DIERE HANTERING – deur Leon Kruger

Dierewelsyn is ‘n emosionele onderwerp veral waar dit van toepassing is op geselskap “companion” diere. Die welsyn van plaasdiere raak al hoe meer van belang veral na artikels in die media, byvoorbeeld: “A Farm Boy Reflects" deur Nicholas Kristof, (The New York Times, July 31, 2008) of die uitsending van Oprah Winfrey; “How we treat the animals we eat” deur Lisa Ling, (Oprah.com, October 14, 2008).Die meriete ten gunste van of teen daardie argumente is nie hier ten sprake nie. Wat ook al die rede is waarom daar met diere geboer word, hulle welstand is baie belangrik om bevredigende resultate te kry.

Dit is immers ‘n Bybelse opdrag…

Gaan lees gerus: *Sagaria 11:17 “Wee die slegte herder wat die kleinvee in die steek laat!”*

Spreuke 27: 23 “Sorg dat jy weet wat jou kleinvee nodig het, gee aandag aan jou veetroppe.”

Ons as boere sorg dat ons diere kos en skuiling het. Ons immuniseer ons diere voorkomend teen infeksiesiektes soos Bloednier, Pasteurella en Slenkdalkoors. Ons doseer gereeld teen wurms en dip ons diere teen eksterne parasiete. En die een wat so ‘n program volg verdien om geluk gewens te word, want jy sorg vir jou diere. Daar is egter een aspek wat baie verwaarloos word in die boerdery en dit is hantering om stres te verminder. Hiermee word nou nie na verwys as gewelddadige hantering alleen nie, maar doodgewone hantering om roetine take uit te voer soos dip, doseer en immuniseer.

Wat is stres?

Stres is al in 1929 deur Canon beskryf as enige eksterne invloed op die homeostase van die dier, op enige spesifieke oomblik wat die potensiaal het om ‘n stres reaksie te ontlok. Homeostase is die vermoë van ‘n sisteem om veranderlikes te reguleer sodat die interne toestand stabiel en konstant bly. Met ander woorde, die handhawing van stabiliteit in die interne omgewing van die liggaam in reaksie tot veranderinge in die omgewing. Dit kan as volg verduidelik word: Op n snikhete dag sal diere maklik aan “hittestres” kan lei, maar dit gebeur nie noodwendig nie, want die dier het ingeboude afkoel metodes om die homeostase te handhaaf. So ‘n dier sal byvoorbeeld minder eet, meer water drink en meer tyd in die skadu deurbring.

Hantering van die dier is ‘n eksterne invloed op die homeostase waar die dier nie kan kompenseer om die homeostase in stand te hou nie, en dus ontlok dit ‘n stres reaksie. Die natuurlike gedrag (etologie) van die dier ten opsigte van hantering prosedures is baie belangrik en moet allereers verstaan word alvorens eksterne invloed op die homeostase verstaan kan word.

Vyf faktore van natuurlike gedrag is van belang en word vervolgens bespreek:

- Veiligheidsone
- Die 4 “F’s”
- Aanjaag van diere
- Balanspunt

- Hantering van dier (handvatsels)

Veiligheidsone

Elke dier, selfs mense, het ‘n veiligheidsone of vlugsone. Dit is daardie area rondom die dier waar hy ongestoord sal voortgaan waarmee hy besig is solank as wat die potensiële bedreiging buite daardie sone bly. Indien die bedreiging binne die veiligheidsone sou beweeg sal die dier in die teenoorgestelde rigting wegbeweeg. Veiligheidsones verskil. Diere wat ekstensief grootgemaak word het groot veiligheidsones, intensief grootgemaakte diere s’n sal kleiner wees en hans grootgemaakte diere het nie ‘n veiligheidsone nie.

Die 4 “F’s”: Freeze; flight; fight & fright

Soos reeds genoem sal ‘n bok wat wei en opmerk dat sy veiligheidsone betree word ophou eet en verstar (freeze). Hy sal stip na die potensiële bedreiging staar. Indien die bedreiging steeds naderkom sal die bok in die teenoorgestelde rigting vlug (flee). Sal so bok nou in ‘n hoek ingejaag word sal dit baklei (fight) om uit die situasie te ontsnap. Sou die hanteerder nou die dier met geweld vasdruk sal so dier ‘n vrees (fright) ontwikkel vir daardie hanteerder. Baie belangrik om hier bewus te wees dat alreeds met die verstar (freeze) reaksie sal die dier kortisol wat die stres hormoon is vrystel. Daar is ook met navorsing bewys dat ‘n bok wat vrees het vir ‘n hanteerder **daardie vrees koester vir so lank as drie jaar**.

