



4H1748S

Sample Welfare Assessment Scenarios

A supplement to 4-H Equine Welfare Assessment

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Introduction

Once completing the sections and activities found in the leader guide *4-H Equine Welfare Assessment* (4H1748), youth may be interested in taking their knowledge further. Participating on a welfare judging team presents an opportunity to expand their knowledge of equine welfare assessment. Animal welfare judging competitions at the youth and collegiate level occur throughout the nation and world. An animal welfare judging contest involves teams and individuals evaluating the welfare of an animal, or group of animals, based on comparing hypothetical scenarios.

Animal welfare assessment scenarios are virtual comparisons of hypothetical situations that allow youth to assess the welfare of animals presented in each situation. Scenarios present information about various aspects of the animals' lives including management practices, facility information, veterinary care, social interactions and groupings, and other relevant information. Using the information provided in each scenario, participants must decide which animal has the more ideal welfare, and defend their decision using oral or written reasons.

In this supplement to *4-H Equine Welfare Assessment*, four pairs of scenarios are provided. These scenarios allow for teams or individuals to test their equine welfare knowledge, or prepare for an equine welfare judging competition. Following each set of scenarios, sample written reasons are provided.

Questions to consider

There are questions youth should consider when looking at the information contained in the scenarios. There may be more, but the following list is a start. Before evaluating the welfare, youth must first consider all the facts provided. Only then can they begin to make a judgment based on those facts.

- What are the physiological facts?
- What are the immunological facts?
- What production measures are presented?
- How do the animals react to humans?
- Are the animals' basic needs met?

- What types of behaviors do the animals exhibit?
- Are these behaviors normal?
- Do the animals have the ability to do what their wild counterparts do?

Making a judgment

Now that youth have considered all of the facts using the suggested questions as a guide, it's time for them to make a judgment based on the facts and their knowledge of equine welfare.

- **Weigh positives and negatives.** There will be positive and negative welfare aspects to each scenario. Both must be considered.
- **Decide what factors are more important if they conflict.** Youth prioritize and make a decision. They should be ready to defend that decision.
- **Tell why certain factors are more important.** Since there may be more than one way to see the picture, their arguments must be logical and well thought-out.

Tips for reasons

Once making a decision, youth may be asked to defend their decision, orally or written. These reasons will describe why one scenario was determined to have better welfare than the other.

Oral reasons are presented in a speech-type format to a determined official judge or reasons listener. The participant will stand and present a set of memorized oral reasons, usually less than 2 minutes in length. Some contests may allow for the use of notes, especially for a novice participant. The reasons listener will not only evaluate accuracy and detail, but also presentation, preparation, and confidence.

Written reasons are developed in the same format as oral reasons, but they do not need to be presented orally to an official reasons listener.

Typically reasons are scored on a 0–50 scale, with 50 being considered perfect.



Welfare Assessment Scenario: Individual Horses

Introduction

Horse 1

- Horse 1 is a 10-year-old, Arabian, grey mare, 1,000 pounds.
- It is trail ridden 1-3 times per week, 2-4 miles per trail ride (light work).
- It is monitored 2-3 times per day when being fed or when being ridden.
- It is groomed and its hooves are cleaned out on the days it is being trail ridden.



Horse 1 in pasture.

Horse 2

- Horse 2 is a 6-year-old, Arabian, black gelding, 1,000 pounds.
- It is in show training for hunter pleasure, 45 minutes riding or training per day, 5 days per week (moderate work).
- It is monitored 4-5 times daily (at each feeding, turnout, brought in, riding time).
- It is groomed and its hooves are cleaned out daily.



Horse 2 looking through stall door.



Horse 2 licking salt block in stall.



Fly Protection

Horse 1

- The horse is fly protected when trail riding.

Horse 2

- Fly spray is applied before each turnout session and each workout performed in the outdoor arena.



Common housefly.

Nutrition

Horse 1

- Grain feeder in pasture
- Feeding program
 - 4 pounds sweet feed per day (1 meal)
 - Ad libitum mature grass hay
 - Trace mineralized (TM) selenium (Se) salt block, free choice
 - Fresh water, free choice



Horse 1 at feed trough.



Sweet feed mix fed to Horse 1.



Mature grass hay fed to Horse 1.



WELFARE ASSESSMENT SCENARIO: INDIVIDUAL HORSES

Nutrition *(continued)*

Horse 2

- Feeder in stall
- Dry wood shavings for bedding
- Feeding program
 - 4 pounds complete mixed pelleted concentrate (divided into 2 meals per day)
 - 3 flakes first-cutting alfalfa-grass mix hay per meal (18 pounds hay per day)
 - TM Se Salt block always available
 - Fresh water always available



Pelleted feed fed to Horse 2.



Feeder in stall of Horse 2.



