EurSafe News

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Dear EurSafe members,

It is my pleasure to send you the summer issue of the EurSafe Newsletter 2023, whose focus lies on current biotechnological developments.
The introduction and rise of CIRSPR and other genome editing methods have given new impetus to biotechnology and the hopes and promises related with it. As with the first wave of genetic engineering in the 1980s and 1990s, CRISPR is promoted with various speculative applications. Indeed, the application potential is huge, and it concerns not only the medical context in the human realm, but also plant and animal breeding.

The use of metaphors such as 'gene scissors', 'genome surgery' or 'editing' shape the discourse and it is often not obvious whether these metaphors stem from scientists, science communications offices or marketing offices of the industry. Especially in the interaction with proposal lyrics for research funding or attention economy of the media it is not clear anymore, when these metaphors have a scientific function, e.g. to illustrate and explain complex matters, or when they promote exaggerated expectations.

The consultation of expert reports is one tool to promote a differentiated discussion and provide a realistic assessment of the opportunities and risks of new genetic engineering for ecosystems, plants, animals and humans. In this newsletter two of them, which are related to genome editing, will be presented.

EurSafe

Ariane Willemsen – EurSafe Board member and managing director of the Swiss Federal Ethics Committee on Non-Human Biotechnology (ECNH) – will present the results of the ECNH expert report's *Climate change, agriculture and the role of biotechnology*. When creating the report, the ECNH consulted also Teea Kortetmäki to examine ethical issues that arise at the intersection of climate change, climate action and agriculture.

In the second contribution, Christian Dürnberger and Herwig Grimm reflect on a subject that has hardly been dealt with, genome editing and gene therapy in veterinary medicine.

In our conference and calls sections, you will find some EurSafe related events.

With this issue we hope to continue the tradition of presenting up- to-date information on the wide variety of topics that are relevant for the EurSafe community. If you want to contribute to the EurSafe Newsletter, don't hesitate to contact one of the members of the editorial board.

Samuel Camenzind
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paper

Climate change, agriculture and the role of biotechnology

Report of the Swiss Federal Ethics Committee on Non-Human Biotechnology ECNH

Ariane Willemsen for the ECNH

In October 2022 the Swiss Federal Ethics Committee on Non-Human Biotechnology ECNH presented a report on the role biotechnology with regard to mitigation and adaptation in agriculture.

Climatic transformations linked to the changing climate are already causing harm, and scenarios entailing further damage on a massive scale are set to play out. The damage scenarios range from major social and cultural upheavals through to hunger, suffering and death. In short, they pose a fundamental threat to humans, animals and the environment. At a global level, some scientific models suggest that the earth will warm by an average of 5 °C or more by the end of the century, unless appropriate countermeasures are taken. For Switzerland, it is currently assumed that, without additional climate change mitigation measures, temperatures will be 3.3 to 5.4 °C warmer by the end of the 21st century than they are today.

In the Paris Agreement, Switzerland made a commitment under international law to achieve the 1.5 °C target and the net zero target. Despite the vagueness of the wording in the Paris Agreement, the ECNH considers them to be ethically binding. Accordingly, Switzerland must make an appropriate contribution to limiting global warming. 'Appropriate' may imply that Switzerland must do more than other countries, in line with its capabilities, because it can do so and because the damage scenarios if the target is not met are unacceptable. At the same time, food security in Switzerland and globally must be safeguarded in the long term.

Switzerland's Long-Term Climate Strategy sets a target of cutting greenhouse gas (GHG) emissions from agriculture by at least 40 % by 2050. As a minimum target, this is significantly lower than in all other relevant sectors. This gives agriculture a special status that can be ethically justified only if a greater

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reduction is neither technically possible nor politically feasible.

The Swiss agricultural sector currently emits around 14 % of the GHG imputed to Switzerland under the Paris Agreement originating from livestock farming and the cultivation of agricultural land. Owing to the territorial principle of the Paris Agreement, the 14 % figure does not include the cultivation of animal feed or the manufacture of mineral fertilisers abroad. Emissions generated after outputs leave the farm are also not ascribed to agriculture, but to other sectors. Against this backdrop, the question as to the justification for the special status of agricultural production becomes all the more urgent while bearing in mind that reducing emissions to zero will not be possible due to the inherent way in which agriculture operates and that technically possible reductions must not endanger food security.

