

A photograph of two cows in a field of tall, dry grass under a clear blue sky. The cow in the foreground is dark brown and has a green ear tag with the number '6198'. The cow behind it is black and white and has a green ear tag with the number '524'. A blue horizontal bar is visible in the upper right corner of the image.

# ***Why Spay Heifers?? Why Not??***

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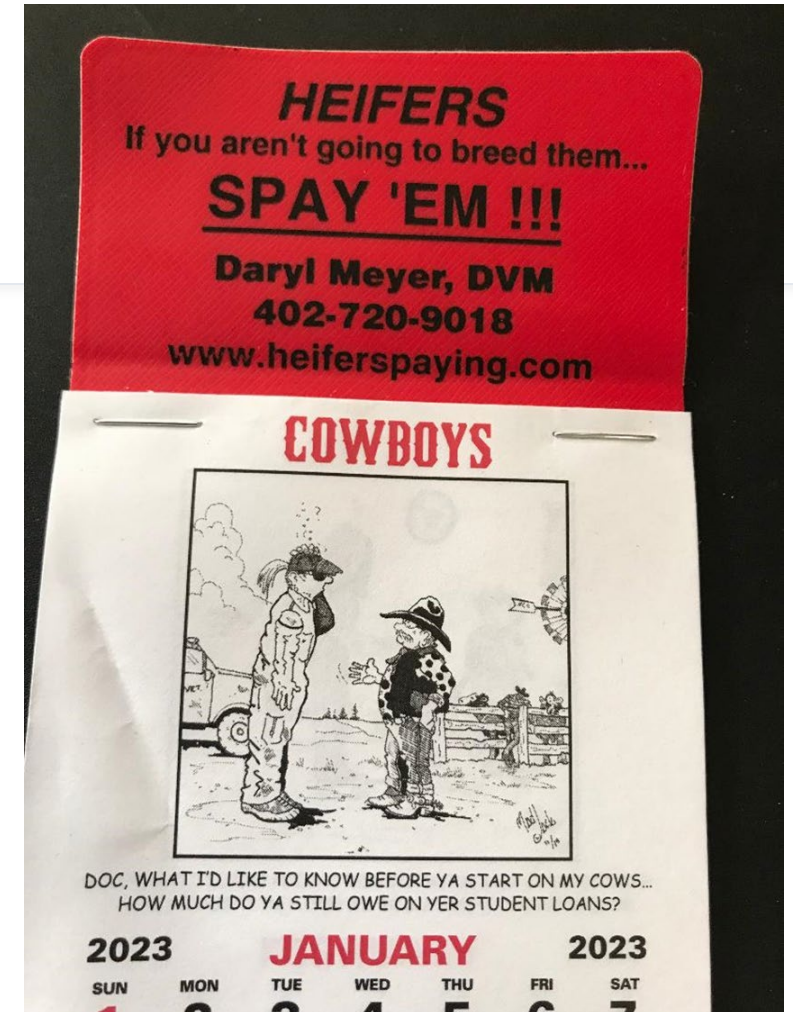
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# ***Why Spay Heifers?? Why Not??***

- ***The DEMAND for Heifer Spaying far EXCEEDS the SUPPLY of qualified/competent veterinarians to meet the demand!!***
- ***Heifer Spaying – Simply a cattle management “tool” to eliminate the various problems encountered with intact heifers***
- ***Based On Experience: BOE***  
***I’ve made that mistake(s) ..... You are more than welcome to learn from my mistakes!!:)***



# ***History of spaying heifer in the United States:***

- ***100 – 150 years ago ..... Heading and Heeling heifers with cowboys & horses***

Left flank finger approach: Small incision in flank

inserting two very strong fingers through the flank

locating one ovary; bringing it to the surface

While holding that ovary at the surface with the opposite hand's fingers search and find the second ovary

Bring it to the surface and excise both ovaries.

- ***75 years ago .....Invention of early forms of cattle chutes to hold cattle***

The Left Flank “surgical” approach began

Left flank hair was clipped, disinfected

Incision made through the skin and first layer of muscle

Fingers were bluntly forced through the remaining muscle layers and peritoneum so the hand could enter the abdomen and locate the ovaries.

A long handle scissors was entered along the length of the surgeon's forearm

Each ovary was isolated and excised and both ovaries brought out of the heifer.

Incision was closed with three skin sutures.

