SD ANIMAL INDUSTRY BOARD
411 South Fort Street
Pierre, South Dakota 57501-4503
Phone: (605) 773-3321
Fax: (605) 773-5459

January 23, 2019

To: Accredited, licensed veterinarians in South Dakota

RE: TB testing

All veterinarians performing tuberculosis testing in South Dakota must review the enclosed training module, complete the enclosed review questions and return the completed review questions form to the SDAIB.

Any TB testing on any species performed by a veterinarian who has not satisfactorily (as determined by the State Veterinarian) completed the review questions form and submitted it to the SD AIB, will not be valid tests.

This review of Bovine TB testing procedures is being conducted as an aid in maintaining South Dakota's TB Free status. Thank you in advance for your cooperation. If you have any questions, please call the SD AIB office.

Dustin Oedekoven, DVM

Dustin Oedekoven, DVM, DACVPM
State Veterinarian and Executive Secretary
South Dakota Animal Industry Board

DPO/slr

Encl: 1. Bovine Tuberculosis Screening Tests, a Review for Licensed, Accredited Veterinarians
2. Tuberculosis Screening Test Review Questions

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Bovine Tuberculosis Screening Tests in Cattle

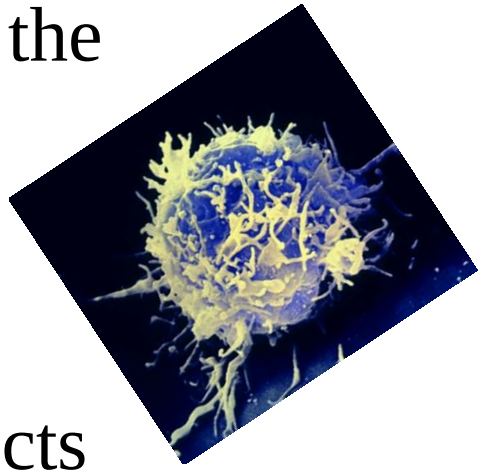
A Review for Licensed, Accredited Veterinarians

History of the TB Control Program

- 1917 - TB Eradication Program began USDA/State Cooperative
- By 1940 ≤ .5% of cattle positive
- By 1989 ≤ .03% of cattle positive
- 1960's - Slaughter surveillance became primary method of detecting infection
- 1982 - SD Accredited-free State
- 1998 - Michigan lost Accredited-free State status
- 2003 - California, New Mexico and Texas lost Accredited-free State status
- Feb.1, 2004 SDAIB Board Order – TB test all dairy imports
- 2005 – MN lost Accredited-free State status
- 2008 – CA and NM downgraded to MA again
- 2008 – MN Split state status – MA and MAA zones
- 2011 – MN & NM declared TB-free, CA remains MAA, MI split status
- 2016 – CA declared TB-free, MI maintains split status (4 counties MA)
- July 2018 – SDAIB repeals order for a TB test on all dairy imports

Photo courtesy of U.S. Library of Congress

The Science Behind the Skin Sensitivity Test



- Tuberculin sensitivity is the prototype of the delayed-type hypersensitive immune response.
- Delayed-type hypersensitivity is cell-mediated.
- Its induction in tuberculin sensitive subjects involves the mobilization of specifically sensitized lymphocytes to the injection site.
- Tuberculin is mitogenic: the skin response itself is the product of the multiplication of lymphocytes and the accumulation of masses of newly generated lymphocytes at the injection site.

Proper Techniques in Caudal Fold Testing - Instructions

For cattle, sheep, and goats

- Inoculation of test animals with vaccines or the administration of drugs, pharmaceuticals or anthelmintics in conjunction with tuberculin injections should be avoided if possible.
- Live vaccines may depress the individual animal's immune system and thus reduce that animal's ability to respond to the tuberculin test.

These products should be administered at the time of **observation** rather than at the time of injection.

