

EP 4: Enriching the environment

Laura Rice says: Welcome to the Care4Dairy podcast series. I'm Laura Rice. Care4Dairy has developed best practice guides to support the welfare of dairy calves, heifers, cows, and end of career animals. The guidelines consist of a series of fact sheets on key topics, some of which are discussed in the podcast series.

Laura Rice continues: The project is farmer-centred and benefited from involvement of stakeholders from farming and veterinary organisations, as well as academia. There are four Care4Dairy podcasts, each looking at the different stages. In each episode of this series, I'll be joined by two guests, a representative from Care4Dairy and either a farmer, farm advisor or veterinarian.

Laura Rice continues: Today we are discussing enrichment, and I am joined by Kirsten Wosnitza, a farmer from Germany, and Isabelle Veissier, a veterinarian from INRAE in France and our Care4Dairy representative. Thank you both for joining me today.

Kirsten, you are farming in Germany, can you tell me a bit about yourself and your farm?

Kirsten Wosnitza answers: Yes, hello from the north of Germany, south of the Danish border. My husband and I, we are running a dairy farm with about 110 dairy cows. It's more or less a high production herd, but we are grazing in summertime, the whole season, and we change a bit more towards that. And yes, I like to be involved with different projects around dairy farming and animal welfare and so, this project and the podcast are very interesting to me.

Laura Rice asks: And Isabelle, you're based in France as a veterinarian with INRAE. Can you tell me about your role with INRAE and how you became involved with Care4Dairy?

Isabelle Veissier answers: I'm a research director of INRAE. INRAE is a French national institute for research in agriculture, food, and environment.

I qualified as a veterinarian, but I never practiced as a veterinary surgeon. I have spent my whole career in research, especially on animal behaviour and animal welfare.

Laura Rice says: The Care4Dairy guidelines, across all life stages for dairy cattle, recommend environmental enrichment, Isabelle. Can you explain why enrichment is important for dairy cattle?

Isabelle Veissier explains: Animals are motivated to interact with their environment. They explore, play, and may even solve problems in their environment. The motivation is not necessarily related to a specific goal that the animal may achieve, such as getting more food or getting access to a comfortable area. It is more an intrinsic motivation, that is, the animal is motivated to perform the behaviour per se. Interacting, getting information from the environment, is something that is motivating for the animal and satisfying this motivation is associated with positive emotions, excitement, joy, satisfaction, et cetera and in the long term, it enhances the resilience of animals. It makes them more adaptable to further challenges. So,

enrichment corresponds to providing stimulating environments that allow and even encourage animals to interact with their environment.

Laura Rice asks: And Kirsten, in your experience, what are the different types of enrichment used for dairy cattle?

Kirsten Wosnitza answers: Yes, as I said, we are grazing in the summer season, so our cows have different environments. And I've learned agriculture, as an apprentice and at university and everybody told us that cows love to have the same routine every day, like the same food, the same environment, and the same procedures. We must have different cows because they love to have changes in a way. They really like, as Isabelle said, they really like to explore. And when they are outside on the pasture, they solve problems, for example they explore where the hole in the fence is and where they can go and find different food, they like to nibble on branches. And they like to walk around and to find what they want to eat.

And if I take this into wintertime because we also have the cows in a barn, we have an open parlour, about 500 square meters. And they walk also along there, they like to explore and they come up as soon as somebody or a machine comes up.

Kirsten Wosnitza continues: They really seem to like the stimulation. For us, it's easy to give them some enrichment, but of course they like to have new food. We only feed once a day, but I could see from my neighbours, if they feed about six times a day, cows, of course, come up, they start to eat again. It's a bit like they are outside and looking for new food. And I think for dairy cows, this provides a lot of stimulation, eating a lot, and moving around. For us, it's very important. Our cows get very old, they leave the farm between seven and eight years. And I think this is also due to what they can do in their dairy cow life.

Laura Rice asks: Have you tried classical music and soft toys? I heard somebody else talk about stimulating cows. Have you seen that, Kirsten?