First cutting alfalfa-grass mix hay fed to Horse 2.

Social Interaction

Horse 1

- The horse is turned out 24 hours per day, weather permitting. If the weather is considered poor, the horse is brought into a stall.
- A run-in shed with straw bedding is available in the turnout area. Modest grass is available.

Horse 2

- There is no observed stereotypic behavior.
- The horse does paw immediately preceding each feeding.



Horse 1 in pasture.



A run-in shed.



Housing

Horse 1

- Horse 1 uses a stall during bad weather.
 - It has straw for bedding.
- There is no observed stereotypic behavior.

Horse 2

- It has a turnout with another horse, 3 hours per day.
- Modest grass is available.
- It is housed in a 10-foot by 12-foot box stall for the remainder of the day.
- Horse 2 is stalled next to other horses and can see the horse in the stall across the aisle.



Stall for Horse 1, used in case of bad weather.



Stall for Horse 2.



Turnout for Horse 2.



WELFARE ASSESSMENT SCENARIO: INDIVIDUAL HORSES

Parasite Control

Horse 1

- Deworming program
 - 2 times per year: tube worming by vet

Horse 2

- Deworming program
 - 6 times a year: Ivermectin paste
 - 1 time a year: double dose Strongid paste

Health Program

Horse 1

- Horse 1 is vaccinated each April for Eastern equine encephalitis (EEE), Western equine encephalitis (WEE), West Nile virus, tetanus, flu, rhinovirus, Potomac horse fever (PHF), and rabies.
- It is Coggins tested for equine infectious anemia (EIA).
- Its hooves are trimmed when long, approximately every 12 weeks.

Horse 2

- Horse 2 is vaccinated each April for EEE, WEE, West Nile virus, tetanus, flu, rhinovirus, PHF, and rabies.
- It is Coggins tested for EIA.
- Its teeth checked and floated if needed.
- Its hooves are trimmed every 8–10 weeks, and shod April–October every 8 weeks.

Human Interaction

Horse 1

- Approach Test:
 - The handler enters the turnout pen to evaluate response.
 - The horse turns and walks away, then stops and stands still to be caught.
 - Resting heart rate (HR) = 32 beats per minute (bpm), HR during approach = 60 bpm
- Off-farm events: twice yearly trail rides
- Mare is sweaty upon arrival at trail riding site; salivary cortisol reading is 20 nanomoles per liter (nmol/L) of saliva (her baseline rate is 9 nmol/L). At ride's completion, the owner's appraisal is that "she enjoyed herself – she loves trail rides!" The mare is no longer sweaty and salivary cortisol is now 10 nmol/L of saliva.

Horse 2

- Approach Test
 - The handler enters turnout pen to evaluate response.
 - The horse lifts its head from grazing and walks up to the handler.
 - Resting HR = 34 bpm, HR during approach = 40 bpm
- Off-farm events: The horse is shown at Class A weekend shows 5–7 times per summer.
- Upon arrival at one show site, the horse is not sweaty, but vocalizes several times; salivary cortisol is 11 nmol/L of saliva (baseline is 5.8 nmol/L). After completion of one rather lengthy championship class, the rider says, "He's not having fun anymore; he's ready to be done for the day." Salivary cortisol is 7 nmol/L after this class.



Sample Reasons: Individual Horses Scenario

Please remember, these are ONLY sample reasons and that it is OK to reach different conclusions as long as the decision can be supported using the information on behavior, physiology, and other areas that is provided in each scenario.

Reasons Example 1

I placed these equine welfare scenarios as horse 2 over horse 1, recognizing that both horses represented appropriate levels of welfare, but deeming horse 2's welfare more enhanced.

The deciding point in my placement was in weighting the value of horse 2's social interaction opportunities more highly than the fact that horse 1 had nearly constant at-liberty turnout. As referenced by the National Research Council (NRC), horse 2's concentrate feedings were spaced out into two meals, which is preferred for feeding concentrate over horse 1's sweet feed being fed in one meal. Furthermore, horse 1's sweet feed appeared either overly fine or to contain dust. The fact that horse 1's hay appeared quite stemmy is probably of little consequence, given that the mare has access to this on an ad libitum basis. Both horses had some access to grass, depending on season. And both horses had free-choice access to trace mineral salt and fresh water. Both horses did have access to bedded resting areas.

Regarding health care, in all likelihood, both situations represent adequate health management, however, once again, horse 2's health care is more enhanced. The gelding receives a more modern approach to deworming with the bi-monthly deworming with Ivermectin and the once yearly deworming with double-dosed Strongid, which is advocated for any potential tapeworm problems. Horse 1's farrier routine is, in all probability, sufficient, but horse 2's farrier routine is more ideal. It is also preferred that horse 2 receives dental care on an annual basis.

