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Clinical Commentary

Small herd behaviour in domestic donkeys

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Donkeys are highly intelligent and inquisitive animals. They interact with each other, with other species with which they cohabitate and with their environment. They need environmental stimulation to prevent development of adverse behaviours towards herd mates and their surroundings. The definition of 'small herd' in this clinical commentary is less than 10–12 animals. During times of the year when they are confined due to poor weather (excessive rain, heat or cold), it is common for them to focus more intently on each other or objects in their environment (stalls, trees, water containers). When they are turned out on pastures with varying terrain, they spend most of their time eating and demonstrate fewer behavioural abnormalities. Mutual grooming behaviour is common among donkeys but this can escalate to traumatic alopecia in some circumstances (Brement 2018). Other individuals may also pick up this habit from observation of a pair performing it. This is a type of stereotypic behaviour and may require the animals to be separated (Haupt and McDonnell 1993). If low-quality feeds such as straw are available for regular feeding, this behaviour may cease, but it is important to intervene early to avoid the establishment of habitual behaviour. The suggested cause of such behaviour is likely boredom with, or stress from, the environmental situation.

Normal behaviour for donkeys housed and turned out together includes pair bonding and establishment of a social hierarchy (**Fig 1**). Bonding behaviour is very common, and some pairs are quite distressed to the point of illness if separated (The Donkey Sanctuary 2016). Group hierarchy may not necessarily be based on animal size, but more likely on temperament. Some donkeys are more social than others. In a female-dominated group, there is usually one leader who sets the tone for the group (**Fig 2**). She may be responsible for changes in physical location of the group. It is unusual for individuals to remain alone if the group moves to a new location in such circumstances and this may indicate illness in that individual. The offspring of dominant females may stay with their dams and follow their lead or may befriend other individuals if the dam is overly aggressive towards them. When animals are confined in close quarters, aggression levels may increase especially associated with feeding time. This may be particularly evident when treats such as carrots are offered by caretakers. Usually, animals learn their social place quickly and keep themselves out of those types of situations. It is common for dominant animals to remind them. If a few new animals from another group are added to an existing group, the new individuals will usually tend to stay together (**Fig 3**). Over time, they may develop new friendships in the combined group. It is common for them to eat on pasture near their old friends although in fairly close proximity to the rest of the group. Some offspring stay very close to their dams at all times with the dam as the leader of the pair. If the dam is more nervous or highly strung, she may do well nursing her foal, but over time may lose patience with her offspring's intentions to stay close. Close is a relative term and may be demonstrated by frequent intimate physical contact or by more distant positioning in the general area of the dam without such contact. When the group moves, those which are more tightly bound behaviourally tend to stay close while the others will follow along at a greater distance.

It is common for the relationships of friendly animals to change after the birth of a foal. They may abandon their old friends, at least temporarily. A donkey dam typically foals away from the herd and is initially very protective of her foal. This can be manifested by the dam standing outside in the rain when the rest of the group has taken shelter under cover. This behaviour usually will lessen in a few days, although the dam may not allow other animals to approach her foal. Caretakers may have to bring the new pair inside a shelter to avoid bad weather conditions for the newborn. Foals are very inquisitive, and males may demonstrate somewhat rough behaviour with their dams, including mounting and nipping at them. Some dams tolerate this, but others at first seem quiet, and then may hold the offensive foal in place by grasping it on the top of the head. This is met by a surprised reaction from the foal if it has been used to acting in this aggressive way. When the dam lets go, the foal may appear to be emotionally 'hurt' and move away for a short time. Dams are tolerant of foal behaviour, but it appears that the dam may reach her tolerance limit. The result of such correction by the dam is usually a cessation of the foal's aggression for a period of time, or forever (**Fig 4**).

Dams will usually self-wean their offspring by 6–8 months of age, but some allow nursing much longer. Dams will not typically allow their colts to breed them as they approach sexual maturity, but this cannot be relied upon to prevent pregnancies. It is suggested that colts be removed from the female group when they show sexual aggression with attempts at penetration of females after achieving erection. One problem that may occur is where will such colts be housed? They need separate housing and turnout to prevent unwanted pregnancies and to prevent injuries in confinement housing on small farms. It may be wise to geld such individuals if they are not planned to be used for breeding. This can be done at 5–6 months of age.

All breeding studs are not safe for housing or turnout with geldings or new studs. It is prudent for them to be separated by strong fences and distance before attempting cohabitation. If females are out of sight, this introduction may be accomplished much more easily. If geldings or new studs are turned out with established studs, there usually is a period of mounting and biting by the stud just as in a male–female breeding as the established stud exerts dominance over the new gelding or stud. This can last for up to a week or more and is not related to the stud being larger in size, just more

Fig 1: Donkey yearling friends.

Fig 3: Female donkey pair moved to a new farm for breeding retained their close association.

aggressive. If a new stud is removed from the male group for breeding, he may be attacked by the dominant stud on reintroduction. Temporal and distance separation may be required during active breeding periods. The aggression level may decrease dramatically when breeding is completed, or when males are moved out of sight of females.

Male–female breeding behaviour is very interesting in donkeys. In some respects, it is much different from that in horses. A female often shows her first heat at 8–12 months of

Fig 2: Female donkey group. White female on far right is the leader; her daughter is next to her. They stay close all the time. Third female from the right is the daughter of the female to her left. That female is not tolerant to close contact with her daughter. Two females on the left are unrelated but stay fairly close except at feeding time. Female on far left is highly food motivated. Light coloured small female was close companion of the leader until her foal was born.

