

1 **Effects of management practices on the welfare of dairy donkeys and risk factors associated**  
2 **with signs of hoof neglect**

3

4 Francesca Dai<sup>1\*</sup>, Giulia Segati<sup>1</sup>, Marta Brscic<sup>2</sup>, Matteo Chincarini<sup>3</sup>, Emanuela Dalla Costa<sup>1</sup>, Lorenzo  
5 Ferrari<sup>1</sup>, Faith Burden<sup>4</sup>, Andrew Judge<sup>4</sup>, Michela Minero<sup>1</sup>

6

7 <sup>1</sup>Università degli Studi di Milano, Dipartimento di Medicina Veterinaria, 20133 Milano, Italy

8 <sup>2</sup>Università degli Studi di Padova, Dipartimento di Medicina Animale, Produzioni e Salute, 35020 Legnaro,  
9 Italy

10 <sup>3</sup>Università degli Studi di Teramo, Facoltà di Medicina Veterinaria, 64100 Teramo, Italy

11 <sup>4</sup>The Donkey Sanctuary, Sidmouth, Devon, EX10 0NU, UK

12

13 Supplementary file. Questionnaire administered to dairy donkey farmers.

14

15

---

Housing

---

Housing system:

- Single housing  
 Group housing

---

Where are donkeys kept?

- Pasture  
 Paddock  
 Box  
 Box with access to the paddock  
 Stable  
 ...

---

In paddock/pasture there are

- Shaded areas  
 Shelters  
 Barns  
 ...

---

Are donkeys kept in the same housing system day  
and night?

- Yes  
 No
-

Bedding:	<input type="checkbox"/> Straw <input type="checkbox"/> Hay <input type="checkbox"/> Peat <input type="checkbox"/> Shavings <input type="checkbox"/> .....
How frequently is the bedding changed?	<input type="checkbox"/> Once a day <input type="checkbox"/> 2 times a day <input type="checkbox"/> >2times a day <input type="checkbox"/> Once a week <input type="checkbox"/> 2 times a week <input type="checkbox"/> >2times a week
Presence of:	<input type="checkbox"/> Waiting room <input type="checkbox"/> Milking parlor <input type="checkbox"/> Area for the collection of milk <input type="checkbox"/> Area for service <input type="checkbox"/> Area for veterinary visits with restraint method <input type="checkbox"/> Foaling area <input type="checkbox"/> Hospital area <input type="checkbox"/> Quarantine
<b>Jennies</b>	
Management of jennies during lactation	
Production groups:	
How do you train new jennies for milking?	
Age at first birth:	
When does the training for milking procedures start?	<input type="checkbox"/> From birth <input type="checkbox"/> After weaning <input type="checkbox"/> At puberty <input type="checkbox"/> During the first pregnancy <input type="checkbox"/> During the first lactation <input type="checkbox"/> .....
How long do jennies remain on the farm?	<input type="checkbox"/> 3-6 years <input type="checkbox"/> 7-9 years <input type="checkbox"/> 10-12 years <input type="checkbox"/> >10 years
How many occurrences of mastitis during the last year?	
What is the destination of jennies at the end of productive life?	<input type="checkbox"/> Slaughterhouse <input type="checkbox"/> Trekking <input type="checkbox"/> Education / Animal Assisted Activities <input type="checkbox"/> Companion animal <input type="checkbox"/> ...
Feeding of jennies during lactation	
How much hay is administered to jennies during lactation?	_____ kg/Jenny*day