Horses are typically kept for human recreation of some form, consequently, their interactions with humans should be deemed important to their welfare. Horse 2 demonstrates several measures of more positive human-animal interaction as would be cited by Hemsworth's teachings; for example, horse 2 approaches the handler when being caught and shows less elevation of heart rate. Furthermore, the transportation stress of being hauled

to an event seems to have less impact on horse 2 as demonstrated by less salivary cortisol response and less thermal response.

For these reasons, and though the placing is close, I deem scenario horse 2's welfare to be a higher score than scenario horse 1's.

Reasons Example 2

Although these two scenarios are close, in terms of welfare, I would place horse 2 over horse 1. Some of the areas that I concentrated on were turnout, nutrition, stress level, and social interaction.

I feel that the gelding has better welfare because he is allowed interaction with another horse, both while he is turned out and when he is stalled. The mare is outside alone almost constantly. This social interaction is important for horses because they are herd animals. Even though the gelding is in a stall for 21 hours a day, he shows no signs of stereotypies.

The gelding seems to have overall better health. He is dewormed more often with two different dewormers, and his teeth are checked regularly. Also, he is probably less irritated by flies because of the application of fly spray before he is turned out. The mare never gets any fly protection except when she is ridden, which could be as little as once a week.

I like that the gelding seems to react better to people. He is willing to walk to someone who enters his pasture and his heart rate remains lower than the mare's. The mare, on the other hand, walks away from someone before standing to be caught and her heart rate is more elevated. The gelding is less stressed by his occasional outings to shows, which is shown by his salivary cortisol levels.

I feel that even though the mare is turned out all day and is fed ad libitum hay, that the gelding has a higher standard of welfare. I would temper this rating by saying that both animals had appropriate or better-than-appropriate welfare.



Welfare Assessment Scenario: Housing and Management

Overview

Farm 1

- 41 horses and 10 foals on the ground on this farm
- 1 stallion, 20 brood mares, 10 geldings for sale, and 10 horses in training for western pleasure and barrel racing competition
- Quarter horse breed
- The manager has a bachelor's degree in animal science.
- 5 high school students help with stall cleaning and 3 full-time employees help with the maintenance of the farm.



Ariel view of Farm 1.

Farm 2

- 100 horses on this Midwestern farm
- 6 breeding stallions, 15 pregnant mares, no foals on the ground, 23 horses in training for general pleasure and show; remainder are young stock
- Arabian breed
- The owner is the manager with a four-year degree in the field. Six people help with chores and training.



Ariel view of Farm 2.

Housing

Farm 1

- Foaling mares are kept in 12-foot by 16-foot (3.7-meter by 4.9-meter) stalls postfoaling.
- Mares and foals are turned out in paddocks 2 hours per day (1 mare and foal per paddock).
- Broodmares still due to foal are kept in pastures with 3-sided shelters and feeders.
- Yearlings are kept in pastures with the same conditions as the broodmares.



Mare and foal in turnout at Farm 1.



Housing *(continued)*

- Show and training horses are kept in box stalls aside from a 1 hour per day training routine.
- Once a day, stalls are cleaned and shavings are replaced.
- Straw bedding is used for foaling mares.



Three-sided shed in turnout at Farm 1.



Stall at Farm 1.



Foal in stall with straw bedding at Farm 1.

Farm 2

- Mares and foals are kept outside in a pasture. A shed in the pasture can be used for shelter. The horses are brought in for farrier work, shots, and worming.
- Show and training horses are kept inside in 11-foot by 11-foot (3.4-meter by 3.4-meter) stalls.
- Horses are turned out in pairs in 2-acre paddocks 2 hours per day.
- Water buckets are filled twice a day.
- Water troughs are checked daily and refilled or cleaned as needed.
- Stalls are cleaned once a day and sawdust bedding is replaced daily.
- Straw bedding is used for foaling mares.



Arabian mare and foal from Farm 2.



Feeder in stall at Farm 2.



Nutrition

Farm 1

- Once a day, horses are fed a corn, oat, and pellet diet, and provided a trace mineral salt block.
- Alfalfa hay is available free choice for stalled and pastured horses.
- Both stalled and pastured horses have automatic waterers (checked 1 time per day).



Feeder in stall of Farm 1.



Automatic waterer in stall of Farm 1.

Farm 2

- Horses are fed corn, oats, and a protein pellet 2 times per day based on NRC recommendations.
- They also have free-choice alfalfa-grass hay and a free-choice trace mineral salt.



Horse eating grain at Farm 2.



Two horses eat hay at Farm 2.



Body Condition

Farm 1

- The average body condition score on a 1–9 scale for the horses on this farm is between a 5 and 6.



Horse with body condition score of 5 at Farm 1.