Reasons for TB Testing

- Area Testing
- Herd Accreditation
- Milk Ordinance
- Tests for Movement
- Imported Animals
- Retest of Quarantined Herd
- Test of Source Herd
- Test of Exposed Animal
- Retest of Suspect

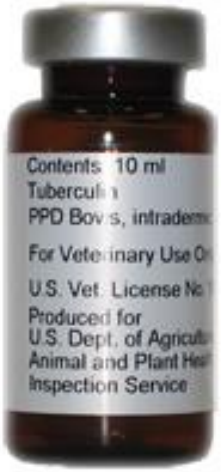
The Testing Veterinarian MUST INDICATE the REASON for the test on the test chart.

Proper Techniques in Caudal Fold Testing - Equipment and Care

For cattle, sheep, and goats

- Tuberculin
  - **Purified Protein Derivative (PPD)**
    - precipitated from a heat sterilized M. bovis culture filtrate containing the products of mycobacterial growth
  - **Must be stored in the dark at 39-46 F**
  - **Discard if frozen**
  - **Once opened, bottles should be discarded after no more than 2 weeks of storage**
  - **Use before the expiration date**
  - **Protect from excessive heat and cold in the field**
  - **Must be a clear solution**

Order PPD directly from NVSL. See SDAIB website for more information. **http://aib.sd.gov/forms.html**



Proper Techniques in Caudal Fold Testing - Equipment and Care

For cattle, sheep, and goats

- Syringe and Needles
  - Disposable plastic 1.0cc or .5cc tuberculin syringes
  - Glass syringes may be used but only with needles with metal hubs
  - Multiple dose syringes are prohibited if not graduated in 0.1 ml or not equipped with a needle of the required size
- Needles
  - 26 gauge, 1 centimeter (3/8 inch) long
    THIS IS THE ONLY SIZE PERMITTED

Proper Techniques in Caudal Fold Testing - Equipment and Care

For cattle, sheep, and goats

- Other Items Needed:
  - Absorbent cotton and paper toweling
  - Isopropyl alcohol (70%)
  - Adequate Restraint -- lariat, nose tongs, halter, chute or head gate
  - Official Eartags and pliers
  - Required Forms
    - VS Form 6-22
    - VS Form 6-22B (continuation form)

Proper Techniques in Caudal Fold Testing - Injection Technique

For cattle, sheep, and goats

- Draw only one dose (0.1 ml) at a time using disposable syringes. Eliminate air bubbles to ensure an accurate dose.
- The injection site is the caudal fold about 7cm (2.5 in.) distal to the base of the tail, outside of the hairline, in the center of the fold. Either fold may be used, but be sure to use the same fold on the whole herd of cattle.
- Clean the caudal fold with cotton.
- Ensure that the injection is intradermal. Needle should be parallel to the skin which is resting on the index finger. The needle is then inserted to its full length between the superficial layers of the skin and the tuberculin injected. A small bleb will appear at the injection site if a proper injection has been made.
- A new needle should be used for each injection.

For cattle, sheep, and goats

Proper Techniques in Caudal Fold Testing – Initiating VS Form 6-22

- **Identify all animals injected** and record information on test record.
  - **Official ID** must be recorded on test chart.
    - 9-digit alpha-numeric USDA metal tag.
    - Animal identification number (AIN).

      The AIN is a 15-digit electronic or visual tag where the first three digits are either:

      1. The country code (840 for the USA) **OR**
      2. The alpha characters "USA" on tags applied prior to March 2015 **OR**
      3. The 900 series numbers assigned to tag manufacturers on tags applied prior to March 2015.
- List each animal's age in years.

VS Form 6-22

This is the Official Recording Form for Tuberculosis Testing. A Health Certificate is <u>Not</u> a Valid Method.

PLACE ON HARD SURFACE AND WRITE FIRMLY

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0084. The time required to complete this information collection is estimated to average .2 hours per response, including the time for reviewing instructions, search existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

STATE

ALL INCOMPLETE RECORDS WILL BE RETURNED FOR COMPLETION

COOPERATIVE STATE - FEDERAL TUBERCULOSIS ERADICATION PROGRAM

TUBERCULOSIS TEST RECORD

FORM APPROVED OMB NO. 0579-0084

G 036590

COUNTY	TWP	SEC	HERD OWNER'S NAME - LAST	FIRST	MI	PREVIOUS TEST DATE	VET CODE	TOTAL	REA	SUS

HERD NUMBER

HERD OWNER'S COMPLETE ADDRESS

LESION	TEST	D-S	U

CERTIFICATION FOR PAYMENT

☐ State/Federal Expense ☐ Owner's Expense

DATE LISTED

I certify:
That this test was made and read by me on each of the cattle identified below on the dates and with the results as entered in appropriate boxes.
That when payment is claimed at program expense in accordance with agreement number below, no payment has been or will be received from any other source.

