

# Environmental Enrichment for Horses\_UoE\_2023

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## Page 1: Page 1 Consent Form

### Consent Form

**PROJECT TITLE:** Prevalence and perceived effects of environmental enrichment on behaviour and welfare of group-housed horses.

**INVITATION:** You are being asked to take part in a research study on enrichment for horses in outdoor areas, e.g. shelters, feeding stations, herb gardens, scratching posts, varying surfaces, toys, etc. You will be asked to answer questions regarding any enrichment items you provide for your horse(s), how you perceive their effects on your horse(s) as well as some general information about yourself and your horse facility. This study is being conducted by Nicole Miggitsch, and the purpose of this study is for a MSc Equine Science dissertation at the University of Edinburgh. Nicole Miggitsch's research supervisors are Cynthia Naydani and Bryony Lancaster from the University of Edinburgh. The project has ethical approval from the R(D)SVS Human Ethics Review Committee, University of Edinburgh, UK.

**ELIGIBILITY:** Persons completing the survey must be 18+ years and owning or managing an outdoor area for group-housed horses with one or more enrichment items. Enrichment items can be implemented artificially or occurring naturally. Enrichment is to be in the horses' communal area and accessible by the horses on-demand rather than during human-led activities. Participants should be comfortable reading and responding to questions written in plain English.

**INVOLVEMENT:** This survey consists of ranking, multiple-choice and free-text questions. All questions are asked in English. Respondents will be asked to select which enrichment items they have implemented for their horses and answer questions on the perceived benefits or disadvantages of these items, as well as some information on their facility and the horses living there.

**TIME COMMITMENT:** The survey should typically take 10 - 15 minutes of your time.

**PARTICIPANTS' RIGHTS:** You may decide to stop being a part of the research study

without explanation, up until you submit your survey responses. Due to the anonymous nature of this survey, it is not possible to withdraw responses after you have submitted the complete survey. You have the right to omit or refuse to answer or respond to any question that is asked of you. Some questions in the survey maybe mandatory and you may not have the option not to respond, in which case do not submit your survey. You have the right to have your questions about the procedures answered (unless answering these questions would interfere with the study's outcome). If you have any questions as a result of reading this information sheet, you should ask the researcher before submitting your survey results. The anonymised collected data may also be shared with other researchers, if you don't agree to this, please don't submit your survey.

**BENEFITS AND RISKS:** There are no known benefits or risks for you in this study. All data will be submitted and stored anonymously and saved on an encrypted external drive for the express purpose of the study and publication of said study.

**COST, REIMBURSEMENT AND COMPENSATION:** Your participation in this study is voluntary.

**FOR FURTHER INFORMATION:** Nicole Miggitsch (Email: s2200064@sms.ed.ac.uk) will be glad to answer your questions about this study at any time. If you want to find out about the final results of this study, you are welcome to contact Nicole Miggitsch (Email: s2200064@sms.ed.ac.uk) after 30<sup>th</sup> June 2023, who will be glad to let you know when the study has been published.

### **Informed Consent Form**

**CONSENT STATEMENT:** Eligibility: Persons completing the survey must be 18+ years and owning or managing an outdoor area for group-housed horses with one or more enrichment items. They will be asked questions about them, their facility and the horses living there, as well as the implemented enrichment items and their effect on them, their horses and the environment.

### **CONFIDENTIALITY/ANONYMITY:**

- The data we collect does not contain any personal/identifying information about you (such as name, email or IP address).
- Your anonymity will be maintained throughout the survey.
- The online survey platform that we are using is compliant with UK GDPR and Data Protection Act 2018.

By submitting your survey responses, you are confirming that:

- You understand the purpose of this study, and that you are able to ask questions about it

at any time.

- You understand that you are free to withdraw your consent for involvement, however, as the survey is anonymous, once the 'submit' button is clicked, it will not be possible to withdraw.
- You understand that your name will not appear in any published document relating to this study, as all information collected is completely anonymous.
- You understand that the data collected will - though fully anonymised - appear in publications and reports relevant to this area of research.
- The data may also be used by supervisors or others in future ethically approved research projects.

**By continuing and submitting a response to the survey, you have read and understood the above and have given informed consent.**

## Page 2: About the participant

Please tell us about yourself!