The Swiss climate strategy relies on being able to fully offset these remaining emissions from agricultural production using negative emissions technologies (NETs). Techniques for producing negative emissions are still in the development phase. They must be effective long-term, within the timeframe and on the scale required, environmentally sound and socially acceptable. In this regard, there are justified reservations about NETs. In particular, it is questionable whether they can be developed and implemented quickly enough and whether they will be sufficiently effective. In view of the uncertainty associated with NETs, the overall mitigation process should be designed in such a way that the smallest possible amount of GHG emissions has to be offset using these technologies. Therefore, there is no getting away from the need to significantly reduce the number of livestock globally and nationally. The import of animal feed should be abandoned and the cultivation of feed in Switzerland reduced substantially. The aim should be for livestock farming to be largely grassland-based. Instead, more plant-based food should be produced for human consumption. The currently formulated minimum target for agriculture of a 40 % cut in GHG emissions by 2050 cannot be ethically justified and should be tightened.

In terms of adapting to climate change, measures must be taken in a way that national and global food security is safeguarded as far as possible in the short and long term. One goal of adaptation must be to find or develop crops and cultivation methods that can cope with climatic volatility, i.e. the unpredictable alternation of extremely dry and exceptionally wet conditions. The *clear majority* are sceptical about the ability of genetic engineering approaches (such as CRISPR-Cas) to make relevant contributions to the adaptation of agriculture within the required time frame. Relying on them, promoting them and permitting them even in simplified processes if need be, and potentially accepting path dependencies, on the grounds of the urgency of the climate goals, is something that the majority consider ethically not justifiable. The *minority*, while assuming that this approach can only be part of the solution, believe that these techniques should be adopted and promoted. All members agree that, in view of the associated uncertainty and the short time available, this technology – provided that its risks are acceptable – should be used in such a way that no path dependencies arise. Biotechnology processes may not able to fulfil the hopes and expectations that are sometimes placed in them. Alternative approaches must always be pursued, and in such a way that there remains as realistic a chance as possible of achieving the climate targets.

The ECNH's report can be downloaded from the committee's website: ww.ekah.ch. (The report is available in English, German, French and Italian.)
For preparation the ECNH consulted various experts from different fields of science and administration and commissioned an external report by Teea Kortetmäki (University of Jyväskylä and member of the EurSafe board). This report can also be downloaded: Teea Kortetmäki (2022), Agriculture and Climate Change. Ethical Considerations.

paper

Editing instead of treating? Gene therapy in veterinary medicine

Christian Dürnberger and Herwig Grimm

Christian Dürnberger
Photo: Thomas Suchuanek

Herwig Grimm
Photo: Michael Bernkopf

So-called genome editing techniques (in the following: GET) such as CRISPR/Cas are about to significantly change certain areas of life – that is the promise of proponents and the fear of critics. What do the new methods mean for veterinary medicine? And how are the techniques to be evaluated from an ethical perspective? The Swiss Federal Ethics Committee on Non-Human Biotechnology (ECNH) commissioned an expert opinion on these questions. Selective results of this German-language study (which was published under the title 'Genome Editing und Gentherapie in der Veterinärmedizin' and is available for download on the ECNH website) are presented in the following.

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The use of GET in animals is an extremely young field of research. Accordingly, there is not only a lack of in-depth ethical literature but also a lack of societal debate. Against this background, the authors of the expert report conducted an online study addressing researchers working on GET in the field of human-animal relationships: Where do these researchers see potentials and risks? Which scenarios do they consider morally desirable? Which ones do they reject? The study had a qualitative, explorative character, so it does not make representative statements. Thirty researchers in German-speaking countries were invited to participate in the online survey; thirteen accepted this invitation. All participants work at veterinary universities.

Insofar as veterinary medicine takes place in different contexts with divergent moral infrastructures, the survey distinguished specific GET applications in five areas, namely in (a) clinic, (b) livestock husbandry, (c) laboratory, (d) wildlife as well as the context that sees (e) animals as disease vectors. In the clinical field – and only this area is taken as an example in this present text – the focus is on the health and welfare of the animal patient. Thus, action should be taken in the presumed 'best interest' of the patient.