COUNTY	TOWNSHIP OR DISTRICT	SEC.	FARM NO.

REASON FOR TEST

AREA	1	RETEST	6
HERD (RB) ACCREDIT	2	TRACING REG. ILL	7
MILK ORDINANCE	3	TRACING REACTORS	8
SALE-SHOW	4	TRACING EXPOSED	9
IMPORTED	5	OTHER	10

COMPLETE HERD TEST ON ALL ELIGIBLE ANIMALS

☐ YES ☐ NO NO. ELIGIBLE ANIMALS IN HERD

KIND OF HERD

☐ DEER ☐ ELK ☐ OTHER

☐ CATTLE ☐ BISON

METHOD OF TEST

☐ CAUDAL FOLD (CFT) ☐ SNG CERVICAL (CST) (Cervid)

☐ CERVICAL (CT) (Bovine) ☐ OTHER

SUMMARY	
NEGATIVE	
SUSPECT	
REACTOR	
TOTAL	

PRACTITIONER'S SIGNATURE

TELEPHONE NO

PRACTITIONER'S NAME (Please print)

AGREE CODE

INJECTION DATE HOUR

OBSERVATION DATE HOUR

REACTORS TAGGED AND BRANDED DATE SIGNATURE

AGREE CODE

1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS SIZE	RESULTS NRK	REACTOR TAG NO.	1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS SIZE	RESULTS NRK	REACTOR TAG NO.
	1								16						
	2								17						
	3								18						
	4								19						
	5								20						
	6								21						
	7								22						
	8								23						
	9								24						
	10								25						
	11								26						
	12								27						
	13								28						
	14								29						
	15								30						

RT - Retag
NA - Natural Addition
PA - Purchased Addition

N - Negative
S - Suspect
R - Reactor

I hereby acknowledge receiving a copy of this record which I have examined and find correct.

DATE OWNER'S SIGNATURE

THIS AUTHORIZATION TO TEST EXPIRES:

VS FORM 6-22 (FEB 96)

Previous editions are obsolete

VS Form 6-22 B

This is a continuation form.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0084. The time required to complete this information collection is estimated to average .5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

U.S. DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE VETERINARY SERVICES	TUBERCULOSIS TEST RECORD - CONTINUATION SHEET Complete all entries on VS Form 6-22 before using this form.	HERD NUMBER	PAGE NO.	FORM APPROVED OMB NO. 0579-0084

HERD OWNER'S NAME - LAST	FIRST	INITIAL	DATE READ	VETERINARIAN

1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS		REACTOR TAG NO.	1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS		REACTOR TAG NO.
					SIZE	NRS							SIZE	NRS	
1								26							
2								27							
3								28							
4								29							
5								30							
6								31							
7								32							
8								33							
9								34							
10								35							
11								36							
12								37							
13								38							
14								39							
15								40							
16								41							
17								42							
18								43							
19								44							
20								45							
21								46							
22								47							
23								48							
24								49							
25								50							

VS FORM 6-22B (FEB 99) (Previous editions are obsolete.)

PART 1 - OFFICE

VS Form 6-22

PLACE ON HARD SURFACE AND WRITE FIRMLY

ALL INCOMPLETE RECORDS WILL BE RETURNED FOR COMPLETION

COOPERATIVE STATE-FEDERAL TUBERCULOSIS ERADICATION PROGRAM

TUBERCULOSIS TEST RECORD

E 191953

STATE (1)

COUNTY (2) | TWP | SEC. | HERD OWNER LAST | FIRST | INITIAL

PREVIOUS TEST DATE | VET. CODE (8) | TOTAL | REA | SUS

HERD NUMBER (4) | ROUTE-STREET-ROAD (3)

LES-ON | TEST (5) | D-B | U | POST OFFICE | STATE

COUNTY | TOWNSHIP OR DISTRICT (6) | SEC. | FARM NO.