How much straw is administered to jennies during lactation?	_____ kg/Jenny*day
How much concentrated feed is administered to jennies during lactation?	_____ kg/Jenny*day
Do jennies during the lactation period have access to the pasture?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do jennies during the lactation period receive mineral supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do jennies during the lactation period receive any other feed supplement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How is feed provided?	<input type="checkbox"/> At the manger <input type="checkbox"/> On the floor <input type="checkbox"/> Into a wire rack <input type="checkbox"/> ....
Is concentrated feed provided at the same time of hay/fresh forage?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are animals fed singly or in a group?	<input type="checkbox"/> In a group <input type="checkbox"/> Singly
Feeding of pregnant jennies	
How much hay is administered to pregnant jennies?	_____ kg/Jenny*day
How much straw is administered to pregnant jennies?	_____ kg/Jenny*day
How much feed is administered to pregnant jennies?	_____ kg/Jenny*day
Do pregnant jennies have access to the pasture?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do pregnant jennies receive mineral supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do pregnant jennies receive any other food supplement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Feeding of dry jennies	
How much hay is administered to dry jennies ?	_____ kg/Jenny*day
How much straw is administered to dry jennies ?	_____ kg/Jenny*day
How much concentrated feed is administered to dry jennies?	_____ kg/Jenny*day
Do dry jennies have access to the pasture?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do dry jennies receive mineral supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do dry jennies receive any other food supplement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foals	
Feeding of foals	
Does the foal receive colostrum...	<input type="checkbox"/> From the mother <input type="checkbox"/> From the farmer <input type="checkbox"/> No
Does the foal suckle from its mother?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Up to what age the foal suckles from its mother?	
How do you manage orphan foals?	<input type="checkbox"/> Hand reared <input type="checkbox"/> Use of a foster jenny ...
Do you also nurse the foal artificially?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes...	What do you use? <input type="checkbox"/> Bottle <input type="checkbox"/> Bucket <input type="checkbox"/> Beckett with nipple ....
	What kind of milk do you use for artificially feeding the foal? <input type="checkbox"/> Artificial milk <input type="checkbox"/> Jenny's milk, milked previously <input type="checkbox"/> Cow milk <input type="checkbox"/> Sheep –goat milk Milking bank
From what age is the foal nursed artificially?	
How many times a day is the foal fed artificially?	
Is the foal separated from the mother during the artificial feeding,?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foal weaning	
When does the weaning start?	
How is the foal weaned?	<input type="checkbox"/> Progressive separation of a jenny a time from group <input type="checkbox"/> Group of foals moved to a paddock, separated from mother <input type="checkbox"/> Group of jennies moved to a paddock, separated from foals <input type="checkbox"/> Isolation <input type="checkbox"/> Other .....
When is forage given to foals?	<input type="checkbox"/> Immediately after birth <input type="checkbox"/> After the first week <input type="checkbox"/> During the first month <input type="checkbox"/> During the month before the real weaning <input type="checkbox"/> At weaning
How much hay is administered to the foal?	_____kg/Foal*day
How much straw is administered to the foal?	_____kg/Foal*day
How much concentrated feed is administered to the foal?	_____kg/Foal*day
Do the foals have access to the pasture?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Do the foals receive mineral supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do the foals receive any other food supplement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Foal management during milking and lactation phase</b>	
Is the foal separated from the mother during milking?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How long is the foal separated from mother before the milking?	<input type="checkbox"/> 2 hours before <input type="checkbox"/> 4 hours before <input type="checkbox"/> 6 hours before <input type="checkbox"/> ...
Where is the foal kept when separated from the mother?	<input type="checkbox"/> In a box/in a fence near the mother <input type="checkbox"/> In a separated box/ fence ( no visual contact)
<b>Male foals management</b>	
Do you keep male foals at farm?	<input type="checkbox"/> Yes <input type="checkbox"/> No
What is the destination of male foals kept at farm?	<input type="checkbox"/> Reproduction <input type="checkbox"/> Slaughterhouse <input type="checkbox"/> Trekking <input type="checkbox"/> Education/rehabilitation activities <input type="checkbox"/> ...
What is the destination of sold male foals?	<input type="checkbox"/> Reproduction <input type="checkbox"/> Slaughterhouse <input type="checkbox"/> Trekking <input type="checkbox"/> Education /Animal Assisted Activities <input type="checkbox"/> ...
When are the male foals sold?	_____ month
Are male foals castrated at your farm?	<input type="checkbox"/> Yes <input type="checkbox"/> No
What kind of anesthesia is used for castration?	<input type="checkbox"/> General <input type="checkbox"/> Local <input type="checkbox"/>
<b>Jacks</b>	
Are the jacks kept for reproduction housed in a separate area from the females?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How are the jacks stabled?	<input type="checkbox"/> Singly <input type="checkbox"/> Group
Do jacks have contacts with other donkeys?	<input type="checkbox"/> No <input type="checkbox"/> Visual <input type="checkbox"/> Olfactory <input type="checkbox"/> Tactile
Mating:	<input type="checkbox"/> Natural <input type="checkbox"/> Artificial: with semen collected at farm <input type="checkbox"/> Artificial: with purchased semen
How much hay is administered to jacks?	_____kg/Jack*day

How much straw is administered to jacks?	_____ kg/Jack*day
How much feed concentrated is administered to jacks?	_____ kg/Jack*day
Do the jacks have access to the pasture?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do the jacks have availability of mineral supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do the jacks have availability of other food supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Donkeys intended for slaughter	
Are slaughter donkeys housed in a separated group from other donkeys?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are slaughter donkeys castrated?	<input type="checkbox"/> Yes <input type="checkbox"/> No
At what age are donkeys slaughtered?	<input type="checkbox"/> 1 year old <input type="checkbox"/> 2 years old <input type="checkbox"/> 3 years old <input type="checkbox"/> 4 years old <input type="checkbox"/> 5 years old <input type="checkbox"/> >5 years old
How far is the slaughterhouse from the farm?	
How long do they travel in order to reach the slaughterhouse (from loading the first animal)?	<input type="checkbox"/> >1h <input type="checkbox"/> 1h <input type="checkbox"/> 2h – 4h <input type="checkbox"/> 5h – 8h <input type="checkbox"/> >8h
How are donkeys fed during the fattening phase?	<input type="checkbox"/> Hay <input type="checkbox"/> Commercial feed <input type="checkbox"/> Simple feed <input type="checkbox"/> Mixed concentrate feed <input type="checkbox"/> Supplements <input type="checkbox"/> ....
How much hay is administered to donkeys for slaughter?	_____ kg/Donkey*day
How much straw is administered to donkeys for slaughter?	_____ kg/Donkey*day
How much concentrated feed is administered to donkeys for slaughter?	_____ kg/Donkey*day
Do the donkeys for slaughter have availability of mineral supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do the donkeys for slaughter have availability of other food supplements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Donkey care	
Are the animals vaccinated?	<input type="checkbox"/> Yes <input type="checkbox"/> No

---

Are the animals dewormed?	<input type="checkbox"/> Yes
	<input type="checkbox"/> No
How often do you call the farrier?	<input type="checkbox"/> Never
	<input type="checkbox"/> Once in a month
	<input type="checkbox"/> Every 2 month
	<input type="checkbox"/> Every 3 month
	<input type="checkbox"/> >6 month
How often do you call the veterinarian?	<input type="checkbox"/> Only when necessary
	<input type="checkbox"/> Once in a month
	<input type="checkbox"/> Every 2 month
	<input type="checkbox"/> Every 3 month
	<input type="checkbox"/> >6 month
Who takes care of animals?	<input type="checkbox"/> Owner
	<input type="checkbox"/> Specialized operator (who have diploma/ degree in a zotechnical field)
	<input type="checkbox"/> No specialized operator
	<input type="checkbox"/> ...

---