

United States Court of Appeals,  
Eighth Circuit.  
UNITED STATES of America, Plaintiff/Appellee,  
v.  
Bradley Wayne BOSWELL, Defendant/Appellant.  
No. 00-4005.  
Submitted: May 15, 2001.  
Filed: Oct. 16, 2001.

Appeal from the United States District Court for the Southern District of Iowa.

Before WOLLMAN, Chief Judge, HANSEN, Circuit Judge, and SCHREIER<sup>1</sup>, District Judge.

SCHREIER, District J.

Dr. Bradley Wayne Boswell appeals his conviction on two counts of making false statements to the government. Dr. Boswell raises three issues on appeal. First, that the district court<sup>2</sup> erred in admitting evidence of DNA test results involving the comparison of swine serum samples. Second, that the evidence was insufficient to support the conviction on grounds he falsified the number of swine he claimed to have bled. Third, that Dr. Boswell was denied due process because the refrigerated serum samples deteriorated while kept in storage.

We affirm.

Pseudorabies is a contagious air-transmitted disease that causes respiratory and reproductive problems in swine. The Pseudorabies Eradication Program is a joint federal, state, and swine industry project designed to eradicate the disease. The program pays veterinarians on a "fee-basis" to collect blood samples from swine on Iowa farms and submit the samples to the Iowa State University Diagnostic Laboratory. The veterinarians receive \$20 for each farm visit and \$4.50 per animal from which a blood sample is drawn.

Dr. Bradley Boswell was a licensed veterinarian at the time of the events in question. Dr. Boswell's license was reinstated after it had been revoked by the Iowa Board of Veterinarian Medicine in 1991, for submitting falsified test records, failing to properly supervise employees, and violating food and drug regulations regarding use of illegal animal drugs.

Dr. Boswell agreed to work with the Animal Plant Health Inspection Service (APHIS) as a "Fee Veterinarian" under the Pseudorabies Control Agreement. Dr. Alison King, a field veterinarian employed by APHIS, asked Dr. Boswell in early 1998 to obtain serum samples from pigs on Thad Benskin's farm. Dr. Boswell claims he bled some of the samples in February of 1998 with the assistance of Thad Benskin, and later returned to the farm and bled the rest of the animals with the help of his friend Bart Elder. In total, Dr. Boswell submitted one hundred and twenty samples from the Benskin farm to the ISU laboratory. Some of the blood serum samples tested positive for pseudorabies.

Dr. Boswell was surprised to learn that some of the samples had tested positive for pseudorabies. He then resubmitted allegedly identical samples to the ISU laboratory, claiming that he used the serum kept on reserve from the prior month's bleeding. All of the resubmissions came back negative. Dr. Boswell also claims he decided to re-bleed and re-submit sixty samples from the Benskin farm. New samples arrived at the ISU lab on March 10 which also tested negative.

Dr. King was suspicious that test results from the same animal could move from positive to negative. Based on this suspicion, King and a group of federal veterinarians re-tested some of the swine on the Benskin farm. The federal investigators drew blood from a random sample of thirty sows and approximately 40 percent of the thirty sows tested positive for pseudorabies.

Dr. King then sent Dr. Boswell's original and resubmitted samples to the National Veterinarian Service Laboratory (NVSL). A lab technician at NVSL concluded that the original and resubmitted samples appeared to be adulterated. NVSL was also skeptical of Dr. Boswell's assertions that the sets of samples he submitted were from the same animal. NVSL sent some of the two sets of samples to Stormont Laboratories for additional testing. Stormont tested the DNA of Dr. Boswell's submissions by using a process called polymerase chain reaction (PCR). Stormont concluded that the paired samples were not from the same animals.