Two chute system: 180 – 220 heifers spayed in a day

## ***BOE:***

- *NOT a good idea to close the incision with hog rings!! :(*
- Learned the left flank approach while doing an externship in west central Nebraska in 1976
- “If you’re going to practice in this part of the world, you need to know how to spay heifers” ..... Dr. Merle Dudley

# ***Vaginal surgical technique/Instruments***

- **1978 Drs. Kimberly & Rupp**

- Colorado State University developed the KR instrument to allow the ovaries to be excised after penetrating the vaginal wall with the instrument.
- Instrument was basically two stainless steel tubes: one inside a slightly larger tube
- Holes in each tube were lined up together; ovary was placed inside the tubes and the inner tube rotated to excise the first ovary
- Holes lined up again; Second ovary placed inside the tubes and excised
- Both ovaries were then removed from the heifer.

# *Ovarian Drop Vaginal Technique/Instruments*

- ***Credit where credit is due:*** 1981 Mr. Ken Cassens and a nurse friend in South Dakota developed an instrument with a tear drop/arrowhead piece with an opening in the center of the piece attached at the end of a stainless steel rod. This instrument was based on a similar instrument Mr. Cassens nurse friend had seen in an old human medical book.
- Mr. Cassens ..... who was not a veterinarian... was spaying a lot of heifers in South Dakota and started coming in to Nebraska to spay heifers which raised the ire of veterinarians in Nebraska.
- But ..... Maybe he had a pretty good idea!!!
- Contacted cattle owners in Nebraska whom he was spaying heifers for .... They reported he was spaying 300-350 heifers in a day with very few problems.
- Contacted Mr. Cassens .... Met him in South Dakota and purchased an instrument from him.
- **The learning process began ..... “You’re just gonna haf a keep a tryin” .... Ken Cassens**

# ***Ovarian Drop Vaginal Technique/Instruments***

- ***Meyer Ovarian Drop Instrument .... 1983***
- Modified the Cassen instrument so the opening in the instrument to place the ovary through was longer and wider to allow for larger ovaries to be excised easier.
- ***Willis Ovarian Drop Instrument ..... 1987***
- Modified the Cassen instrument by having a smaller tapered end at the cutting edge of the opening.
- Australia: Heifers spayed vaginally.
- Cows to be culled ... many while they are pregnant...are “webbed” ..... procedure excises the oviducts while leaving the ovaries intact so the pregnancy can be maintained. Cows are then grazed and fattened another season on grass.

# *Industry Growth*

- In the 1980s to early 2000s there were quite a number of very qualified/competent veterinarians in the High Plains and western states spaying heifers. The number/availability of these veterinarians has steadily decreased due to retirements and or deaths.
- These veterinarians just 'kep a tryin' .....



## ***Advantages of Heifer Spaying:***

- ***First some facts ..... comparing equal quality/genetic based cattle***
- Bulls gain better than Steers
- Intact non-implanted heifers gain better than spayed non-implanted heifers
- Spayed implanted heifers gain better than intact implanted heifers



# *Technique Selection:*

- **Dr. Don Hudson** ... Coordinated Nebraska studies utilizing grazing heifers during the summer grazing season comparing implanted intact heifers with implanted spayed heifers using different spaying techniques.
- Method of spaying **did not** influence heifer performance and **implanted spayed heifers consistently out gained implanted intact heifers.**
- **Methods of spaying:**
  - Left flank approach
  - Left flank approach with a piece of ovary sutured to the rumen wall to encourage reattachment of a blood supply to the ovary
  - KR vaginal technique
  - Ovarian drop vaginal technique
- Studies were conducted two years in a row with consistent results.

## *Advantages of Spayed Heifers:*

- Maintain stocker and feeder heifers in an open/neutered status
- Early detection of pregnant stocker heifers accidentally bred at an early age “teenage pregnancies”
  - If both ovaries can be excised the heifer will abort due to loss of the source of progesterone
- If unable to spay because cannot excise both ovaries .... Inject heifer with 5 ml Lutalyse, 10 ml Dexamethasone and 20 ml LA 200 or 300
- **BOE:** Utilizing antibiotics to promote quicker uterine recovery by preventing uterine infections. (OK client late 90s)