CERTIFICATION FOR PAYMENT

☐ PROGRAM (State Federal Expense) (13) ☐ PRIVATE (Owner's Expense)

DATE LISTED (8)

I certify:

That this test was made by me on each of the cattle identified below on the dates and with the results as entered in appropriate spaces.

That when payment is claimed at program expense in accordance with agreement number below, no payment has been or will be received from any other source.

SIGNATURE (14) | AGREE. CODE

INJECTION | DATE (15) | HOUR

OBSERVATION | DATE | HOUR

REACTORS TAGGED AND BRANDED DATE | SIGNATURE (16) | AGREE. CODE

REASON FOR TEST (7)

1 AREA		6 RETEST	
2 HERD(RE): ACCREDIT.		7 TRACING: REG. KILL	
3 MILK ORDINANCE		8 TRACING REACTORS	
4 SALE-SHOW		9 TRACING EXPOSED	
5 IMPORTED		10 OTHER	

(9) COMPLETE HERD TEST OF ALL ELIGIBLE ANIMALS ☐ YES ☐ NO NO. IN HERD

(10) KIND OF HERD ☐ DAIRY ☐ BEEF ☐ MIXED

METHOD OF TEST ☐ CAUDAL ☐ VULVA ☐ CERVICAL (11)

SUMMARY (12)

NEGATIVE	
SUSPECT	
REACTOR	
TOTAL	

1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS SIZE	RESULTS NRS	REACTOR TAG NUMBER
1	(18)	(19)	(20)	(21)	(22)		(23)
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

1	IDENTIFICATION NUMBER	AGE	BREED	SEX	RESULTS SIZE	RESULTS NRS	REACTOR TAG NUMBER
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

RT - Retag
NA - Natural Addition
PA - Purchased Addition

N - Negative
S - Suspect
R - Reactor

I hereby acknowledge receiving a copy of this record which I have examined and find correct.

DATE: | OWNER'S SIGNATURE (24)

THIS AUTHORIZATION TO TEST EXPIRES: (25)

VS FORM 6-22 (JUL 75) *Previous editions obsolete*

PART 3 - OWNER

VS Form 6-22
Tuberculosis Test Record[1]

Block 1: STATE
Instructions: Enter the State name.

Block 2: COUNTY
Instructions: Use Federal Information Processing Standards county code. A list for your S State can be obtained from the Veterinary Services area office. If you cannot obtain the county code, leave the box blank. Enter the township or section code if applicable.

Block 3: HERD OWNER
Instructions: Enter the complete name and mailing address of the herd owner.

Block 4: HERD NUMBER
Instructions: The herd number is assigned by your State. If this is a retest, you should know the number. If this is an initial test, you may not know the number.

Block 5: LESION, TEST, D-B, U
Instructions: Leave blank.

Block 6: TOWNSHIP OR DISTRICT
Instructions: Fill in names of county, township, or district, section, and farm number, as applicable. (Some States have official farm numbers. IF THIS IS TRUE IN YOUR State, the numbers can be obtained from the Veterinary Services area office in your State.)

Block 7: REASON FOR TEST
Instructions: Mark the appropriate box. If you mark OTHER, state the reason.

Block 8: PREVIOUS TEST DATE
Instructions: Complete this block only if this is a retest. The Vet Code is assigned by your State.

Block 9: COMPLETE HERD TEST OF ALL ELIGIBLE ANIMALS
Instructions: Mark yes or no. Provide the total number of animals in the herd.

Block 10: KIND OF HERD
Instructions: Mark the appropriate box.

Block 11: METHODS OF TEST
Instructions: Mark the appropriate box.

Block 12: SUMMARY
Instructions: Complete this block after testing. Fill in the number of animals in each category.

Block 13: CERTIFICATION FOR PAYMENT
Instructions: Mark the appropriate box.