Farm 2

- The average body condition scores on a 1–9 scale: brood mares, 6; pregnant mares, 6; stallions, 5; training horses, 5.



Horse with body condition score of 6 at Farm 2.

Stallion Care

Farm 1

- The stallion is kept in a 12-foot by 16-foot (3.7-meter by 4.9-meter) stall and exercised for 30 minutes on a hot walker.
- A halter and lead rope are used for routine handling.
- For breeding purposes, it is handled with a chain under its chin.



Hot walker used to exercise stallions at Farm 1.

Farm 2

- Stallions are turned out in a stud lot (a 1-acre paddock) for 2 hours per day.
- Each is handled with a chain around its nose.



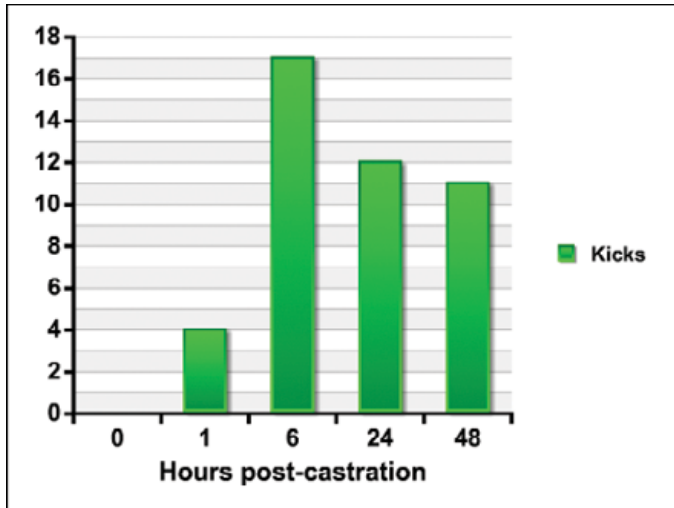
Stallion in paddock in winter at Farm 2.



Castration

Farm 1

- Males are castrated in March of their yearling year.
- They are tranquilized and receive a local anesthetic pre-surgery.
- Ketoprofen is used for inflammation for 3 days postsurgery.
- For the first 12 hours postsurgery, horses are monitored in box stalls, and then turned out in groups of 3 to 4 in paddocks with sheds. Then monitored closely for 2 days.
- 48 hours postcastration, inflammation is noticeable in 3 of 10 horses, but none had extreme inflammation.
- Postsurgery behaviors included kicking at stomach.

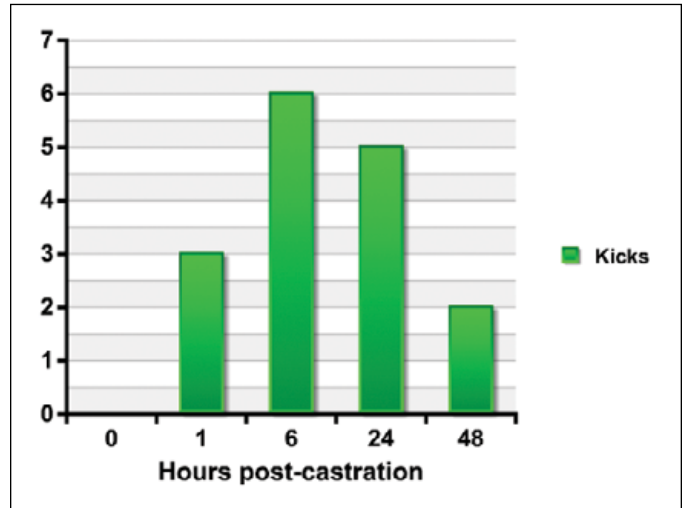


Kicks per hour following castration for Farm 1.

Farm 2

- Foals are castrated at 6 months of age.
- They are tranquilized and receive a local anesthetic pre-surgery.
- Foals are kept in box stalls for monitoring until healing is complete.

- Foals are hand-walked for 1 hour per day.
- Inflammation is easily noticeable in 6 out of 10 horses.
- Horses are monitored closely for 2 days.
- Postsurgery behaviors included kicking at stomach.



Kicks per hour following castration for Farm 2.

Foal Handling

Farm 1

- Foals are acclimated to wearing halters, being led and having their feet handled during the first month postbirth.
- Hooves are trimmed every 8 weeks.
- Shoes are used as needed for horses in training.

Farm 2

- Early handling procedures consist of halter breaking, acclimating to wearing a halter and being led, which is performed prior to 4 months of age.
- Foot handling occurs at 6 days of age. Hooves are first trimmed at 4 months of age and every 8 weeks thereafter. Shoes are used as needed for show horses 3 years or older.