## ***Advantages of Spayed Heifers:***

- **Prevent pregnant heifers in feedlots** with all the associated complications of dystocias, C-sections, vaginal/uterine prolapses, down/dying heifers and frustrated feedlot personnel
  - Some feedlots are preg checking all incoming heifers and the seller is “charged back” \$200 per pregnant heifer.
  - Average cost to a feeder for a feedlot heifer calving is \$150-200 due to calving problems, infections, occasional/frequent deaths, decreased gain, decreased carcass quality and yield (-3.3%)
- **No need to pregnancy check and/or administer abortifacient** drug at initial processing when spayed heifers enter the feedlot
- **No need to feed MGA** to feedlot heifers saving the feeder \$\$
- | Entry Weight | Days on Feed | Estimated MGA Cost |
|--------------|--------------|--------------------|
| 550-600 #    | 200-220      | \$6.00 – 6.30/hd   |
| 800-850 #    | 165          | \$4.95/hd          |

## ***Advantages of Spayed Heifers:***

- Feedlot veterinarians and nutritionists have through the years reported that spayed heifers feed consumption is more consistent than intact heifers fed MGA with resulting lower incidence of acidosis and interstitial pneumonia.
- Ranchers have consistently reported lower incidence of high altitude/brisket disease problems in spayed heifers compared to steers and intact heifers. Why???
  - A large number of heifers I spay are OR, ID, NV, UT, and CA origin heifers that are wintered in CA then summer grazed at high altitudes in WY and CO
- At various times through the years different states have instituted regulations on the interstate movement of heifers because of TB and Brucellosis problems in certain states.
- Spayed heifers can be transported across state lines similar to the lack of regulations/requirements on steers.
- It is important to identify spayed heifers with a “spay tag”.



# ***Advantages of Spayed Heifers:***

- **WHEN COMPARING EQUAL QUALITY HEIFERS .....**
- **SPAYED IMPLANTED HEIFERS WILL HAVE A GAIN AND CONVERSION ADVANTAGE OVER INTACT IMPLANTED HEIFERS**
- Grazing: 0.1 – 0.15 lb/hd/day advantage
- Feedlot: 0.1- 0.2 lb/hd/day advantage plus slightly improved feed conversion
- Example: OK client (20 + years) ..... purchased Medium (not #1) heifer calves out of southwest MO ... started/spayed and then grazed in western OK and TX panhandle. All the heifers were then fed at an OK panhandle feedlot.
- This feedlot manager reported to me many different times that these spayed heifers would perform with the feedlot's "steer average" year after year.

## ***Advantages of Spayed Heifers:***

- **Steer/Heifer Initial Cost Spread:**
- US region and time of year variances
  - 400 – 600 lb heifers purchased at a \$10 – 30/cwt discount
- **Will a heifer gain as well as a steer ..... obviously not; but Spayed heifers selling at 850 – 950 lb on video sales at only a \$3 – 7/cwt discount to steers**
  - And often in NE auction sales only a \$1 – 1.50/cwt discount to similar weight and quality steers
  - *The majority of my clients purchase 400 – 450 lb heifers and sell them at 850 – 950 lbs.*
  - *Some of these heifers are “two season” cattle wintered in CA then summered in CO, WY or ID.*
  - *Others clients in ID, UT, NE and KS winter their calves on a maintenance or grower ration then move them to summer grazing.*

# ***Which implant to use on grazing spayed heifers??***

- **How many days do you need the implant to last in your management situation/schedule??**
- Ralgro 90 days
- Revalor G / Component 120 days
- Synovex One Grass 180 – 200 days

**BOE: Do not implant stocker heifers until the day of spaying.**

- Recently implanted heifers (30 – 40 days) .... Many will have ovaries that have shrunken down in size .... Temporarily.



# ***Disadvantages/Cost/Risk of Spaying Heifers:***

- **Surgery is irreversible.**
- Yes ..... accidents/mistakes do happen!!
- Example: **No this is not my BOE** .... But ..... Wrong pen of heifers brought to the processing area for spaying at a large commercial feedlot.
- **Cost: \$6.50 - \$8.00/hd**
- **BOE: You MUST remove ALL of BOTH ovaries.**
- **Lesson learned** ..... in a group of 150 – 200 heifers spayed the first year I was spaying vaginally ..... two became pregnant!!
- **Death Loss post spaying:** Minimal risk of death loss related to the surgery depending on the surgeons expertise.
- Two main causes of death loss: 1% or less ..... **Infection**
- **Cleanliness of the heifers vulva and the instrument entering the heifer are of the utmost importance!!**
- **BOE:** Lesson learned ..... Bucket of water with disinfectant and a brush to clean the vulvar area is **NOT** sufficient!!!