Block 14: SIGNATURE, AGREE, CODE
Instructions: This is a legal document; be sure to sign it. Your agrrement code is assigned by your State.

Block 15: INJECTION, OBSERVATION
Instructions: List the date and time that the injection was made and the date and time that the test was read (OBSERVATION)

Block 16: REACTORS TAGGED AND BRANDED, AGREE, CODE
Instructions: Enter the signature and agreement code of the veterinarian tagging and branding reactors. This person may be different from the one filling out the rest of the form. Include the date of tagging and branding.

Block 17: ANIMAL CODE
Instructions: Enter one of the codes listed at the bottom of the column for all appropriate animals.

Block 18: IDENTIFICATION NUMBER
Instructions: Record permanent identification, i.e., metal eartags and tattoos. If more than one is present, record them all. If none is present, apply metal eartag and record that number.

Block 19: AGE
Instructions: Record the age in years.

Block 20: BREED
Instructions: Use the two-digit breed codes.

Block 21: SEX
Instructions: Enter M (male), F (female), or N (neuter).

Block 22: RESULTS
Instructions: Record the diameter of the indurated area in millimeters in the first column. Record the result of the test in the second column: N (negative) or S (Suspect).

Block 23: REACTOR TAG NUMBER
Instructions: If reactors are present, record the reactor tag number applied.

Block 24: DATE, OWNER'S SIGNATURE
Instructions: Have the owner sign and date the form. Leave part 3 (third sheet of the form) with the owner.

Block 25: THIS AUTHORIZATION TO TEST EXPIRES
Instructions: Enter the date. It is determined by each State and may vary depending on the circumstance. Check with your State Veterinarian's office.

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[1]After completing the form, send parts 1, 2, and 5 to the State or Veterinary Services area office (check with your State), give part 3 to the owner, and keep part 4 for your records

Proper Techniques in Caudal Fold Testing - Reading the Test

- The test is read by observation and by palpation at 72 + or - 6 hours following injection.
- Animals must be restrained for reading as for the injection.
- **Check identification at the time of reading** to be certain that all cattle injected are presented for observation.
- The injection site for all tuberculin tests in cattle, sheep, & goats must be observed and palpated .
- **OBSERVATION WITHOUT PALPATION IS PROHIBITED!**
- The same veterinarian who injects the tuberculin must read the response!