Kirsten Wosnitza answers: Like with our dairy cows? Yes, I've seen things, but I think dairy cows are still different to calves and heifers. Our cows, they love it when we put new straw in where they sleep. They love this maybe because it's very similar to what they are used to doing outside interacting, expressing social behaviour. And this is a bit different to the calves because they need much more stimulation and we found with our calves, it's very important, straw is a factor because if you want to stop cross-sucking we found it's very easy after giving the milk to put fresh straw or hay bales in their pens for them to interact with. But this is much more work, and we have to talk about this too. This is much more work to do this. And this is a factor when we talk about getting more enrichment into the environment of our animals.

Laura Rice says: Absolutely, it is how much work you can do, isn't it, that dictates how everything is done. So, what are the most cost-effective solutions for farmers to employ enrichment on their farm?

Isabelle Veissier answers: As Kirsten said, there are many ways to enrich the environment of animals. I totally agree that having cows at pasture provides really a rich environment. It's more complex and viable, therefore richer, than indoor conditions. Especially, as Kirsten said, if a pasture has hedges or trees and a variety of plants. And indoors, of course, the

environment can also be enriched by structuring the enclosures, adding partitions between or separations between functional areas, adding brushes, varying the feed. It was also mentioned by Kirsten. Offering possibilities to interact with the environment is also important. For instance, to obtain food with automatic devices, animals have the possibility to decide when they want to feed, and they usually have to do something to get the food. So, that is giving them some agency on their environment.

As Kirsten said, yes, we were taught in veterinary schools that cows, they like their routines. And it is partly true, but they are also curious animals. So, enrichment is a balance between neophobia, which is being afraid of something new, and curiosity. And depending on the animals, on the safety of the environment, animals will be more curious or more afraid of novelty.

Isabelle Veissier continues: For calves, it is even more important to provide a rich environment, for young animals in general. The environment of calves can be enriched by different means. As Kirsten said, providing straw is important for them. They will play in straw. When we put straw in a pen, they usually run after each other or show other playful behaviour.

Providing them with large enclosures stimulates play. Also partitioning into different areas, makes the environment more complex. Giving access to an outdoor area, giving access to soft brushes or objects on the floor or hanging. These are all ways to enrich the environment.

One has to keep in mind that the enrichment should be changed or at least rotated to keep the novelty and thus continue to stimulate the animals and to be enriching. So, the complexity of the environment, its viability in time and the possibility for animals to exert agency, to have some control, are key aspects for environmental enrichment.

Laura Rice asks: And Kirsten, for dairy farmers who have not previously used enrichment, what are the first steps that you would recommend to introduce enrichment on their farms?

Kirsten Wosnitza answers: I think to start with the young stock, with the calves would be very important, like Isabelle said. The first step could be that you don't keep calves separated, that you start very early to keep them together at least. And then we keep them in pairs. And then after 4 or 5 days, we put them in groups and keep them on straw. Maybe even put straw in 2 or 3 times a day. This is not so hard. Just a little bit can help a lot. Also, like you give them the milk, like you feed them. We are using milk bars, and they have a lot of milk, and they need to suck very long because it's a bit hard. They have something to do, and this could be a good start.

Kirsten Wosnitza continues: Also with the heifers, because I think there's a balance between playing and social behaviour. And if you keep them outside also, if you can, we get our calves out with 5 months, maybe and we keep our heifers also on a fairly short grass. So, they have to really look for feed. It keeps them busy. And, maybe if people could, even if they cannot put their cows out in the pasture, maybe they could do this, at least with their young stock. And this gives them about 6 or 7 months outside, with a lot of things to do, which is probably not that expensive and doesn't take so much work time.

Kirsten Wosnitza continues: Really, the work required, is a challenge, especially with young stock. And with cows, if feeding them more than 1 or 2 times a day is possible it is good for everything, it's good for your milk production, it's good for the health, it's good for the cows to keep them busy and happy. And of course, if you want curious animals, curious cows, we come back to a few basics like, the claw health, cows have to be able to move. This is so important for everything, for feeding, for being happy. Even if there's not really enrichment it belongs together.

Laura Rice says: Not having a lame cow is very important, isn't it, and reducing their stress and keeping them curious and interested.

And Isabelle, are there tips to ensuring that enrichment is effective?