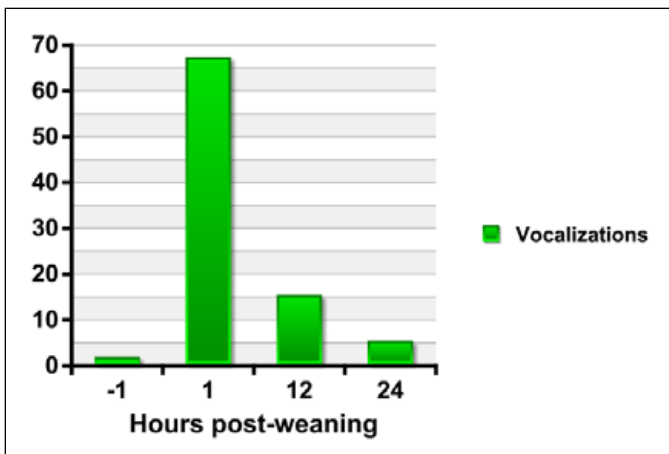
Weaning

Farm 1

- Weaning occurs at 4 months of age.
- The mare is taken from the stall where the foal is left for a week until it is more settled for handling.
- The foal is then turned out individually into a paddock to avoid injury.
- Vocalizations are measured for an average of 10 foals during weaning process.



Foal in stall at Farm 1.



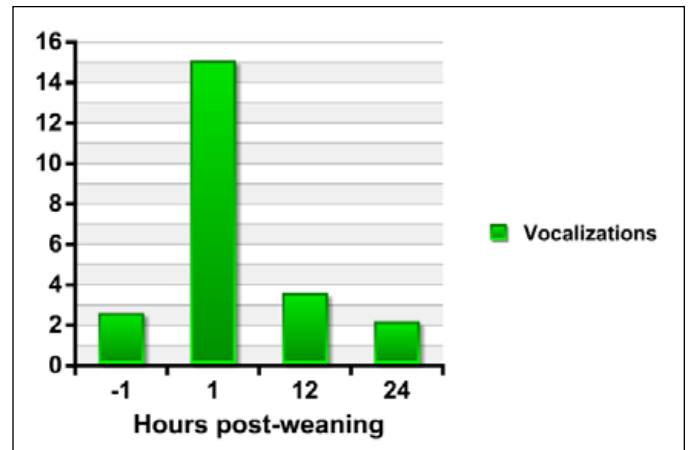
Foal vocalizations per hour for Farm 1.

Farm 2

- Weaning occurs at 4 months of age.
- Foals are kept in a pasture with 3 to 4 other familiar foals.
- Vocalizations are measured for average of 10 foals during weaning process.



Weanlings in pasture at Farm 2.



Foal vocalizations per hour for Farm 2.



Health Care

Farm 1

- A standard industry-typical vaccination schedule has been implemented.
- Vaccines are given in the hindquarter muscles; abscesses are very rare.
- Young stock are dewormed with a Strongid C daily pellet in their feed. They are also dewormed twice a year with an Ivermectin product.
- The adult horses are dewormed with an Ivermectin product 4 times a year.

Farm 2

- A standard industry-typical vaccination schedule has been implemented.
- Vaccines are given in the neck muscles.
- Approximately 1 horse per year develops an injection site abscess requiring poulticing.
- Young stock are dewormed every 4 weeks, and adults are dewormed every 8-10 weeks; Ivermectin products are used.

Competition

Farm 1

- There are 10 horses in training on this farm.
- 6 horses are barrel racers.
- 4 horses are western pleasure horses.
- All horses travel to 12 competition events per year.
- The average commitment is 4 days long.
- None of the 10 horses show resistance to loading onto the trailer.
- 3 of 10 horses show stereotypic behaviors (2 weaving; 1 cribbing and tongue-rolling) for 5-10% of time at competition event.



Barrel racing horse.



Horse in cross ties at Farm 1.



Competition (continued)

Farm 2

- There are 23 horses in training. Each horse in training is worked for an average of 1 hour; for the rest of the day, they are kept in a stall.
- 10 horses travel to horse shows.
- Each horse averages 11 horse shows per year.
- Each show averages 5 days of travel total.
- 2 of 10 horses show mild resistance to loading onto the trailer; a second handler pushing gently from behind provides adequate motivation to load.
- 1 of 10 horses show stereotypic behavior (box stall walking) for 5-10% of time at competition event.



Stallion in paddock in winter at Farm 2.