Aanjaag van diere

Aanjaag van bokke na die drukgang of hantering fasiliteit gaan dikwels gepaard met vrees, geraas, en fisieke oortuiging en dan, so ironies, word daar tydens die hantering van die dier wat nou net gejaag en verskree is verwag om stil te staan vir die hantering prosedure. Daar is menige faktore ten opsigte van die **natuurlike gedrag** van bokke wat in ag geneem moet word indien stres vermy wil word tydens aanjaag. Vervolgens die belangrikste faktore:

- Hulle het ‘n visuele gesigsveld van meer as 300 grade
- Hulle het diepte persepsie, maar hulle vermoë om diepte te bepaal op grondvlak terwyl hulle beweeg met die kop bo is maar swak
- Om diepte op grondvlak te bepaal vereis dat die bok **moet stop** en die kop laat sak
- Dit verklaar waarom bokke sommer skielik sal stop en die kop laat sak om na vreemde voorwerpe te kyk, bv. tuinslang, waterpoele, skaduwees of verandering in grondoppervlak.
- Hulle beweeg maklik van dowwe lig areas na helder verligte areas, behalwe as die lig direk in hulle oë skyn.
- **Vreemde bewegende voorwerpe** ontsenu bokke en hulle sal huiwer of verseg om in ‘n drukgang te gaan as daar vreemde beweging aan die voorkant is.
- Bokke het dichromatiese kleur sig en is die meeste **sensitief** vir geel tot groen en blou tot pers kleur.
- Dichromatiese sig maak dat die dier meer sensitief is vir skielike beweging.

- Dit verklaar waarom hulle sal stop by areas met lig en donker kontras.
- Bokke is baie meer sensitief vir **hoë frekwensie** geraas as mense
- Die gehoor sensitiwiteit van bokke is die sterkste teen 8000 Hz terwyl die mens se gehoor die sensitiefste is teen 1000 – 3000Hz.
- Onverwagse, **harde** en **vreemde geraas** veroorsaak erge stres by bokke
- Navorsing het bewys dat die klank van **gillende mense** bokke se harttempo meer verhoog het as die klank van hekke wat toeklap.
- Die diere kon differensieer tussen fasiliteite geraas en die dreigende geraas om hulle aan te jag

Balanspunt

Bokke het soos alle diere, die mens inkluis, ‘n balanspunt. Dit is daardie area waar die bok meer gemaklik is wanneer ‘n hanteerder die bok sou hanteer. Indien die hanteerder agter die balanspunt sou wees sal die dier vorentoe beweeg. Soortgelyks sal die bok retireer indien die hanteerder voor die balanspunt is. Die balanspunt is gewoonlik in die area van die blad van die bok. Indien bokke hanteer word moet die hanteerder op die balanspunt staan wat die dier meer kalm sal laat. ‘n Bok wat heeltyd vorentoe of agtertoe beur veroorsaak net uiteindelik meer aggressiewe hantering om dit stil te hou.

Handvatsels

Een van die grootste foute wat ons as boere maak tydens hantering is deur die bokke aan die verkeerde “handvatsels” te hanteer. Die gewildste gedeelte om ‘n bok aan vas te hou is die horings. Dit is die bok se enigste verdediging toerusting. Die natuurlike gedrag van die bok is om los te ruk en homself te verdedig wat dan op ‘n gestoei uitloop, waarna die dier uiteindelik die hanteerder gaan vrees. Hantering van die stert, ore, horings, vel of bokbaard is taboe. Dit is pynlik en veroorsaak net stres by die bok. Korrekte hantering geskied met een hand onder die ken en die ander hand agter die kop terwyl die area onder die oor met die vingers masseer word.

Hantering en Kortisol

Kortisol is die hormoon wat bepaal in welke mate diere stres ervaar. Die bok het geen beheer daaroor nie. Die vrystelling begin wanneer die bok blootgestel word aan ‘n potensiële stressor, byvoorbeeld: wanneer iemand die vlugsone betree sal dit die hipotalamus in die brein stimuleer om kortikotropien vrystelling hormoon vry te stel wat die pituïtêre klier in die brein stimuleer om adrenokortikotropiese hormoon vry te stel wat die adrenale korteks van die niere stimuleer om kortisol vry te stel. Hierdie kortisol het dit ten doel om die bok te laat ontsnap vanaf die stressor. Ongelukkig het kortisol baie negatiewe newe-effekte in die liggaam.