# ***Disadvantages/Cost/Risk of Spaying Heifers:***

- **Death Loss Post Spaying: 99+% ..... Hemorrhaging**
- **PREVENTION ..... PREVENTION.....PREVENTION**
- **NUTRITION.....NUTRITION.....NUTRITION**
- **Deficiencies of trace minerals .... Especially Copper, Selenium and Cobalt ..... can interfere with blood clotting.**
- High quality mineral supplements with chelated trace minerals are very important.
- Highly recommend to my clients to use Multimin injectable on all the calves at initial processing.
- Several clients will give a second injection at the time of spaying to any heifer not appearing to be as healthy as the rest of the group.
- Dr. Arturo Pacheco .... KS nutritionist.... Experience with Multimin during his PhD work at KSU has told me he feels an injection at initial processing with calves of near normal mineral status will receive benefits of the Multimin injection for approximately 4 – 8 weeks. Those calves with poor mineral levels .... 3 – 4 weeks.
- Very important to get a high quality mineral in to the calves on a consistent basis prior to spaying.
- Moldy feed and/or feed ingredients can also interfere with clotting.

## Heifer Spaying Death Loss Record

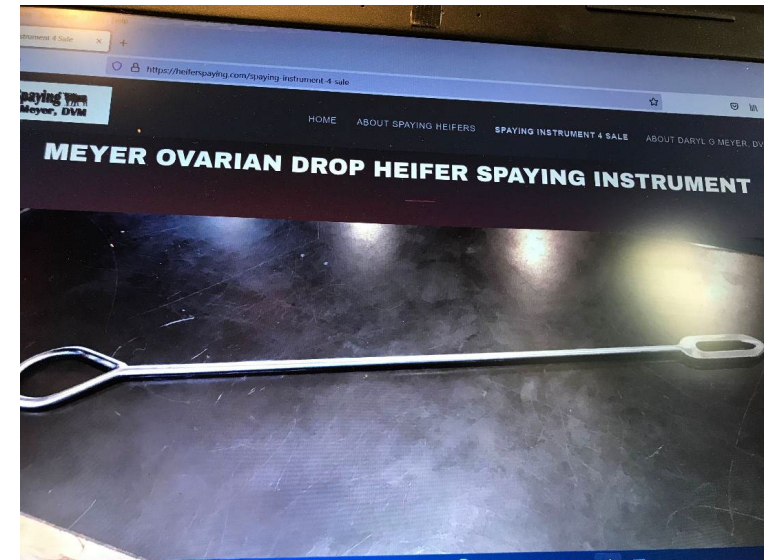
Year	Spayed	Deads	%	1 Dead/#Spayed
2004	25,376	7	0.028%	1/3625 Hd
2005	29,654	10	0.034%	1/2965 Hd
2006	30,655	6	0.020%	1/5109 Hd
2007	31,024	13	0.042%	1/2386 Hd
2008	35,639	17	0.048%	1/2096 Hd * BO (CA)
2009	48,519	13	0.027%	1/3732 Hd
2010	62,606	30	0.048%	1/2087 Hd
2011	55,543	34	0.061%	1/1634 Hd * PC/BO
2012	54,515	28	0.051%	1/1947 Hd * BOE: RA
2013	42,567	4	0.0094%	1/10,642 Hd
2014	42,441	24	0.057%	1/1768 Hd * BO
2015	38,865	7	0.018%	1/5552 Hd
2016	45,611	14	0.031%	1/3258 Hd
2017	49,130	30	0.061%	1/1637 Hd *BOE: WP
2018	49,318	28	0.057%	1/1761 Hd * BO (ID)
2019	53,500	35	0.065%	1/1529 Hd * BO
2020	51,119	27	0.053%	1/1893 Hd * BO
2021	43,720	7	0.016%	1/6246 Hd
2022	38,256	28	0.073%	1/1366 Hd * BO (KS)
	828,058	362	0.044%	1/2287 Hd

