insights but I didn't find them in this article. The solutions outlined are not new and are outlined at numerous other online sources albeit in this case supported with scientific references.
Author response: thank you for the comments. I have included some discussion on most of these aspects. I have tried to back up opinion with published articles. I have also now included more on the possible solutions.
On-farm euthanasia (by a vet or knacker) is not discussed. Of course most will say that in a low profit margin system this is not economically feasible (at least paying a vet). However this is possibly the most honest, fairest and humane way of dealing with the issue of the 'by-product' calf.
Author response: this is now included.
I would also have liked to see some discussion of the fact that while bobby calves are not ethically acceptable, protecting calf welfare on-farm for 4-5 days before being sent for slaughter is surely more achievable than holding low value animals on farms for 4 weeks before sale into a 'high risk to welfare' dairy beef scheme.
Author response: I don't believe that all dairy beef schemes are high risk. I have seen some very good farms, particularly where integrated systems between rearer groups and retailers are involved. They need regulation and good standards of care, and this is outlined in the article.
So in general while the authors indicate at the outset that they would consider the animal welfare viewpoint and the ethical viewpoint I don't think the implications (pros/cons) of each option have been thoroughly evaluated in this context.

Author response: This arguments have been made more clearly at the end of the presentation of each section.

There should also be some discussion of the fact that any solution is likely to involve a mix of the options provided. Also it would be interesting to discuss systems in which dual purpose cows produce higher value males (indeed the section on dairy calf to beef needs to include mention of the beef genetic merit of the cows). This would overcome some of the threats to calf welfare while being held on the dairy farm.

Author response: This has been covered more clearly. A discussion of the use of beef bulls has also been added.

I would have liked to see some mention of the issue of sustainability of the different solutions offered too.

Author response: a consideration of economic sustainability is included. However, due to the word-count limits of this paper, a full consideration of environmental sustainability could not be included.

Finally going back to the bobby calf option, measurement of animal based welfare outcomes at ante and post mortem combined with feedback to the farmer (to inform health and welfare management on farm) or used as a means of issuing infringements/prosecutions could help protect the welfare of bobby calves. This option is obviously ethically 'distasteful' but again I would argue that it offers less of a risk to calf welfare if combined with such protective measures.

Author response: this is a good point and has been added.

Comments on strength and weaknesses of the paper and on possible improvements

The article is well written and I don't have any grammatical or language related edits to recommend.

I really feel that the topic requires a more in-depth detailed discussion of the solutions and that it could be contextualised better in terms of the chain of events (policy driven, the true price of cheap food etc.) that have led us to this point in dairying where we have calves in the same situation as male layer chicks.

Author response: I have rearranged the order of the sections so that the chain of events for each calf is better presented, and is separated from the solutions. I agree about the discussion of the consequences for cheap food, but the word count limit (10,000 characters) is a constraint. I have mentioned it.

Reviewer # 2:

Recommendation

I would not publish the paper as it is now. I would advise the authors to have a more clear focus, now the text mixes management practices that have already been banned (new legislation) weaknesses that need to be addressed. **I have made comments and suggestions in the attached file** and I also have comments here:

Author response: Thank you for the comments. I agree that the structure was not ideal. I have reordered it to show the problem, then explained what routes and endpoints calves might follow in different countries/rearing systems and discussed the problems with each and the discussed the solutions. I hope this makes more sense.

Responses to comments in the attached file are included in that document.
<u>General comments</u> The manuscript deals with a very important topic and it is important to initiate discussions with well based arguments. I think the sustainability aspect is missing in the paper. The waste of male calves (slaughter in farm) is a loss from the food system. Also, cows that produce both milk and meat (calves for beef) have a better carbon footprint and resource use than beef cows, since the footprint of maintenance feeding (and leakage of nutrients + methane emissions) can be allocated on more food (milk + meat instead of only meat).
Author response: this is indeed an important aspect to consider. However, there is quite a restrictive word count on this paper (10,000 chars), so it is beyond the scope to consider it in this paper fully. I have included aspects of the economic argument where possible
Poor management on the origin farm of bobby calves should be moved to earlier in the text, or taken out.
Author response: amended as suggested
I find the section on Veal production much better written (more precise and more concise) than lines 7-46.
Author response: The sections have been rewritten and reordered.
The UK is mentioned on lines 15-16 and 72 but elsewhere in the text geography is not specified. This needs to be dealt with to make the text correct for readers from different countries.
Author response: there is now a more detailed description of the different uses of calves in different countries and in different systems.
I do not think that the increased interest seen in the UK in rearing bull calves is a perfect example, unless the text is intended for UK readers? In the Scandinavian countries there are no bobby calves, in contrary male calves from dairy farms have a good market value. They are either finished on the origin farm or stay there until legislation allows transport or stay for the duration of the milk feeding period. The buyer is often a farmer specialized in finishing dairy (and dairy cross) calves for beef.
Author response: As above, there is a more detailed discussion of the differences between countries.
The authors are unclear in the use of the terms “ethics, ethically” and welfare. This has to be addressed and handled more strictly than it is now.
Author response: this has been amended