The participants of the online survey were asked which scenarios around GET they consider morally desirable in this context – and which not. What do they consider to be possible GET-best-case scenarios? And what are GET-worst-case scenarios? The answers can be read in detail in the report – including a lot of verbatim quotations and examples. In this contribution to the newsletter, a brief summary in abstract form must suffice:

Best-case scenarios: the new methods enable...
A: ... new therapies for previously incurable or barely treatable diseases.
B: ... improved disease resistance. This leads e.g. to a reduction in the use of medications.
C: ... the correction of hereditary genetic defects.
D: ... the breeding of companion animals that do not cause allergies or are fundamentally better adapted to human needs.

Worst-case scenario: the new methods...
A: ... are used for phenotypic changes in companion animals without considering animal welfare or knowing the consequences of the intervention.

An initial ethical assessment could therefore be consistently positive, since GET have the potential to spare animals suffering. Now, one might argue, this is hardly surprising; after all, researchers were interviewed who work with these methods or have expertise in this field. However, if one does not fundamentally reject gene therapies with GET, there are in principle – even beyond the perspective of the interviewed researchers – good reasons to use them for therapeutic purposes in animals in order to contribute to animal welfare and health. Here, the question of gene therapy follows the common moral setting of the context 'clinic', which is based on the presumed 'best interest' of the patient.

At the same time, the question arises to what extent the new procedures contribute to the stabilization of a dynamic that the expert opinion describes as 'xenonomy'. By 'xenonomy', the authors understand an attitude towards animals that makes animals the subject of external determination in the perception, treatment and shaping of the human-animal relationship. In particular, the distinction between *existing* and *future* animals can stimulate reflection: For future animals, the perspective of the ethical reflection has to be extended since in their context it is not (only) about the question if individual patients should be helped, but which kinds of human-animal-relationship we can consider legitimate and responsible. Therefore, we need to ask what contribution GET can make to morally desirable or problematic human-animal relationships and, in particular, whether morally problematic tendencies in these relationships can be reinforced or mitigated by GET. There is a strong argument against using gene therapies on future animals to address problems that arise in areas of practice (e.g., breeding) that focus on human needs and address animals as means to satisfy human interests, as in the case of aesthetic preferences (e.g. pug, French bulldog). Here, the gene therapy correction of certain breeding and its problems with the help of GET (but also without) becomes the stabilizer of an instrumentalization that does not consider

animals for their own sake but subordinates them to foreign goals, which contradicts the respect for their moral status. Since animals bred in this way are severely limited in their health and well-being due to the conditioning on aesthetic preferences and are adapted with the help of an adjustment of the genetic constitution, this is an excessive instrumentalization.

Concerning problems and risks, the summary impression emerges: The new methods do not necessarily bring 'much that is new' to the debates that are already taking place, but they do act as a kind of catalyst. Developments that are already being criticized could increase in speed as a result of the possibilities offered by the new technologies. In other words: As is often the case, innovations shed new light on existing dynamics.

References

Grimm, H; Dürnberger, C (2021). *Genome Editing und Gentherapie in der Veterinärmedizin. Ein ethisches Gutachten.* Herausgeber: Eidgenössische Ethikkommission für die Biotechnologie im Ausserhumanbereich EKAH und Ariane Willemsen, Bern, Bundesamt für Bauten und Logistik BBL, pp. 217. ISBN: 978-3-906211-74-9. Online auf der Website: www.ekah.admin.ch

update

EurSafe Executive Committee

First things first: we are pleased to announce the Call for Abstracts for the EurSafe 2024 conference and the launch of the website eursafe2024.org. The conference will be held in Ede, the Netherlands (11-14 September 2024). The theme is “Back to the Future: Sustainable innovations for ethical food production and consumption”. Celebrating 25 years of EurSafe Conferences”. We cordially invite you all to submit abstracts (before 1 December 2023).