1. Which country do you live in?  *Required*

2. What is your age range?  *Optional*

- 18 - 24 years old
- 25 - 34 years old
- 35 - 49 years old
- 50 - 59 years old
- 60 + years old

**Please note:** For the remainder of the survey, the word "horse" refers to any horse, pony, donkey, or mule.

3. Over your lifetime, how many years have you been actively involved with horses? This can include owning, riding, caring for, and/or working with horses, ponies, donkeys and/or mules.  *Required*

- Less than 1 year
- 1 - 2 years
- 3 - 5 years
- 6 - 10 years
- 11 - 20 years
- More than 20 years

4. Are you an Equine Professional? This refers to any role whereby you receive payment directly related to your involvement with horses.  *Required*

- Yes
- No

4.a. What is your area of expertise? You may select more than one answer.

- Livery yard/ boarding stable owner/manager
- Riding instructor/coach or horse trainer
- Veterinary professional (e.g., veterinarian, veterinary surgeon, veterinary nurse or technician)
- Equine care professional (e.g., farrier, trimmer, physiotherapist, equine massage therapist, saddle fitter, dentist, nutritionist)
- Academic/researcher
- Equine behaviourist
- Breeder/stud facility owner
- Equine Assisted Therapy/ Riding for the Disabled facilitator
- Groom, stablehand, or yard worker

4.a.i. If you selected Other, please specify:

5. Do you own or rent your horse facility?  *Required*

- I own it
- I rent it
- Other

5.a. If you selected Other, please specify here

6. Over your lifetime, how many years have you been managing a horse facility?

*Required*

- Less than 1 year
- 1 - 2 years
- 3 - 5 years
- 6 - 10 years
- 10 + years

## Page 3: Information on your horses and your facility

Please tell us about your horse facility and the horses living in it!

If you have multiple herds with access to enrichment items, please select the one containing the horse whose name comes first in the alphabet out of all horses and answer all questions for this herd and their turnout area. For example if herd A is Billy, Thunder and Herman, and herd B is Alpha, Cookie and Zorro, please answer for herd B since Alpha's name is first out of all of them.

7. How long have you been managing this specific horse facility you are answering this survey for?  *Required*

- Less than 1 year
- 1 - 2 years
- 3 - 5 years
- 6 - 10 years
- 10 + years

8. How would you classify the form of horse husbandry/management you employ - how do you keep your horses?  *Required*

- Combination stable and turnout
- 24/7 on field/dry lot
- Track System / Paddock Paradise
- Equicentral
- Other

8.a. Please explain your form of husbandry:

9. Which surface(s) does the majority of your turnout area have?

- Grass
- Dirt
- Sand
- Wood Chips
- Concrete
- Gravel
- Mud Control Mats
- Synthetic Turf
- Sheep Fleece
- Other

9.a. Please list your surface type:

9.b. Why did you choose the surface(s) you have? You may select more than one answer.

*Optional*

- It was already there
- Easy to set up
- Cost efficient to set up
- Easy to keep clean
- Good for horses with sensitive hooves
- Variety of underground for the horse's hooves
- Good water drainage

Good hygiene

10. How many horses are in your herd with access to the enriched turnout area?

*Required*

Please enter a whole number (integer).

Please make sure the number is between 1 and 100.

11. How big is your enriched turn-out area in **acres**?

If you need help measuring your turn-out area, please follow this [LINK](#) to a tutorial on how to use [Google Maps](#) to easily estimate area size. This [calculator](#) will help you to convert from m<sup>2</sup>/ft<sup>2</sup> to ac.  *Required*

12. How many hours per day do your horses spend in the outdoor area with access to enrichment items? Time when horses are ridden or otherwise interact with humans does not have to be subtracted.  *Required*

- 1 - 2 hours per day
- 3 - 4 hours per day
- 5 - 6 hours per day
- 7 - 8 hours per day
- 9 - 10 hours per day
- 11 - 23 hours per day
- 24 hours per day

13. How long have you had enrichment items in your horses' outdoor area?  *Required*

- Less than 1 year
- 1 - 2 years
- 3 - 4 years
- 5 - 10 years
- 11 + years

14. Do all of the horses in your facility have regular access to enrichment elements?

*Required*

- Yes
- No

14.a. How many horses have regular access to the enriched area?