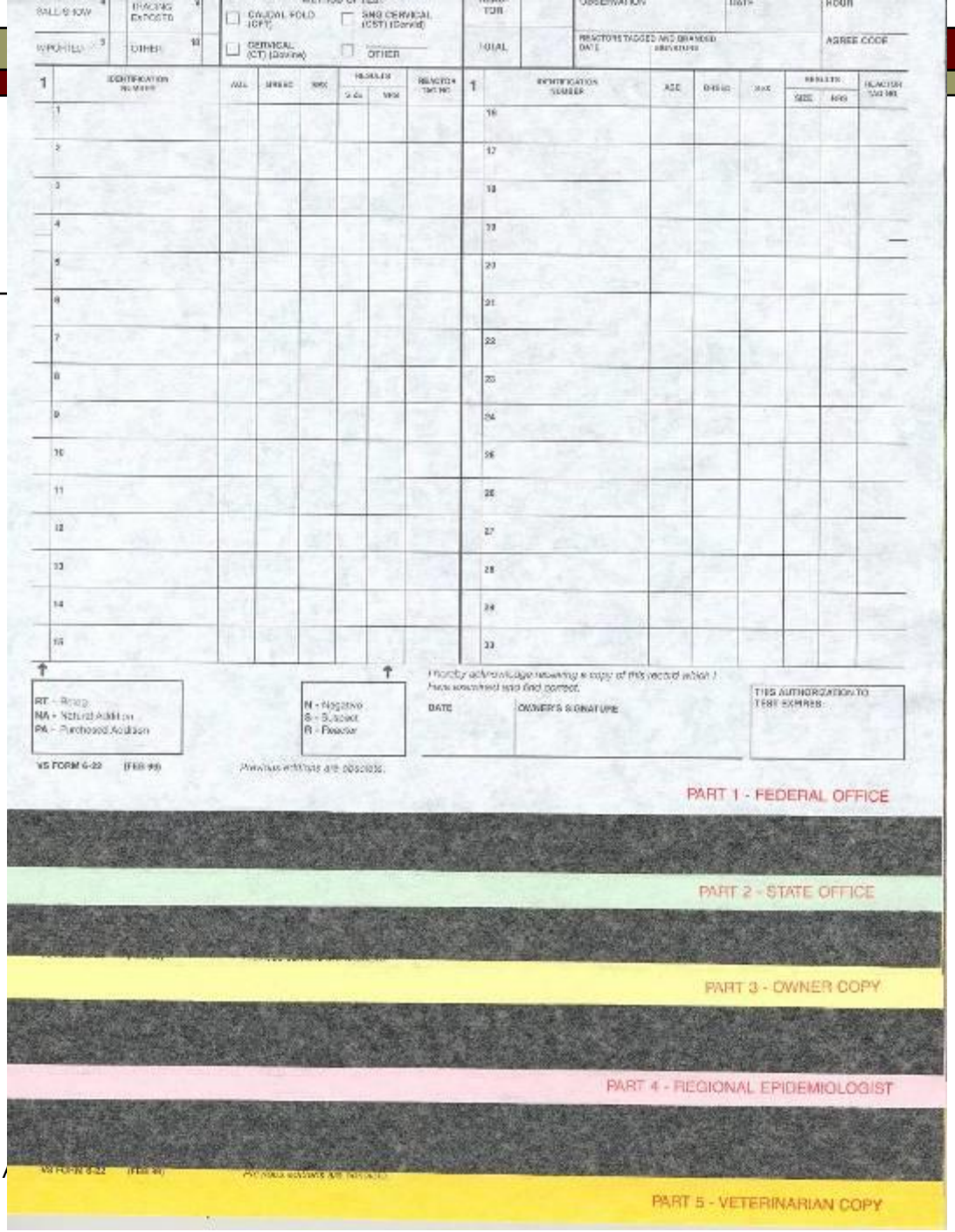
Proper Techniques in Caudal Fold Testing: Recording & Reporting Results on VS Form 6-22

- Any and ALL responses (ANY SIZE) must be reported on an official tuberculin test record.
- The actual or estimated size of the response should be recorded in millimeters of increased skin thickness in the "Results/Size" column. If there is no response, leave this column blank.
- Enter 'N' for negative, or 'S' for suspect in the NRS column. The 'R' is for reactor. Reactor classification can only be determined by an approved state or federal veterinarian.
- The testing veterinarian <u>must</u> sign the completed record and <u>copies</u> of the test record shall be <u>distributed</u> by the testing veterinarian in accordance with the cooperative State-Federal program <u>immediately</u>.

What Forms Do I Send?

Please remove all carbon and send in the white, green, and pink copies. Always keep the goldenrod copy for your records. Please give or send yellow copy to the producer/owner.

Call SDAIB for more information about electronic forms.



Proper Techniques in Caudal Fold Testing - Interpretation of the Test

- **<u>ALL RESPONDERS (Suspects)</u>: NOTIFY STATE VETERINARIAN BY TELEPHONE IMMEDIATELY**
- Require the whole herd be quarantined until:
  - Suspects are retested and found to be negative by a comparative cervical test **OR….**
  - Suspects are sent directly to slaughter and found free of internal lesions (culturing selected tissues).

Proper Techniques in Caudal Fold Testing - Expected Response Rates

- Animals not infected with M. bovis may be positive to the tuberculin test.
- The false positive rate in noninfected cattle populations is estimated at:
  - 3-5% of dairy cattle
  - 1-2% of beef cattle

Proper Techniques in Caudal Fold Testing - Other Issues

- It is important that the same veterinarian who injects the tuberculin <u>also</u> reads the response.
- In any of the following instances, Call the State Veterinarian at (605)773-3321
  - Testing Veterinarian is sick
  - Testing Veterinarian is in the hospital
  - Testing Veterinarian dies