[Added by Editor as both the following further suggestions of Reviewer #2 and the responses of author were made directly in the original manuscript PDF; only spelling corrections are left out]

Reviewer # 2 (incorporated in PDF document)

Line 18–19: I think the paper would be stronger if sustainability also is included as an argument. The resources put into the new born calf are wasted if that calf does not go into the food system. Although the carcass may be go into a biogas plant or a heat production system (burning) that is not a reasonable use of biomass (feed needed for the pregnancy could have been used as fuel instead of going into a fetus).

Author response: I have included economic sustainability in this article. However, there is a word limti which means that a consideration of environmental aspects are beyond the scope of this article unfortunately

Line 19–20: There are several definition of animal welfare. For me, the paper would gain from a

reference for the definition of animal welfare. Also, I struggle to understand how this is an animal welfare issue? The calf does not suffer from being dead?

Author response: I have provided a definition of welfare and clarified the position in regards to ethics vs. welfare with calf euthanasia

Line 29, (de Vries et al., 2008): I suggest this section is rewritten and possibly also shortened. I do not see a reason for explaining the "old news" to the reader. It could instead be turned around, by starting with the advances in technologies for separating x and y sperm (Vishwanath & Moreno, 2018) have improved pregnancy rates with sexed semen and that this therefore should be a more attractive solution in the future.

Author response: The article has been rearrange to outline the basic problem, the routes of the calves in different systems and the viewpoints to be considered. The line on traditional veal crates has been taken out

Perceptions still exist that there is low fertility with sexed semen so it is worth restating. However, I have reduced this section. Certainly, it is not available for all bulls

Line 32–33: Only if fewer cows are inseminated (longer calving intervals) or some cows are bred with beef breed semen.

Author response: True -amended and a discussion of the use of beef sires added

Line 55–57: I suggest this is taken out as it is a practice from the past that should not influence future solutions.

Author response: Amended as suggested

Line 85: This sounds very strange and is not my experience. Can you rephrase? "Feeding colostrum is a recommended herd management practice to ensure that each individual gets sufficient colostrum intake." It is done because it is faster and easier to feed all calves than to monitor suckling!

Author response: This part has been removed as probably not entirely relevant

Line 87–90: The authors should specify what country this refers to.

Author response: Added - UK and Ireland

Line 102–102: Is this a comparison between healthy dairy calves? I find the "three times higher" very unlikely!

Author response: I checked the reference: this is what they report. However, it was in the first 14 days which makes more sense

Line 122 ff. The conclusions are well written.

Author response: Thank you!

Line 124, "ethically": See previous comment on ethically opposed

Author response: Amended as per previous comment

FINAL ACCEPT

Editor/Chief-Editor Landbauforschung

Landbauforschung: Accept (minor rev.)

We are pleased to inform you that **we've accepted your revised manuscript "Position Paper: What to do with surplus dairy calves?"**, which you submitted to Landbauforschung – *Journal of Sustainable and Organic Agricultural Systems*.

There are only few suggestions by the two reviewers left, please find them below. Please clarify and correct these points.

Reviewer # 1

I checked through the paper and am very happy that all of my suggestions were incorporated. I made a few small insertions and corrections which I hope can be considered. I think it is particularly important to mention that issues around calves entering veal production systems are exacerbated by live shipping in the case of Ireland. The paper now offers a very well rounded outline of the problem and a comprehensive discussion of the solutions. Well done to the authors!

[Added by Editor as the following further suggestions of Reviewer #1 were made directly in the revised manuscript PDF; only spelling corrections are left out]

Reviewer # 1 (incorporated in PDF document)

Description of the problem, 3rd paragraph: or shipped overseas into veal production systems (as is the case in Ireland).

Veal calves, 1st paragraph: However, dairy production systems in which calves are shipped over seas to enter veal production on the continent, as in the case of Ireland, are likely to have greater difficulties gaining consumer acceptance.