- 1 - 25 % of all horses
- 26 - 50 % of all horses
- 51 - 75 % of all horses
- 76 - 99 % of all horses

15. What age is the YOUNGEST horse in your herd with access to enrichment?

*Required*

- 0 - 2 years
- 3 - 5 years
- 5 - 8 years
- 8 - 10 years
- 10 - 15 years
- 16 - 20 years
- 20 + years

16. What age is the OLDEST horse in your herd with access to enrichment?  *Required*

- 0 - 2 years
- 3 - 5 years
- 5 - 8 years
- 8 - 10 years
- 10 - 15 years
- 16 - 20 years
- 20 + years

17. Which terms do you think describe the majority of the horses with access to your enriched turn-out area? You may select more than one answer.  *Required*

- Interested
- Engaged
- Confident
- Social
- Spooky
- Bored
- Curious
- Aggressive
- Friendly
- Calm
- Frustrated
- None of the above
- Other

17.a. If you selected Other, please specify:



## Page 4: Enrichment items to increase foraging opportunities



18. Do your horses have access to forage-related enrichment items? E.g. slow feeder nets, herb gardens, branches, hay racks, etc.  *Required*

- Yes
- No

18.a. Do your horses have access to any of the following (or other) enrichment elements involving forage? You may select more than one answer.

- Forage rack
- Slow feeder net
- Rotating forage feeder (carousel)
- Wheelie bin forage station
- Forage ball
- Timed forage station
- Salt or mineral lick
- Fresh Herbs
- Branches
- Trees
- Hedges
- Choice of different forages
- Other

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18.a.i. If you selected Other, please specify:

18.a.ii. Does your forage rack use a feature to slow down forage consumption / reduce forage waste?

18.a.iii. What form of slow feeder net do you use?

18.a.iv. Which fresh herbs are you offering in your turn-out area?

18.a.v. Please list any forages you are offering as a choice.

18.b. Have you observed any change in behaviour in your horses since they have access to this type of enrichment? If yes, were they positive or negative?

- Positive Change
- No change
- Negative Change

18.b.i. If you have observed a change in behaviour, please describe:

18.c. Do your horses show any of the following behaviours in relation to the forage providing enrichment items?

Please don't select more than 1 answer(s) per row.

Please select at least 3 answer(s).

	Never	Rarely	Sometimes	Often	Very often
Explorative Behaviour towards the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aggressive Behaviour towards other horses close to the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destructive Behaviour towards the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18.d. How do you provide forage?

- Ad libitum/free-choice/unrestricted
- Restricted/in portions

18.d.i. How many hours (at the longest) do your horses spend without access to forage?

Please enter a whole number (integer).

Please make sure the number is between 0 and 24.

18.e. Has providing forage in enrichment elements affected your horses' body condition?

- Yes - Weight has increased
- Yes - Weight has decreased
- No change
- Not sure

18.f. Has overall foraging time of your horses increased through providing feeding related enrichment?

- Yes very much
- Yes somewhat
- No change
- Not much
- Not at all

18.g. Have your horses had injuries caused by these enrichment items?

- Never
- Rarely
- Sometimes
- Often
- Very often

18.h. How do you rate the cost of installing forage related enrichment items?

- Low
- Medium
- High
- Not sure

18.i. How do you rate the workload of providing forage for your horses in these enrichment elements?

- Low - not much work at all
- Medium - some work but not very much

High - very much work

18.j. Is there anything else you would like to tell us about, concerning forage-related enrichment items?

18.k. Would you like to tell us why you don't have forage-related enrichment items in your turnout area?

## Page 5: Enrichment items to increase structural complexity of the horse's environment



19. Do your horses have access to structural enrichment items? E.g. shelters, different surfaces, water bodies, wooden logs, etc.  *Required*

- Yes
- No

19.a. Do your horses have access to any of the following (or other) enrichment elements involving structural features?

- Wooden Shelter
- Metal Shelter
- Tent
- Tree Shelter
- Open Barn
- Area with Gravel Surface
- Area with Wood Chips Surface
- Sandbit for rolling
- Horse Toilet
- Pond
- Tree Logs
- Rocks

- Artificial Barriers (e.g. tyres)
- Area with bedding (e.g. wood shaving, straw)
- Hills
- Stream/River
- Rubber Mats
- Hedges
- Other

19.a.i. If you selected Other, please specify:

19.a.ii. What kind of surface do your shelter(s)/open barn(s) have? You may choose more than one answer.

- Grass or dirt
- Shavings, straw, wood pellets or chips
- Sand
- Concrete or pavement
- Gravel, stones or rocks
- Mud control or rubber mats
- Other

19.a.ii.a. If you selected Other, please specify:

19.a.ii.b. What do the horses use the shelter(s)/open barn(s) for? You may select more than one answer. *Optional*

- Resting/sleeping

- Protection from sunshine/heat
- Protection from rain/snow/cold
- Scratching on the walls/pillars
- Other

**19.a.ii.b.i.** If you selected Other, please specify:

**19.a.iii.** Have you noticed a change in proprioception (e.g. less stumbling or tripping) since your horses move on different surfaces? Please explain your experiences briefly.