- 3 of 8 horses turn away as handler enters stall; 1 of 8 initiate an approach.
- Reinforcements per horse, per 30-minute training session*:
 - Negative: 30
 - Positive: 5
- * Reinforcements recorded for the 8 horses in training and traveling to competitions

Farm 2

- Cortisol in response to training:
 - Pretraining: 15 ng/dL saliva
 - Post-Training: 47 ng/dL saliva
- Heart rate
 - Resting: average 29 bpm
 - Upon approach of handler: average 38 bpm
- None of the 8 horses turn away as handler enters stall; 4 of 8 initiate an approach.
- Reinforcements per horse, per 30-minute training session*:
 - Negative: 14
 - Positive: 12
- * Reinforcements recorded for the 8 horses in training and traveling to competitions

Stress Indicators

Farm 1

- Cortisol in response to training:
 - Pretraining: 10 nanograms per deciliter (ng/dL) saliva
 - Post-training: 30 ng/dL saliva
- Heart rate:
 - Resting: average 32 bpm
 - Upon approach of handler: average 56 bpm



Sample Reasons: Housing and Management Scenario

Please remember, these are ONLY sample reasons and that it is OK to reach different conclusions as long as the decision can be supported using the information on behavior, physiology, and other areas that is provided in each scenario.

In evaluating farm 1 and farm 2, I found the welfare of farm 2 to be superior to that of farm 1. This decision is based on feeding, turnout, weaning, reaction to handlers, and stereotypic behaviors.

On farm 2, horses are fed concentrates twice a day, while on farm 1 the horses only receive concentrates once a day. Smaller, more frequent feedings are healthier for a horse's digestive tract.

In addition, on farm 2 the stallions are turned out for 2 hours at a time and the mares are kept in pastures with other horses. Although show horses are kept in stalls, they are turned out in pairs for 2 hours per day. This allows for social interaction between horses and the expression of grazing behavior. On farm 1, the stallion is kept in a stall with only 30 minutes of exercise on a hot walker. The mares and foals are turned out alone for 2 hours per day, and the show horses are kept in stalls except for training. This limits the amount of interaction between horses, limits grazing for the stallion and show horses, and limits interaction with a herd for the foals.

The weaning practices of farm 2 are better than those of farm 1, as well. On farm 2, foals are weaned in groups of 3

to 4 and they are kept outside. This lowers stress, as shown by fewer vocalizations 1 hour postweaning. It also allows foals to interact with others their own age and encourages play. Farm 1 weans their foals individually in stalls. When they are turned out, it is individually in paddocks. The high number of vocalizations 1 hour postweaning compared to farm 2 shows the event to be more stressful for the foals on farm 1.

There are fewer horses on farm 2, only 1 out of 10, that show stereotypic behavior. Farm 1 has an increased number of horses exhibiting stereotypic behavior, 3 out of 10. The number of stereotypies shown by horses on farm 1 could be due to the lack of turnout time. Farm 1 has fewer problems loading horses into trailers, but the measures required to get the horses that resist on farm 2 loaded are minor.

I do concede that there are fewer incidences of inflammation following castration and more ideal body condition scores on farm 1, but since the body condition scores on farm 2 are acceptable and there are fewer kicks at the stomach after castration, I find that farm 2 shows better overall welfare than farm 1.



Welfare Assessment Scenario: Show Farms

Show Training

Farm 1

- 30 Warmblood mares, stallions, and geldings
- When at home, live on 50-acre pasture with good grazing
- 3 automatic waterers
- Large sheds and tree shade



Ariel view of Farm 1.



Photo of riders and horses from Farm 1 at a show.

Farm 2

- 25 Horses, mixed breeds and genders
- When not on show circuit, housed in 12-foot by 12-foot box stalls
- Side walls are solid, back wall has a window, and front of stall has grating on upper half.



Main barn of Farm 2.



Horse and rider from Farm 2 competing in a western pleasure class.



Feeding

Farm 1

- Supplemented with hay when pasture not adequate, TM Se salt ad libitum
- Grain provided during show season
- Average Body Condition Score 4-5

Farm 2

- Fed alfalfa hay and grain as needed
- TM Se salt ad libitum
- Water provided in buckets, checked 2 times daily
- Average Body Condition Score 5-6

Human Interaction

Farm 1

- When strangers approach, horses ignore or move away.
- When trainers approach, horse allows approach without moving away.
- Trained 1-2 hours, 5 days per week during show season, exercised 30 minutes, 3 days per week during off-season
- Groomed after each session



Horse and rider from Farm 1.

Farm 2

- Flight zone is 5 feet.
- Trainers work horses 1-2 hours daily during show season and exercise horses 30-45 minutes daily during off-season.
- Groomed daily



Horse being ridden by trainer at Farm 2.