- Ongereelde verhoging van sirkulerende kortisol kan die immuunreaksie so verander dat dit die reaksie vir spesifieke antigeen uitdaging verminder. Met ander woorde immunisering kan **onvoldoende beskerming** verleen.
- Verhoogde kortisol vlakke dui nie alleenlik stres aan nie, maar is ook verantwoordelik vir die onderdrukking van die immuunsisteem van die liggaam. Met ander woorde siektes waarvoor

daar reeds immuniteit bestaan kan nou weer opvlam. **Pasteurella en koksidiose is tipiese voorbeelde hiervan.**

Bo en behalwe die onderdrukking van die immuun sisteem is daar verskeie ander **fisiologiese reaksies** weens kroniese stres aangeteken:

- Verhoogde onvrugbaarheid,
- Verlaagde estrus gedrag,
- Onderdrukte follikel groei en ontwikkeling
- Verlaagde lampersentasie
- Verlaagde melk produksie

Immuniteit teen infeksie organismes soos byvoorbeeld: *Mannheimia haemolytica* (pasteurella), koksidia en orf virusse ontwikkel deur immunisering of deur volgehoue blootstelling aan nie-dodelike dosisse. Dit is slegs wanneer hierdie immuniteit verlaag weens stres dat die dier dan siek word.

Plaaslike navorsing het getoon dat bokke wat hanteer is vir immunisering en dosering se **kortisol vlakke twee keer hoër** was as die normal vlakke. Daarteenoor was die kortisol vlakke van bokke wat twee dae sonder kos en water gelaat is laer as die normal vlakke. Dit is bloot die hantering wat kortisolvlakke verhoog het.

Afsluiting

Korrekte hantering behoort as deel van die bestuursprogram in ‘n boerdery te wees. Doen dit deur die bokke te hanteer sonder om natuurlike gedrag te ondermyn. Ontwerp fasiliteite om natuurlike gedrag in ag te neem en ten voordeel te gebruik. Inkorporeer korrekte hantering metodes in die kudde as deel van siekte voorkoming in stede van net te vertrou op entstowwe

PSALM 144:13:

Mag ons skure vol wees en oorloop van kant tot kant. Mag ons kleinvee in hulle duisende aanteel, in hulle tienduisende vermenigvuldig op ons weivelde.

ANIMAL MANAGEMENT – by Leon Kruger

Animal welfare is an emotional subject particularly when it applies to companion animals. The welfare of farm animals is becoming progressively more important especially after articles in the media, for example, “A Farm Boy Reflects" by Nicholas Kristof (*The New York Times*, July 31, 2008) or the broadcast by Oprah Winfrey, “How we treat the animals we eat” by Lisa Ling (Oprah.com, October 14, 2008). The

merits in favour of or against those arguments do not apply here. Whatever the reason for farming with animals, their welfare is essential for obtaining satisfactory results.

It is after all a Biblical command…

Read *Zechariah 11:17:* "Woe to the worthless shepherd, who deserts the flock!"

Proverbs 27:23: "Be sure you know the condition of your flocks; give careful attention to your herds."

As farmers we provide our animals with food and shelter. We immunise our animals as prevention against infectious diseases such as pulpy kidney, pasteurella and Rift Valley fever. We regularly dose against worms and we dip our animals against external parasites. Those who follow such a programme deserve to be congratulated – they take care of their animals. However, there is one aspect that is most neglected in farming and that is management for reducing stress. This does not refer only to violent handling, but ordinary management to conduct routine tasks such as dipping, dosing and immunisation.

What is stress?

As early as 1929 stress was described by Canon as any external influence on the homeostasis of the animal at any specific moment that has the potential to elicit a stress reaction. Homeostasis is the ability of a system to regulate variables so that the internal condition remains stable and constant. In other words, the maintenance of stability in the internal sphere of the body in reaction to changes in the environment. It may be explained as follows: On a hot day animals could easily suffer from "heat stress", but this does not necessarily occur, because the animal has inherent cooling methods for maintaining homeostasis. Such an animal would for example eat less, drink more water and spend more time in the shade.

Management of the animal is an external influence on the homeostasis where the animal cannot compensate to maintain the homeostasis, and therefore elicits a stress reaction. The natural behaviour (ethology) of the animal regarding management procedures is very important and must firstly be understood before external influence on the homeostasis can be understood.

Five factors of natural behaviour are relevant and are discussed below:

- Safety zone
- The 4 Fs
- Driving animals
- Point of balance
- Management of animal (handles)

Safety zone

Every animal, even people, has a safety zone or flight zone. It is that area around the animal where it will carry on with whatever it is doing undisturbed as long as the potential threat remains outside that zone.

If the threat should move into the safety zone, the animal would move away in the opposite direction. Safety zones differ. Animals that are raised extensively have large safety zones, those of intensively raised animals will be smaller and hand-raised animals do not have a safety zone.

The 4 Fs: Freeze; flight; fight & fright

As mentioned, a goat that is grazing and notices that its safety zone is entered will stop eating and freeze. It would stare at the potential threat. If the threat continues to approach the goat will flee in the opposite direction. If such a goat is driven into a corner it would fight to escape from the situation. If the handler should now violently hold down the animal, such an animal will develop a fear (fright) for that handler. It is very important to be aware that already during the freeze reaction the animal will release cortisol, the stress hormone. Research has also shown that a goat that fears a handler will harbour **that fear for as long as three years**.