**19.a.iv.** What do the horses use the water bodies (pond, river, etc.) for? You may select more than one answer.

- Drinking
- Playing - e.g. splashing water
- Rolling
- Resting in/near the water
- Other

**19.a.iv.a.** If you selected Other, please specify:

**19.b.** Have you observed any change in behaviour in your horses since they have access to this type of enrichment? If yes, were they positive or negative?

- Positive Change
- No change
- Negative Change

19.b.i. If you have observed a change in behaviour, please describe:

19.c. Do your horses show any of the following behaviours in relation to the structural enrichment items?

Please don't select more than 1 answer(s) per row.

Please select at least 3 answer(s).

	Never	Rarely	Sometimes	Often	Very often
Explorative Behaviour towards the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aggressive Behaviour towards other horses close to the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destructive Behaviour towards the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

19.d. Has providing structural elements affected your horses' body condition?

- Yes - Weight has increased
- Yes - Weight has decreased
- No change
- Not sure

19.e. Have your horses had injuries caused by these enrichment elements?

- Never
- Rarely
- Sometimes
- Often
- Very often

19.f. How do you rate the cost of installing structural enrichment items?

- Low
- Medium
- High
- Not sure

19.g. How do you rate the workload of maintaining structural enrichment elements?

- Low - not much work at all
- Medium - some work but not very much
- High - very much work

19.h. Is there anything else you would like to tell us about, concerning structural enrichment items?

19.i. Would you like to tell us why you don't have structural enrichment items in your turnout area?

## Page 6: Enrichment items to increase sensory stimulation - e.g. toys, puzzles and objects



20. Do your horses have access to sensory enrichment items? E.g. toys, food puzzles, scratching poles, scents, etc.  Required

- Yes
- No

20.a. Do your horses have access to any of the following (or other) enrichment elements involving toys, puzzles and objects?

- Ball
- Treat Ball (Carrots, Berries, Fruit, etc.)
- Grain Ball
- Rope
- Scatter Feeder like snuffle mats
- Treat Puzzle
- Flavoured Water
- Lick treat hanging from rope
- Wood piece with edible cover to nibble
- Objects in different colors
- Wind Chimes
- Music Player

- Object infused with essential oils
- Scratching Pole
- Scratching Mat
- Automatic Brushes
- Cones
- Tyres
- Co-grazing and interaction with non-equids (e.g. goats, sheep)
- Predator stimulation like recorded predator sounds or predator scents
- Fly Curtains
- Sprinkler System
- Ventilator System
- Other

**20.a.i.** If you selected Other, please specify:

**20.a.ii.** What types of treats do you use for your toys/puzzles?

- Fruit
- Vegetables
- Horse Treats (self baked)
- Horse Treats (bought in store)
- Dried Bread
- Grain
- Concentrate
- Other

**20.a.ii.a.** If you selected Other, please specify:

20.a.iii. Why did you decide to use auditory enrichment? Please explain briefly your reasons for and effects of this type of enrichment.

20.b. Have you observed any change in behaviour in your horses since they have access to this type of enrichment? If yes, were they positive or negative?

- Positive Change
- No change
- Negative Change

20.b.i. If you have observed a change in behaviour, please describe:

20.c. Do your horses show any of the following behaviours in relation to the toys and objects you provide as enrichment items?

Please don't select more than 1 answer(s) per row.

Please select at least 3 answer(s).

	Never	Rarely	Sometimes	Often	Very often
Explorative Behaviour towards the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Aggressive Behaviour towards other horses close to the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Destructive Behaviour towards the object	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20.d. Has providing toys and objects affected your horses' body condition?

- Yes - Weight has increased
- Yes - Weight has decreased
- No change
- Not sure

20.e. Has overall play time / time when your horses explore and engage with their environment increased since they have access to sensory enrichment elements?

- Yes very much
- Yes somewhat
- No change
- Not very much
- Not at all

20.f. Have your horses had injuries caused by these enrichment elements?

- Never
- Rarely
- Sometimes
- Often
- Very often

20.g. How do you rate the cost of providing toys and objects?

- Low
- Medium

- High
- Not sure

20.h. How do you rate the workload of providing toys and objects?

- Low - not much work at all
- Medium - some work but not very much
- High - very much work
- Not sure

20.i. Is there anything else you would like to tell us about, concerning sensory enrichment items like toys and objects?

20.j. Would you like to tell us why you don't have sensory enrichment items in your turnout area?