Schedule

Farm 1

- Horses attend 1 show a month for 6 months.
- Average show length is 3 days.
- Transported in a 4-horse slat trailer
- 4 of 5 horses load readily.
- 1-3 water and rest stops depending on length of drive

Farm 2

- Horses attend 2 shows per month for 6 months.
- Average show length is 3-5 days.
- Transported in a 4-horse slant trailer
- 2 of 5 load readily; 1 of 5 must be sedated prior to transport.
- 1 rest and water break per trip



Overall Health

Farm 1

- Respiratory illness incidence <1%
- Lameness 10%, treated by veterinarian, light training if appropriate
- Dewormed every 2 months
- Regular vaccination schedule

Farm 2

- Respiratory illness incidence 5–10%
- Lameness 20%, primarily treated by management, vet is called if no improvement
- Dewormed every 4 months
- Regular vaccination schedule

Daily Time Budgets

	Farm 1	Farm 2
Grazing	50%	0%
Sleeping	12%	25%
Social Interactions	25%	<5%
Stereotypes*	<1%	5–10%
Other (training)	10%	60%

*Stereotypes include cribbing and weaving behavior



Sample Reasons: Show Farms Scenario

Please remember, these are ONLY sample reasons and that it is OK to reach different conclusions as long as the decision can be supported using the information on behavior, physiology, and other areas that is provided in each scenario.

In evaluating horse farm 1 and horse farm 2, I placed horse farm 1 over horse farm 2 based on housing, loading into the trailer, health, social interactions, and stereotypic behaviors.

On farm 1, the horses live outside on 50 acres with good grazing, allowing the horses to exhibit the natural behavior of grazing for a majority of the day. Farm 2, however, keeps their horses in 12-foot by 12-foot stalls with only grating and windows in the stalls to allow for interaction between horses.

Farm 1 takes as many water and rest breaks as necessary per trip to a show. A majority of the horses, 4 out of 5, load into the trailer readily, which indicates that the horses may not find trailering to be stressful. However, farm 2 only allows for one water and rest stop per trip and only 2 out of 5 horses load into the trailer readily with 1 out of 5 needing sedation. This may be due to bad loading or trailering experiences that may have been caused by poor handling.

Farm 1 shows much fewer incidences of respiratory illness and fewer incidences of lameness. Farm 2 shows an

increased number of respiratory illnesses, probably due to the amount of time spent in stalls, and more incidences of lameness. The deworming schedule for farm 2 is probably sufficient, but the deworming schedule for farm 1 is more comprehensive.

The horses on farm 1 spend 25% of their time in social interactions with other horses, due to the large amount of time spent in the pasture, as opposed to the <5% of the time spent in social interactions for horses at farm 2. Stereotypic behavior is exhibited <1% of the time on farm 1 and 5-10% of the time on farm 2. The increase of stereotypic behavior on farm 2 is at least partially due to the small amount of time spent interacting with other horses.

I recognize that horses on farm 2 possess more desirable body condition scores, but as the body condition scores on farm 1 are acceptable and the horses are healthy, this was not a deciding factor. Therefore, based on housing, health, social interactions, and stereotypic behavior, farm 1 shows better overall welfare than farm 2.



Welfare Assessment Scenario: Bucking Stock and Barrel Horses

Bucking Stock

Farm 1

- 25 cross-bred horses, mares and geldings
- When at home, live in 40-acre pasture with good grazing available approximately 6 months per year
- 3 large sheds, 3 round bale hay feeders
- 2 automatic waterers



Horses from Farm 1 grazing.



Horses from Farm 1 grazing.

Barrel Racing Farm

Farm 2

- 20 quarter horse mares and geldings
- When at home, live 20 hours per day in 12-foot by 12-foot box stalls, side walls are solid, fronts have half solid walls and panels on the upper half
- Turned out individually in 2-acre paddock for 4 hours per day
- Water available by bucket in both places

Nutrition

Farm 1

- Grass hay and TM Se salt blocks available free choice
- Supplemental grain provided in off-grazing months when average body condition scores fall below a 4.5 on a 1-9 scale

Farm 2

- Each horse is fed individually to an average body condition score between 5-6.
- Good quality alfalfa and sweet feed provided 2 times per day; TM Se salt blocks in stalls



Horse from Farm 1 eating grass.



Horse from Farm 2 in stall.

Handling

Farm 1

- Horses are groomed only rarely.
- Horses allow approach by caretakers to within a few feet, but do not readily allow physical contact with human handlers.

Farm 2

- Horses are groomed 6 days per week.
- 75% of horses allow human handler to walk up and make physical contact whether in stall or in paddock. 25% of horses turn tail toward handler if in stall and walk off if in paddock.

Traveling

Farm 1

- Horses travel to 2 rodeos per month.
- Each rodeo involves a 5-day commitment.
- Horses travel loose in a large stock trailer and are not packed tight; injuries during transportation are rare.
- 80% of horses load readily and at a steady pace when going from loading ramp onto the trailer. 20% hesitate and when whip crack noises are presented, they charge hurriedly onto the trailer.



Bucking horse from Farm 1 at rodeo.



Barrel racing horse from Farm 2 at rodeo.