In the meantime, we have interesting “EurSafe interim events” such as the Veterinary Ethics Conference in Vienna (27-29 September 2023) and the Nordic Environmental Ethics Symposium on Food and Water Ethics (Trondheim). Please check this newsletter and our website for further events.

On 9 March, we gathered as a Board for our annual local meeting. This year we decided to hold the meeting in Ede (NL) in order to visit the 2024 conference venue. The main items on the agenda were the next conference, finances and membership and the EurSafe strategy.

Regarding finances and membership, we explored ways to make membership of EurSafe more attractive to a wider group of ethics professionals, such as those specialising in environmental ethics and policy, for example by partnering with existing organisations in these fields, such as ISEE in environmental ethics. We also aim to broaden the regional background of our members (link to upcoming conferences). We are also looking at ways to make payment easier, e.g. through an instant payment option on the website. The membership fee was discussed. The current membership fee of 30€ will be maintained until the new strategy is up and running, so that EurSafe has “more to show” in terms of membership benefits.

Discussing the next conferences, the board agreed that it would be good to have the 2026 conference outside the Northern/Western Europe (South, Balkans, Baltic region) to broaden the community and ensure inclusiveness to lower-income European countries. If you have ideas for this, we would be happy to hear from you.

In order to make the existing 5-year strategy more operational, we discussed the issues of interdisciplinarity, community strengthening and member engagement. As a result, we decided to consider practical steps for a more explicit link with environmental ethics and plan a survey of early career colleagues to get a sense of their preferences and how EurSafe could support this group. We also concluded that EurSafe is an ethics society but that most if not all of our issues require input from different disciplines. This has been reflected in EurSafe meetings from the beginning, but we need a more substantial discussion on how we see interdisciplinarity and how professionals from these disciplines can be involved in our society.

Finally, I would like to announce that before the summer break you will receive an invitation to an online General Assembly to discuss the financial report and the first results of the strategy implementation.

Best regards,

Franck Meijboom
On behalf of the Executive Board, 15 May 2023

book announcement

Biotech Animals in Research

Ethical and Regulatory Aspects

Mickey Gjerris, Anna Kornum, Helena Röcklinsberg and Dorte Bratbo Sørensen

This book explores central aspects of genetic modification of animals for scientific purposes in the context technological possibilities, regulatory issues in different regions, animal welfare implications and wider ethical issues, exemplified through current theories and frameworks.

This discussion of lab animals produced through modern biotechnologies becomes increasingly pressing as CRISPR-Cas9 technology advances rapidly, challenging legal and ethical frameworks all over the world. Such animals are now affordable and readily available to almost every branch of scientific research. This raises enormous potential for creating 'tailored' models for human diseases but also rubs up against the traditional guiding principles (the 3Rs) for the humane use of animals for scientific experiments and raises wider ethical issues around death, integrity, and naturalness. In this book, expert authors from diverse backgrounds in laboratory animal care, animal research, technology and animal rights explore a range of topics, from the science behind biotech research animals and the regulation of their use, to utilitarian, animal rights, virtue ethics, and ethic of care perspectives on the use of these technologies.

Whatever your background or role in animal research, this book will challenge and stimulate deeper consideration of the benefits, disadvantages, and ethical consequences of the use of biotechnology in the animal laboratory.

Release date:
November 2023

events

Conferences and symposia

25-27 SEPTEMBER 2023
The 7th Animal Welfare Conference-2023
Kigali, Rwanda
website

27-29 SEPTEMBER 2023
Veterinary Ethics Conference
Vetmeduni Vienna, Austria
website

18-20 OCTOBER 2023
Technologies of Sustainable Food. Facing the Challenges of Climate Change
Jalisco, Mexico
website

16-17 NOVEMBER 2023
4th International Congress on Agricultural and Food Ethics: Disaster Resilient Agriculture and Food Systems
Ankera, Turkey
website

9-13 OCTOBER 2023
Animal Technologies – Fourth Padova Summer School on Philosophy and Cultural Studies of Technology
University of Padoua, Padova, Italy
website

27-28 NOVEMBER 2023
AASA Conference 2023 – Animal Cultures
University of Sidney, Australia
website

11-17 JULY 2024
Minding animals International (MAC5)
Sydney/Gadigal Country, Australia
website

contact