Fig 4: Donkey mare and neonatal foal eating together.

Fig 5: Stud breeding receptive female on pasture.

age. Studs may demonstrate sexual behaviour starting as young foals. They are usually not able to complete the breeding act until closer to 1 year of age. Field or pen breeding is most commonly used, turning one stud out with as many as 10 females. The stud selects the closest jennet to breed by approaching the group and observing for receptive female behaviour. Studs pursue females in oestrus, sometimes very aggressively, especially when first introduced on pasture. They may bite the neck, back and front or hind legs and even draw blood. Some studs have to wear a breeding muzzle to avoid injury to the female. They usually calm down after 15–30 min, and then the muzzle may be removed. Female receptivity is evidenced by backing up to the stud and making jawing motions with the mouth (**Fig 5**). Other receptive behaviours are similar to the horse and include: female urination while squatting and winking of the vulva (eversion of the clitoris). Nonreceptive behaviour includes kicking at the stud and running away. Animals and handlers may be injured during this process, especially if it occurs in a confined space where females cannot escape. Studs and females do exhibit preferences in their choice and acceptance of breeding partners. Receptive females may also approach a breeding pair to attract the stud. Females mount each other on occasion, with the oestrus female on the bottom. Studs may also mount geldings with which they live, and the geldings may jaw. Some jennets do not show receptivity when there is no jack present, when they are nursing a foal, when another female interferes with the

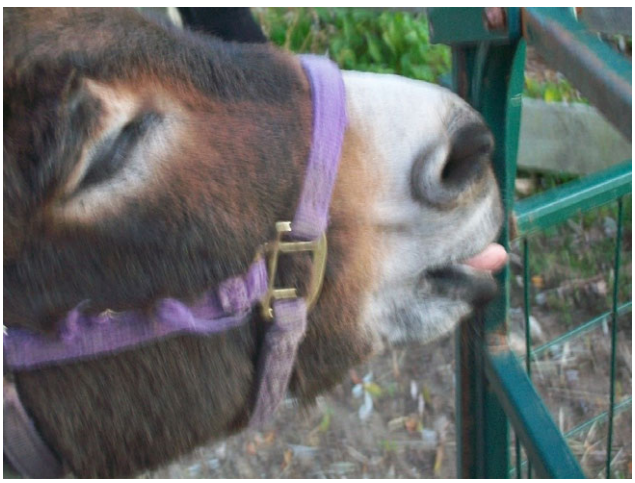

Fig 6: Donkey stud demonstrating tongue pressing behaviour.

Fig 7: Stud showing flehmen reaction while oestrus female in foreground is jawing during hand breeding.

advances of the stud, or in a group, when there is a dominant female present.

Controlled (also known as hand or appointment) breeding allows for recording of exact breeding dates. This process involves oestrus testing the female by allowing the stud to approach her on a lead and observing the behaviour. It may be best carried out with a sturdy fence between the stud and the females, but some females will only show receptive behaviour when mounted. Studs may be overly aggressive or timid when first training them to mount in controlled situations. Handlers need to be alert for sudden movements from the stud and kicking by females in oestrus and in diestrus. Kicking the stud during oestrus is particular to the female and stud involved – all animals are not the same! It may be prudent to halter and tie the female when approaching her with the stud on a lead. Females not in oestrus may demonstrate violent kicking on approach of the stud. It is not difficult to teach most studs to mount for hand breeding without biting the female by using a lead over the nose. Vigorous jerking motions on the lead along with verbal commands usually result in a quick learning process for the stud. Handlers should, however, be prepared for anything. Donkeys are intelligent animals and respond well to consistent, firm training methods.

Most jacks are very slow to achieve erection (10–40 min) when compared to horses. Occasionally, studs may demonstrate obsessive behaviour such as repeated pressing of the tongue onto vertical pipes or surfaces before achieving erection (**Fig 6**). It is normal for a stud to mount a female one or more times before becoming fully erect. It is also common for periods of inactivity at a short distance from the female before the jack achieves a full erection and completes a breeding. A stud may also occasionally mount erect and thrust but not ejaculate. Expect semen to be expelled from the vagina on dismount if ejaculation occurred. There is no correlation between time to achieve full erection or degree of aggressive breeding behaviour and fertility. A female may back up to the jack after having ovulated, but he may not mount her if he has recently bred her within a few hours or has been recently collected for artificial insemination. The flehmen reaction is commonly seen in studs near females or where they have eliminated wastes. The stud points his head upwards and curls up the upper lip, primarily in response to smelling urine from a jennet in oestrus (**Fig 7**). He may also do this when smelling urine and no females are in oestrus.

Donkeys need to be provided with as natural as possible environmental conditions to avoid development of aberrant or destructive behaviours. Quiet and respectful behaviour is required when handling donkeys. During breeding handlers need to pay close attention as studs may show aggressive and unpredictable behaviour when approaching females. Females are very likely to kick whether receptive or not. Careful attention to normal expected behaviour will prevent injury to animals and animal handlers.

Author's declaration of interests

No conflict of interests have been declared.

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References

Brement, T. (2018) Mutually-induced traumatic alopecia responsive to husbandry modification in two cohabitating donkeys. *Equine Vet. Educ.* Epub ahead of print; https://doi.org/10.1111/eve.12976.

Haupt, K.A. and McDonnell, S.M. (1993) Equine stereotypies. *Comp. Cont. Educ.* **15**, 1265-1272.

The Donkey Sanctuary (2016) *Donkey Care Handbook*. 5, 58, 99-100, 147.