

Determination of the optimal sex for working donkeys: experience from Zimbabwe

Peta A Jones

Chilangililo Cooperative, PrivateBag 5713, Binga, Zimbabwe

Abstract

The sexual behaviour of donkeys affects its work both directly and indirectly. Castration of working males may solve some problems while creating others. The management and breeding of donkeys should be seen as a community responsibility not an individual one.

Introduction

As it is probable that the sex ratio of donkey foals is approximately 1:1 male: female, it follows that any owner of a female donkey will sooner or later be faced with excess male foals and must decide whether or not to castrate these animals. On this topic, there is very little guidance from the literature, especially the literature concerning African countries. Jones (1994) introduced a small debate on this problem with respect to Zimbabwe; it now seems worthwhile to widen the discussion.

Many problems encountered by those using working donkeys can be overcome by castration of males, yet there are also disadvantages to castration. Is there an ideal sex for the working donkey and if so is it females, intact males or castrated males? In this paper I explore this question. This paper is not the result of research derived from systematic measurement. Rather, it devolves from my own observations of donkeys accomplishing work, and as such may provide practical insights that are often lacking in traditional scientific research.

Work done by donkeys

Where donkeys are a relatively newly introduced animal (as in Zimbabwe; Jones 1991a), they are used more as draft animals than as beasts of burden, and therefore tend to work harnessed in teams. Also they do not work very frequently. When they are used, usually for plowing, it is often at the hottest time of year, when food and water are at a minimum, so that any battle with the sexual drives takes second place to the animal's battle against exhaustion.

Donkeys used as pack animals may work under easier conditions, though this is debatable (Svendsen, 1991). Although they may not work in isolation from other donkeys, they are not usually closely attached to others as are draft donkeys, and the work is perhaps spread out more evenly throughout the year. Pack donkeys may be overloaded, but the maximum weight of many loads is limited by the ability of a human to lift it on and off the donkey (Iverson 1991). It is my observation that a donkey carrying a load on its back expends much less energy than does a working draft donkey. In the opinion of some (Svendsen, pers. comm.), 'if [pack] donkeys can choose their own speed, they can go further than any other animal, and at the end of the day still do hard work'.

Animal sex has little apparent direct effect on work output of donkeys. If males are stronger than females, this could be more a function of their sometimes larger size (although sexual dimorphism in the donkey appears in my experience to be slight), and freedom from the energetic demands of pregnancy. There seems to be little problem with combining males and females in mixed teams or caravans. Nobody I know bothers about this, and nor do I. It seems to be the case that working a donkey keeps its sexual drives in check, but this is not to say that the choice of which sex to use as a working animal is without direct or indirect effects.

It has been reported from Mexico (Aluja and Lopez, 1991) that male donkeys are not usually castrated (suggesting that it is not considered necessary) and that females are often overworked during pregnancy, resulting in long foaling intervals. Failure to castrate males can result in

uncontrolled breeding, leading to deterioration in donkey quality generally, with small, weak animals exhibiting poor limb structure. Therefore, although mixing intact male and female animals together may not directly limit work performance, the long-term and indirect effects on work output may still be negative.

So far the indirect effects arising from choosing to work females and intact males can be summarised as low reproduction rates and poor animal quality, respectively. Breeding of quality working donkeys should aim for strength and stamina. Howard-Carter (1989) emphasizes that, to do its job as a pack animal, the donkey must not be too fine in the bone. This can, of course, be achieved by carefully confining and controlling intact males, but for most African farmers this is just not possible. Therefore castration must be used, if humans are to exert control over the breeding lines. However, there is an alternative view. Uncontrolled breeding may result in better adaptation to the environment; in other words, if donkeys turn out smaller it may be that smallness is adaptive to some environmental factor such as low food supply. None the less, smaller donkeys will have a lower work output, since work capacity is related to body mass, and this work capacity may be even lower if animals are structurally weak.

Donkey aggression

Castration has other beneficial effects, among them reduction in blood levels of hormones that trigger much of the inter-animal aggression and a lessening of the impulse to wander. Aggression among donkeys is almost certainly due to the sexual urge of males (Hutchins 1981), since fighting usually only occurs between males of apparently 'equal status and strength' (French, 1989). Male donkeys are also more aggressive in their courtship of females than are the males of other equid species (French, 1989).

Male donkeys are capable of killing the animal they attack; I am often told of males that have killed younger donkeys. The worst wounds I have seen were not caused by harnesses, but were inflicted by male donkeys upon each other. Personal video footage from the Palabana Draft Animal Programme in Zambia shows severe wounding of one donkey's hindquarters. This unfortunate animal had the bad luck to be brought in from another centre, with some of his own females, and became the victim of Palabana's own male donkey, despite having 50 ha in which to flee. I myself had a donkey I was keeping intact for breeding until, when he was 4 years old and had already spent a year with my herd, he suddenly started attacking the youngest male, long before the latter's testicles had dropped (which occurred fairly late). Eventually I castrated them both; luckily the older one did change his behaviour after castration, despite the late date of this operation.

An aggressive donkey does not, in my experience, show aggression to humans, but towards other donkeys it employs all of its weapons: incisor teeth and all four hooves. It will mount an enemy and bite the neck, just as it would a female, only it will bite chunks out of the neck: this is not a lovebite. Donkeys will also bite chunks out of chest, buttocks and the upper part of all legs. They will use their front hooves for slashing down on the back and sides of another donkey. Their back hooves are mainly used for defence but they can and will aim at the other donkey's face. During such fights they may be galloping at high speed, chasing or fleeing, and make no attempt to avoid objects or persons in their path. In fact, fighting like this, donkeys show more energy and speed than they ever do while working.