# ***Disadvantages/Cost/Risk of Spaying Heifers:***

- **Weather conditions affecting heifers post spaying:**
- **BOE:** Cold ..... Wet ..... Horrible weather conditions do NOT appear to have a noticeable negative effect on the heifers.
- **Heat** .... High ambient temperatures .... Especially in the 8-12 hours pre-spaying ..... **90F plus** .... Does appear to place enough additional stress on the heifers to cause an increase in “bleed outs”.
- **Transporting heifers post spaying:** Varying experiences with this through out the years. MOST of the time .... Transporting the heifers a short distance does not seem to cause problems.
- Moving heifers back to different pastures a short distance away does not seem to cause problems.
- It DOES help the heifers to keep moving each day post spaying and not be allowed to simply lie down and get stiff and sore.
- **Post spaying heifer observation:** Very important the heifers are closely observed for 4 – 5 days post spaying.
- You cannot help a heifer that is bleeding internally but you should not lose heifers to infection. **Early detection and treatment with antibiotics and Banamine is important!!**

# Learning to Spay Heifers:

- **PERSISTENCE**                      **PATIENCE**
- **You must be persistent** ..... Have the **attitude** that I AM GOING TO LEARN THIS TECHNIQUE!!
- You must be **patient**..... **with YOURSELF** to learn the technique
- **Learn the technique in a setting where it is just YOU and an assistant. No audience. No client.**
- Buy a few heifers .... Practice ..... Sell them .... Buy a few heifers .... Practice ..... Repeat until you are confident in what you have taught yourself!!!
- **Veterinarians have mastered the technique in the past .... YOU can now!!!**
- **Locating ... Identifying .... And Isolating each ovary is the first step.**  
Veterinarians with ET experience .... Ovary palpation....
- Have the advantage for this part of the learning process.
- **Learning to use the instrument is the second part of the learning process.**
- Learning to spay heifers ***IS much more difficult*** than pregnancy checking or Artificial Insemination.













# Facilities:



# Equipment/Supplies:

- Instrument(s) Table(s),
- Buckets,
- Wet Suit, Muck boots,
- Lube, Antibiotics..container & syringe(s),
- Needles, Lutalyse, Dexamethasone, Spay Tags/taggers,
- Disinfectant sprayers & Quick connect, Hose(s) & Shut off, Disinfectant (Chorhexadine),
- Bungy chords,
- Rubber mat for floor, small step/ladder,
- Sleeves, Gloves, Helmet, Protective glasses & Dawn soap to prevent glasses from “fogging up”,
- Auxiliary pressure pump & connections, generator, gas.

Water source: **CLEAN WATER .....** *Plenty of Pressure*





## ***Crew:***

- Good, reliable, hard working, dependable people with a sense of humor and a good attitude. You are going to put in some long days!!
- People who know how to handle cattle correctly with low stress on the cattle AND people.



## ***Learning the technique:***

- **Heifer in the chute:** Very important the heifer is **standing up** and **level** as much as possible. Much easier for you to palpate the heifer and manipulate the ovaries and instrument.
- **It is OK to be very aggressive in your “push” of the instrument through the wall of the vagina IF the heifer is standing up and level. Your “push” with the instrument **MUST** be HORIZONTAL**
- **and *NOT* pointed *upward*!!!**
- **Two biggest obstacles I had when learning:**
  1. **Locating and Isolating each ovary**
  2. **Layer of tissue between instrument and ovary preventing the ovary from falling through the opening of the instrument.**
- ***PERSISTENCE*            *PATIENCE*            *ATTITUDE***

## Stock Trading: Plan your Trade ..... Trade your Plan

- **Heifer spaying:** Become *competent & confident* .... Then....
- Develop YOUR Plan to incorporate it in to your practice ....
- Add an important/viable service for your clientele.



**SIRI & ALEXA  
MAY KNOW  
ABOUT YOUR  
DIRTY LAUNDRY  
BUT THEY CAN'T  
CLEAN IT!  
WE CAN & HAVE  
BEEN SINCE 1987**

**f STAINS ARE  
LIKE IN-LAWS..  
IF YOU DON'T  
TRY TO GET  
RID OF THEM  
IMMEDIATELY.  
THEY STICK  
AROUND FOREVER!**

## ***Alberta Bear Remover:***

- Equipment/Supplies: Cage inside the van, Ladder, Ball bat, Shotgun, Old scarred up battle worn Rottweiler/Pit Bull cross dog
- What's your Plan?? State of Submission
- Plan A
- Plan B

# ***Final Thoughts:***

- Providing a needed and beneficial service to your clients.
- Continual Learning
- **Friendships & Relationships**
- **Be & Stay..... Humble and Kind**
- Thank you!!