## Page 7: Enrichment in general

Please tell us a little bit about your motivation and preferences for enrichment items and how they affect your horses in general.

21. What was/is your motivation to add enrichment elements to your horses' outdoor area? Please give each reason a ranking and select "not applicable" if something is not relevant to you.  *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 10 answer(s).

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Not applicable
Improving horse welfare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing antagonistic behaviours (e.g. aggression)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing passive behaviours (e.g. boredom)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increasing movement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing horse weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increasing horse weight	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improving health issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increasing foraging time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reducing strain on grazing area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Improving a size-limited turnout area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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21.a. If Health Issues were a motivation for you, please let us know which one(s) are of concern to you. You may select more than one answer. *Optional*

- Equine Asthma
- Equine Metabolism Syndrome
- Laminitis
- Lameness caused by joints/muscles/tendons
- Hoof Problems
- Other

21.a.i. If you selected Other, please specify:

21.a.ii. Did providing environmental enrichment improve the Health Issues you installed it for?

- Yes absolutely
- Yes somewhat
- No change
- No the condition got worse
- Not sure

22. Do you think environmental enrichment increases or decreases each of the following behaviours in your horses?  *Required*

Please don't select more than 1 answer(s) per row.

Please select at least 7 answer(s).

	Significantly decreased	Slightly decreased	No change	Slightly increased	Significantly increased	Not sure
Passive behaviour - standing around inactively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Antagonistic behaviour - aggression against other horses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Allogrooming - scratching each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stereotypic behaviour - crib biting, weaving, pawing, fence walking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Locomotion - moving around in a relaxed way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Playing - friendly and playful interactions with other horses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Self grooming - rolling or scratching against objects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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23. Are there horses in the group with access to the enriched turnout area who perform stereotypies/abnormal behaviours, e.g. weaving or crib biting, also sometimes referred to as "vices"?  Required

Yes  
 No

23.a. Which stereotypies do the horses in you care perform? You may choose more than one answer.

Please select at least 1 answer(s).

Crib biting  
 Weaving  
 Box/Fence walking  
 Pawing  
 Other

23.a.i. If you selected Other, please specify:

23.b. Has access to the enriched turnout area changed the frequency with which the horse(s) perform stereotypies?

Much less frequent     
  Less frequent     
  No change

- More often                       Much more often

24. Is the majority of your enrichment items installed:  *Required*

- Permanently - stay mostly in the same spot  
 Variable - change places regularly  
 Both - some stay, some move

25. Have you ever decided to remove an enrichment element?  *Required*

- Yes  
 No

25.a. Can you explain briefly which enrichment element you have removed and why?

26. Do you prefer the setup of your enrichment items:  *Required*

- DIY built and installed  
 Built and installed by a professional  
 Bought in a shop and self-installed  
 Other

26.a. If you selected Other, please explain:

27. What is important to you in relation to the materials used for your enrichment items?  
You may select more than one answer.  *Required*

- Natural
- Long-lasting
- Price-efficient
- Easy to replace
- Easy to maintain
- Non-toxic for horses
- Non-toxic for environment

28. Do you believe having enrichment elements in your horses' turnout area affects biodiversity and wildlife? *Optional*

- Yes
- No

28.a. Have you noticed a change in insects and wildlife since you have installed enrichment in your horse's outdoor area?

- Yes
- No

28.a.i. Please explain how your enrichment elements affect insects and wildlife.

**28.b.** Have you noticed a change in biodiversity of plants in relation to your enrichment elements?

- Yes
- No

**28.b.i.** Please explain how your enrichment elements affect plant diversity.

**29.** Where do you get inspiration for your enrichment items? You may select more than one answer.

- Books
- Internet
- Friends
- Social Media
- Education/Courses
- Equine Professionals (Trainer, Farrier, etc.)
- Companies offering enrichment items for sale
- Other

**29.a.** If you selected Other, please describe your sources here:

30. If you had no limitations (e.g. money, time, space), which enrichment items would you like to install for your horses and why?

## Page 8: Final page

Thank you so much for filling in this survey on environmental enrichment for group-housed horses in outdoor areas! Your participation is greatly valued!

If you know of other horse people who use environmental enrichment for their horses, please be so kind as to share this survey with them.

As a reminder, if you have any questions on this survey or would like to find out about the results of this study, you are welcome to contact Nicole Miggitsch (Email: [s2200064@sms.ed.ac.uk](mailto:s2200064@sms.ed.ac.uk)), who will be glad to answer any questions and/or let you know when the research project has been finalized.

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