What is the ultimate effect of aggression on work output? If a victim, the donkey, if not dead, may be so wounded that he will not be capable of working for months. The aggressor may also be wounded, or simply exhausted, and perhaps not keen on being taken away to work when there is important fighting to be done.

Donkey wandering

Donkeys of all ages and sexes, even castrated males, seem to have a taste for travel. It is one of the attributes which makes them so suitable for as transport animals.

All the same, another apparent result of the sex drive in intact male donkeys is their tendency to wander long distances on their own. I have known them to wander up to 20 km away. The only time females seem to do this is when they are returning to somewhere they know or are looking for a hiding place in order to give birth.

If donkeys have freedom of movement over a large area (and if they do not have freedom, they are often capable of making it), one need never worry about finding mates for females in heat. In our area, when a donkey female is receptive a male appears from somewhere, often one that has never been seen before in the neighbourhood. This too naturally has an effect on donkey work output. Whatever the visiting male is doing, he is certainly not working for his owner and although the receptive female will allow herself to be caught and put to work, she does so reluctantly and the stranger is still usually close by, making a nuisance of himself.

Problems of castration

Owners of working donkeys should think seriously about castration of most, if not all, of the male donkeys that are born (Hutchins 1981). But this is not a simple decision. For one thing there may be psychological problems associated with human gender rather than donkey sex (Jones, 1994). Other questions to be considered include:

- If not all males, which males should be castrated?
- If all males, then what is to be done about the uncastrated visitors from afar?

At what age should castration be done? It has been recommended that castration should be performed between 6 months and 1 year of age (Jones 1991b), as then the donkey still has the comfort of its mother to aid recovery. Castration should be done during the cold season to lessen risk of infection of the wound. However, problems with castration at this young age include:

- Testicles may be undescended and difficult to locate;
- The animal's qualities and particularly its size are still difficult to judge.

What method of castration should be used? I assume that it should be done surgically and not with a burdizzo, but ordinary farmers cannot afford veterinary fees and may have to perform the operation themselves, yet they are unable to use anaesthetics and ligatures.

Suggested strategies for solution

The following suggestions should not be taken as definitive, but as a starting point for discussion, which may lead to improved strategies.

Community discussions, involving all donkey owners within a radius of 50 km, could be held annually with the aim of choosing which donkeys be kept intact for breeding. Over time, this task should become easier, as it would become clearer which donkeys have sired which offspring and what qualities they pass on.

It would be desirable to have a semi-professional person, of proven success, to undertake castrations at an acceptable fee. He or she should possess knowledge of testicular development and thus be able to choose an appropriate time for castration that will minimize pain for donkeys, who necessarily must undergo the operation without benefit of anaesthesia. (Those worried about the pain may need to remind themselves of the pain intact donkeys inflict on one another while fighting).

Opinion differs as to whether or not the castration wound should be ligated. Donkeys do seem to bleed profusely, and it is recommended by some that the stalk of the testicle be 'frayed' with a knife so as to enhance closing of the blood vessels. There seems however to be a need also for some drainage, as during the first few days post-castration the scrotum can seem alarmingly swollen, and presumably painful. It would be useful to collect data on what proportion of castration without ligation results in donkeys bleeding to death.

Conclusion

The message is one that I often repeat: whether or not actually owned by individuals, free-grazing donkeys become a community responsibility. The whole community should be aware of the

advantages and disadvantages of having donkeys and of maintaining large groups of intact males, so that community decisions can be made about them and their breeding. The ideal donkey is a castrated male, because he is a good worker, but the ideal breeding donkey should be chosen by a community, not an individual.

References

- Aluja A S and Lopez F, 1991. Donkeys in Mexico. pp. 1–7 in: Fielding D and Pearson R A (eds), *Donkeys, Mules and Horses in Tropical Agricultural Development*. Proceedings of colloquium held 3–6 September 1990, Edinburgh, UK. Centre for Tropical Veterinary Medicine, University of Edinburgh, UK. 336p. ISBN 0907146066.
- French J, 1989. Social behaviour. pp. 160–167 in: Svendsen E D (ed), *The professional handbook of the donkey*. The Donkey Sanctuary, Devon, UK.
- Howard-Carter J, 1989. Donkey showing by a competitor. pp. 230–237 in: Svendsen E D (ed), *The professional handbook of the donkey*. The Donkey Sanctuary, Devon, UK.
- Hutchins N and Hutchins P, 1981. *The definitive donkey*. Hee Haw Book Service, Denton, Texas, USA.
- Iverson E, 1991. Equine-based transport. pp. 245–250 in: Fielding D and Pearson R A (eds), *Donkeys, Mules and Horses in Tropical Agricultural Development*. Proceedings of colloquium held 3–6 September 1990, Edinburgh, UK. Centre for Tropical Veterinary Medicine, University of Edinburgh, UK. 336p. ISBN 0907146066.
- Jones P A, 1991a. Overcoming ignorance about donkeys in Zimbabwe - a case study. pp. 311–318 in: Fielding D and Pearson, R (eds), *Donkeys, mules and horses in tropical agricultural development*. University of Edinburgh, UK.
- Jones P A, 1991b. *Training course manual on the use of donkeys in agriculture in Zimbabwe*. Agritex Institute of Agricultural Engineering, Borrowdale, Harare, Zimbabwe. 81p.
- Jones P A, 1994. Castration of donkeys in Zimbabwe. *Draught Animal News* 21: 24–25
- Svendsen E D, 1991. Work to improve the conditions of donkeys and mules worldwide. pp. 181–184 in: Fielding D and Pearson R A (eds), *Donkeys, Mules and Horses in Tropical Agricultural Development*. Proceedings of colloquium held 3–6 September 1990, Edinburgh, UK. Centre for Tropical Veterinary Medicine, University of Edinburgh, UK. 336p. ISBN 0907146066.