Isabelle Veissier answers: It is essential to look at what the animals do with the enrichments. As Kirsten said, a lame cow will not benefit from enrichment. So, if we add an enrichment and it is not used by animals it is unlikely to be very enriching.

So, we should look at whether animals explore the enrichment. Do they interact with the enrichment? Like with straw or with some objects? For instance, do the calves sniff, nibble, or bite at straw or objects. They may display play behaviour alone or with other animals. So, it's important to check what they do with it.

Isabelle Veissier continues: If they do something, at least, if they are active in their environment and interacting with the enrichment, we have to look also at how long such activities are performed because an enrichment is enriching as long as the animals interact with it. If the animals don't show any interest in the enrichment anymore, then we have to change the enrichment for something else.

And maybe we could come back to the first enrichment afterwards. It is also important to look at how many animals use the enrichment. Sometimes an enrichment can be monopolised by only 1 animal. So, in that case, the other animals will not benefit from it. For instance, if there is a nice brush, maybe the dominant cow will use the brush and the others will not have access to it. It is not nice for the other animals. It may be also that the enrichment induces some competition and aggression between animals. So, in that case, the number and the positioning of enrichment must be adjusted. It's not that you have to remove it, but you have to think of a better way to use it.

Isabelle Veissier continues: It is also necessary to check that the enrichment has a long-term positive impact and no detrimental impact. For instance, an object that could be swallowed by an animal, is definitely not a good thing, or a structure with sharpened edges that would be added, but could be harmful, so this has to be avoided. So we have to check this before or once we introduce some enrichment, all these aspects must be considered to check that an enrichment is really enriching.

Kirsten Wosnitza says: Yes, and maybe you were asking, how could we start? Maybe if possible, we can make a little enclosure where the cows or even the young animals can go outside because then they have wind, rain, sun, noises, they have a lot of stimulation and even if it's only small and they can go in and out. I think this is a very good thing and I saw many

colleagues now who even when they construct a new barn or if they have an old barn, they try to make a little outside enclosure.

And the premium class, we are not doing this at home because it doesn't fit really, the premium enrichment would be if you keep the calf with the dairy cow. Because then both are really busy with what they are made for: eating, producing milk, suckling. This would be the premium class, but as long as most of us don't get paid for this, it's not done very often, but this would be the premium, I guess.

Laura Rice says: Enrichment and practices have to work for the individual farmer, don't they? And so, from what you're saying, providing a stimulating environment is essential for cognitive and behavioral health. And it also enhances resilience, which can be achieved by making the environment more complex, like you said, adding straw, structures, objects, nothing too sharp or nothing they can swallow. Do you think there's anything else that we should take home from this?

Isabelle Veissier explains: We have to think of any ideas to enrich the environment of the animal. Kirsten mentioned the contacts between cows and their calves, we have to think of any social enrichment like having calves in pairs, in groups. That's a part of enrichment and also there can be enrichment from the interactions with caretakers. Because they are part of the environment, and a good relationship can be built and there can be some interactions in the form of positive contacts or even talking to animals. This is also part of the stimulation that the animals can receive.

Overall there is no fixed recipe for enrichment. The solutions chosen will depend on farm conditions, on the farmers, what he or she is ready to do. As Kirsten said, we can put them on pasture, give them straw, but we don't keep calves and dams together if it is not feasible on our farm. We have also to take into account what the farmer believes in. If he's or she's not convinced of doing something, then it probably will not work. And we also have to take into account the animals per se on the farm. There are animals which are very curious. There are other animals which are bold. So we also have to take that into account. So, the farm, the farmer, and the animals themselves.

Laura Rice summarises: That's great. Thank you so much. That's all we have time for today on the Care4Dairy podcast. Thank you to my guests, Kristin Wosnitza and Isabelle Veissier.

Laura Rice continues: Thank you for listening. For more information, visit the Care4Dairy website, www.care4dairy.eu, where you can find more information on this podcast topic, the other podcast in the series, best practice guides and fact sheets on the welfare of dairy, calves, heifers, cows, and end of career animals. My name is Laura Rice.

Thank you for listening.