TB Testing of Other Animals

Horses	Not reliable
Sheep/Goats	Caudal fold
Swine	Base of ear or vulvar lips
Poultry	Wattle
Cats	Not reliable
Dogs	Temperature
Monkeys	Eyelid, forearm or abdomen
Llamas	Axillary space
Cervidae	Mid-cervical region

Responsibility of an Accredited Veterinarian

- Accredited veterinarians conduct TB screening (CFT) for cattle, sheep, and goats.
- Report any response - ASAP!! via telephone.
- Whole Herd Quarantine, if a positive response, until comparative cervical test is completed by a state or federal regulatory veterinarian.
- Negative Comparative Cervical Test (CCT) - Release of whole herd quarantine.
- Suspect Comparative Cervical Test (CCT) - Retest in 60 days or send suspect to slaughter – tissues to be collected for culture.

Consequences of Improper Testing

- Loss of Accreditation
- Loss of Licensing

- Since 2005, the average rate of CFT responders in SD is 1.2%.
- Is this realistic?
- SD licensed, accredited veterinarians must maintain high standards in TB testing protocols and reporting.

TB Status Classification System

- **Accredited-free State or zone (SD – since 1982)**
  - Zero percent prevalence of TB affected cattle or bison herds
  - No findings of TB in any cattle or bison herds in the state or zone for the previous 5 years
  - Authority to enforce and complies with UM & R
- **Modified accredited advanced State or zone**
  - TB prevalent in less than 0.01 percent of the total number of herds of cattle and bison in the State or zone for the most recent 2 years.
  - Authority to enforce and complies with UM&R.

TB Status Classification System

- **Modified accredited State or zone**
  - TB prevalent in less than 0.1 percent of the total number of herds of cattle and bison in the State or zone for the most recent year.
- **Accredited Preparatory State or zone**
  - TB prevalent in less than 0.5 percent of the total number of herds of cattle and bison in the State or zone for the most recent year.
- **Nonaccredited State or zone**
  - Does not meet the standards of the UM & R
  - (OR) TB is prevalent in .5% or more of the total number of herds of cattle or bison in the state or zone

SD Cattle TB Import Requirements

- **RECREATIONAL CATTLE** (imported to SD for rodeo events, roping events, cattle cutting events, cattle penning events, and steer wrestling events, or training for such events):
  - All recreational cattle must have a negative TB test within 12 months prior to entry, regardless of age.

TB Import Requirements

- **CERVIDAE**
  - Note: SD licensed, accredited veterinarians must complete additional on-site training with a state or federal regulatory veterinarian prior to being approved to conduct such tests.
  - Negative (single-cervical) test of herd of origin 90-360 days prior to entry AND Negative (single-cervical) test of individual animals within 30 days prior to entry. (Exception: Animals coming from an Accredited-free herd with a current test date.)
- **ALL NONDOMESTIC RUMINANT-TYPE ANIMALS** (CAMELS, LLAMAS, ALPACAS, EXOTIC ANTELOPE, SHEEP, and GOATS, ETC.)(OTHER THAN CERVIDAE)
  - Negative test within 60 days prior to entry

TB requirements from Mexico

- **Mexico**
  - ALL ANIMALS imported from Mexico MUST have a negative TUBERCULOSIS test conducted by a UNITED STATES ACCREDITED VETERINARIAN in the UNITED STATES within 30 days prior to importation into South Dakota.
  - MUST have individual official identification (USDA metal eartag #s) listed on the health certificate.
- **Canada**
  - Negative TB test within 60 days required for all cattle and bison over 1 month of age.
    - EXCEPTION: Cattle and bison designated for IMMEDIATE slaughter or quarantined to a feedlot until sold to slaughter.

Summary

- Thank you for taking the time to review this information.
- As a licensed, accredited veterinarian, your vigilant efforts are the first line of defense against Bovine Tuberculosis.
- Please contact the Animal Industry Board with any questions: (605)773-3321.

SD ANIMAL INDUSTRY BOARD
411 South Fort Street
Pierre, South Dakota 57501-4503
Phone: (605) 773-3321
Fax: (605) 773-5459
aibmail@state.sd.us

Tuberculosis Screening Test

Review Questions

Please complete the following review questions and return to the SDAIB.