Driving animals

Driving goats to the crush or management facility is often accompanied by fear, noise and physical persuasion and then, ironically, during the management of the animal that has just been driven and shouted at it is expected to stand still for the management procedure. There are various factors regarding the **natural behaviour** of goats to be considered if stress is to be avoided during driving. The most important factors are:

- They have a visual field of vision of more than 300 degrees.
- They have depth perception, but their ability to determine depth at ground level while moving with the head up is poor.
- To determine depth at ground level requires that the goat **must stop** and drop its head.
- This explains why goats will suddenly stop and drop their heads to look at a strange object, e.g. a garden hose, pools of water, shadows or changes in soil surface.
- They move easily from dull light areas to brightly lit areas, except if the light shines directly into their eyes.
- **Strange moving objects** unnerve goats and they will hesitate or refuse to move into a crush if there is strange movement ahead.
- Goats have dichromatic colour sight and are most **sensitive** to yellow to green and blue to purple.
- Dichromatic sight causes the animal to be more sensitive to sudden movement.
- This explains why they will stop at areas with light and dark contrast.
- Goats are more sensitive to **high frequency** noise than people are.
- The auditory sensitivity of goats is strongest at 8000 Hz while human hearing is most sensitive at 1000 – 3000Hz.
- Unexpected, **loud** and **strange noise** causes severe stress in goats.
- Research has shown that the sound of **screaming people** increases goats' heart rate more than the sound of gates slamming shut.

- The animals could differentiate between the noise of facilities and the threatening noise of being driven.

Point of balance

Goats, like all animals, including people, have a point of balance. It is that area where the goat is more comfortable when being handled by a handler. If the handler is behind the point of balance the animal would move forward. Similarly the goat will retreat if the handler is in front of the point of balance. The point of balance is usually in the scapular region of the goat. If goats are being handled, the handler must stand at the point of balance that will leave the animal calmer. A goat that always strains forward or backward eventually causes more aggressive handling to keep it quiet.

Handles

One of our greatest faults as farmers during management is by handling the goats by the wrong "handles". The most popular parts of holding onto a goat are the horns. They are the goat's only defensive equipment. The natural behaviour of the goat is to pull away and defend itself, resulting in wrestling, after which the animal will ultimately fear the handler. Handling by the tail, ears, horns, skin or goat-beard is taboo. It is painful and only causes stress in the goat. Correct handling must take place with one hand under the chin and the other hand behind the head while the area under the ear is massaged with the fingers.

Management and Cortisol

Cortisol is the hormone that determines the extent to which animals experience stress. The goat has no control over this. The release starts when the goat is exposed to a potential stressor, for example, when someone enters the flight zone, it would stimulate the hypothalamus in the brain to release the corticotrophin release hormone that stimulates the pituitary gland in the brain to release the adrenocorticotrophic hormone that stimulates the adrenal cortex of the kidneys to release cortisol. This cortisol is aimed at allowing the goat to escape from the stressor. Unfortunately cortisol has various side-effects in the body.

- Irregular increase of circulating cortisol can change the immune reaction to such an extent that the reaction for specific antigen challenge is decreased. In other words, immunisation can offer **insufficient protection**.
- Raised cortisol levels not only indicate stress, but are also responsible for the suppression of the immune system of the body. In other words, diseases for which immunity already exists can flare up again. **Pasteurella and coccidiosis are typical examples of this.**

Over and above the suppression of the immune system, various other **physiological reactions** due to chronic stress have been recorded:

- Increased infertility
- Decreased oestrus conduct
- Suppressed follicle growth and development

- Decreased lambing percentage
- Lowered milk production

Immunity against infective organisms such as, for example, *Mannheimia haemolytica* (pasteurella), coccidia and scabby mouth (orf) viruses develop through immunisation or through continued exposure to non-fatal doses. It is only when this immunity is lowered due to stress that the animal can become ill.

Local research has shown that the **cortisol levels** of goats that were handled for immunisation and dosing were **twice as high** as the normal levels. On the other hand, the cortisol levels of goats left without food and water for two days were lower than the normal levels. It is only the handling that raised the cortisol levels.

Conclusion

Proper management should be part of the management programme in a farming operation. Do so by handling the goats without undermining natural behaviour. Design facilities that take natural behaviour into consideration and use them to the benefit of the goats. Incorporate correct management methods into the flock as part of disease prevention instead of relying only on vaccinations.

Psalm 144:13:

May our granaries be full, providing all kinds of produce; may our sheep bring forth thousands and ten thousands in our fields.