Traveling *(continued)*



Saddle bronc horse from Farm 1 at rodeo.

Farm 2

- Horses typically compete in 12-14 shows per year.
- Shows have a 2-5 day commitment.
- Horses travel in a 5-horse slant load trailer. Horses are loaded and tied individually; legs are wrapped; transportation injuries are rare.
- Typical loading observations find 4 of 5 horses loading readily and at a steady pace. 1 of 5 hesitates and a few broom swats are used to motivate the hesitant horse onto the trailer.



Horse from Farm 2 competing in barrel racing.

Competition

Farm 1

- While at rodeos, horses are housed most of the time loose in the arena along with the cattle; each horse will “work” no more than 2 times per day (that is, go into chute, be flank-strapped with fleece-covered strap, buck with rider no more than 8 seconds, then go back into holding area, have strap removed and return to catch pen with other horses).

Farm 2

- While at competitions, horses will be housed in box stalls and exercise 45-90 minutes per day.
- Typically will compete in 3 classes per day – 10-minute warm-up, less than 20 seconds of run time, 5 minutes to cool down per class

Response to Competition

Farm 1

- Average resting HR = 30 bpm
- Average HR in chute = 110 bpm
- Average HR in holding area after bucking = 70 bpm
- Average HR 10 minutes after bucking = 31 bpm

Farm 2

- Average resting HR = 29 bpm
- Average HR at starting line = 155 bpm
- Average HR outside arena after run = 170 bpm
- Average HR 10 minutes after run = 52 bpm



Horse from Farm 1 bucking off cowboy.



Horse from Farm 2 competing in barrel racing.

Illness/Injury

Farm 1

- Incidence of respiratory infections after event: average 3 per year
- Sick horses are isolated and monitored.
- Lamenesses are monitored and not worked, but usually not treated unless risk of infection is a concern (occurrence is infrequent).

Farm 2

- Incidence of respiratory infections after event: average = 7 per year
- Sick horses are isolated and monitored and treated as needed.
- Lamenesses are monitored and not worked; receive cold-water therapy, wrapping and bute (occurrence averages 1 horse being treated per week).

Time Budget

Farm 1

- Average time budget when at home (during grazing season):
 - Resting/Lying - 10%
 - Resting/Standing - 15%
 - Grazing - 35%
 - Social Interactions - 10%
 - Eating Hay - 10%
 - Moving Around - 15%
 - Other - 5%

Farm 2

- Average time budget when at home:
 - Resting/Lying - 15%
 - Resting/Standing - 35%
 - Grazing - 5%
 - Social Interactions - 2% (across fence line when in paddock)
 - Eating Hay and Grain - 18%
 - Moving Around - 15%
 - Other - 10% (Also 3 of 20 spend <5% of time engaged in stereotypic behavior either weaving or cribbing)



Sample Reasons: Bucking Stock and Barrel Horses Scenario

Please remember, these are ONLY sample reasons and that it is OK to reach different conclusions as long as the decision can be supported using the information on behavior, physiology, and other areas that is provided in each scenario.

In evaluating both horse farm 1 and horse farm 2, I placed horse farm 1 as having better overall animal welfare. I based my decision on living conditions, sickness, and heart rates when working.

At farm 1, horses were allowed to live outside in a 40-acre pasture, with adequate shelter from the elements. They were grouped together to allow social interaction, which has been shown in numerous studies to play an important role in a horse's life. At farm 2, horses were housed in stalls for 20 hours out of the day. Horses at farm 2 were turned out for only 4 hours and were isolated from other horses most of the time.

At farm 1, horses spent 10% of their time in social interactions and exhibited no stereotypies. However, horses at farm 2 spent 2% of their time in social interaction and around 5% of their time exhibiting stereotypies. According to the University of Cambridge, stereotypies may be caused by unresolved conflict or frustration, which can indicate a lower level of animal welfare.

Farm 1 also had less incidence of sickness at the farm, averaging 3 respiratory infections per year, while farm 2 averaged 7 per year.

Finally, when being worked, horses at farm 1 had lower overall heart rates. Their heart rates were 110 beats per minute (bpm) in the chute and 70 bpm postbucking. Ten minutes after the event their heart rates were back to an average of 31 bpm. At farm 2, heart rates were 155 bpm outside the starting line and 170 bpm outside the arena after the event. Even 10 minutes after the event, the average heart rates had only gone back down to 52 bpm. While heart rates would be expected to increase in both groups of horses during work, the higher heart rate in barrel horses 10 minutes after the event could indicate a lack of fitness required for the event or may be evidence of stress associated with the event.

I do concede that farm 2 had a better injury and lameness treatment protocol for their animals. But since animals at both farms were monitored and rested, I did not find this to be a deciding factor. Therefore, I place farm 1 over farm 2 on overall animal welfare.

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