Veterinarian:_____ **SD License #:**_____

Address:_____ **City:**_____ **Zip:** _____

Date completed:_____

1. (True/False) Purified Protein Derivative (PPD) may be frozen for later use. When thawing, use a warm water bath at 40C.

2. Once opened, a bottle of PPD should be discarded after no more than:
   a. 2 days
   b. 10 days
   c. 2 weeks
   d. 2 months

3. Proper storage of PPD is:
   a. On a shelf in a well-lit room
   b. In the dark at 39-46 F
   c. In the dark at room temperature
   d. In a well-lit display cooler

4. (True/False) PPD must be a clear solution

5. The only needle size permitted for Caudal Fold Tuberculin Testing is:
   a. 22 gauge, ½ in. long
   b. 20 gauge, 3/8 in. long
   c. 26 gauge, 3/8 in. long
   d. 26 gauge, ½ in long

6. (True/False) Multiple dose syringes are prohibited if not graduated in .10ml or not equipped with a needle of the required size.

7. How many animals should you inject with PPD before changing the needle?
    a. 1
    b. 5
    c. 10
    d. 15

8. Acceptable forms of ID to be recorded on the test chart include:
    a. Plastic bangle tags
    b. Breed registration tattoos
    c. Breed registration freeze brands
    d. USDA Uniform Series Silver tags

9. (True/False) After the PPD has been injected by an accredited veterinarian, responses may be read by a different veterinarian, as long as he or she is licensed and accredited, and is employed by the same practice as the veterinarian who injected the PPD.

10. PPD responses must be reported on an official tuberculin test record only if they are:
    a. At least the size of a pea
    b. At least the size of a marble
    c. Any size response must be recorded
    d. Visible when the animal is walking down the test alley.

11. (True/False) Additional training with a State or Federal regulatory Veterinarian is required before a SD accredited Veterinarian is approved to conduct TB tests on cervids.

12. (True/False) The testing veterinarian has up to 2 weeks to distribute copies of the test record to the designated parties (herd owner, state vet, USDA AVIC).

13. (True/False) The testing veterinarian has up to 2 weeks to notify the State Veterinarian of any responders.

14. You are observing the caudal fold responses on 100 Hereford heifers owned by one of your best clients. The trucker is waiting impatiently for you to finish up so he can get on the road. The last animal is properly restrained, and as you palpate the caudal fold you notice a small bump, only 3mm in diameter. This is a closed herd with excellent management and biosecurity practices. What should you do:
    a. Record the responder and hold it from the shipment. Contact the State Veterinarian for follow-up testing with the comparative cervical test.
    b. Record the responder and have the owner sign the test record. The responder will be sent to slaughter and the rest of the shipment will continue to its destination, to be quarantined upon arrival until the lab results confirm the absence of TB lesions in the responder.
    c. Knowing that the false positive rate for the CFT in beef herds is expected to be 1-2%, and that the lesion is less than the size of a pea, you will record the official ID and classify the animal as negative.
    d. You record the skin measurement and call the animal a responder. You call the State Veterinarian and place all animals in the shipment under quarantine until disposition is made by the State Veterinarian.

15. (True/False) It is acceptable to visually inspect the animals without palpating the injection site.

16. (True/False) When observing responses, animals should be restrained and official identification should be read.

17. The false positive rate for the caudal fold test in dairy animals is estimated at:
    a. 3-5%
    b. 1%
    c. .1%
    d. 10%

18. It is important that the vet who does the testing must do the reading. The state veterinarian should be contacted in any case that:
    a. The testing veterinarian is sick
    b. The testing veterinarian is in the hospital
    c. The testing veterinarian dies
    d. Any of the above

19. Consequences of improper testing include:
    a. Loss of accreditation
    b. Loss of license
    c. Both a and b

20. SD TB requirements for imports include:
    a. All cattle 6 months of age or older have a negative TB test prior to import
    b. All intact animals 6 months of age or older have a negative TB test prior to import
    c. All recreational cattle must have a negative TB test prior to import.
    d. All intact dairy breed cattle must have a negative TB test prior to import.