Dr. Boswell was charged by indictment with nine counts of making false statements and two counts of witness tampering. Count Two was dismissed at the government's request prior to trial. The district court entered a judgment of acquittal on the two counts of tampering with a witness and the jury acquitted Dr. Boswell of six counts of making a false statement. The jury convicted Dr. Boswell on two counts of making false statements in violation of 18 U.S.C. S 1001 (Counts Four and Five). These two counts of conviction involved separate written representations Dr. Boswell made on separate official government Pseudorabies Serology Forms with respect to the Benskin swine herd. Count Four charged that Dr. Boswell's written statement on the February 1998 form that he had obtained the 120 blood samples from the Benskin herd in February 1998 was false because Dr. Boswell "well knew that he had bled less (sic) than 120 swine." Count Five charged that the form submitted in March 1998, with the thirty blood samples from serum that Dr. Boswell claimed were from the same hogs bled at the Benskin farm in February 1998, was false because he then "well knew these [thirty] specimens were not from the same swine, and that he had not submitted specimens in accordance with federal and state regulations and instructions issued by the Veterinarian-in-Charge."

#### I.

Dr. Boswell contends the district court abused its discretion by admitting into evidence DNA test results taken from swine serum samples Dr. Boswell submitted to ISU laboratories. A district court's admission of DNA evidence is reviewed under an abuse of discretion standard. See: *United States v. Beasley*, 102 F.3d 1440, 1445 (8th Cir.1996), cert. denied, 520 U.S. 1246, 117 S.Ct. 1856, 137 L.Ed.2d 1058 (1996). This court must determine whether or not the district court made a clear error of judgment in weighing the facts on the basis of the record before it. See: *United States v. Bahema*, 223 F.3d 797, 809 (8th Cir.2000).

The admission of scientific expert testimony is dependent upon the court's determination that the proposed testimony constitutes (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue. See: *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993). The district court serves as a "gatekeeper" for the admission of novel scientific evidence. See: *United States v. Martinez*, 3 F.3d 1191, 1196 (8th Cir.1993). The district court must conduct a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and whether that reasoning can be applied to the facts at issue. See: *Daubert*, 509 U.S. at 591, 113 S.Ct. at 2796. The factors the district court may consider include: (1) whether a theory or technique can be (and has been) tested; (2) whether the theory or technique has been subjected to peer review and publication; (3) the known or potential rate of error; and (4) whether the technique is generally accepted. *Id.* at 593-94, 113 S.Ct. at 2795-96.

There is sufficient evidence that the district court was justified in permitting the admission of PCR test results of the swine DNA. First, the PCR process is approximately ten years old and it has undergone extensive testing. See: *United States v. Gaines*, 979 F.Supp. 1429, 1435 (S.D.Fla.1997). Numerous courts have recognized the multitude of scientific articles endorsing the use of PCR analysis for forensic purposes. See: *id.* at 1436. This court previously found PCR testing to be an accurate method of analysis when a protocol that conforms to guidelines accepted by members of the forensic community are followed and controls are employed. See: *Beasley*, 102 F.3d at 1446. While the Beasley analysis applied to PCR testing of human DNA, there is no evidence the district judge erred by extending the same analysis to PCR testing of swine blood. In fact, Michael Spencer, a scientist with a biotechnology company called Celera Aggen, testified that the method of PCR testing on swine DNA is an acceptable and recognized test in the DNA testing community.

Dr. Boswell asserts that Michael Spencer's "backhand (and incompetent) testimony" regarding the PCR method of DNA testing and the protocol at Stormont did not lay sufficient foundation for the admission of the lab results. The record does not support Dr. Boswell's characterization of Mr. Spencer's testimony. Mr. Spencer is a biochemist from the University of California, at Davis. After graduation Mr. Spencer was employed by the University of California, at Davis, in the department of biological chemistry at the School of Medicine. Mr. Spencer was later employed at Stormont from 1992 until 1998 and was involved solely in animal DNA testing.

Dr. Boswell also contends that even if the PCR method of DNA testing on swine blood is accepted in general, the results would still be inadmissible in this case because no protocol was followed. This assertion is not supported by the record. Although no written protocol for the analysis of swine blood at Stormont was introduced, Mr. Spencer did describe the method and procedures used to do the PCR analysis and, as mentioned above, verified that the procedure was an accepted one among DNA experts. Mr. Spencer testified that he performed the DNA tests on the blood samples submitted by Dr. Boswell and he detailed the reacting components he used in the process. Mr. Spencer also stated that the methodology he used is like a recipe where the amount of an ingredient may be varied, but the testing methodology has the same basic components. Dr. Boswell further argues that the test was not reliable given the condition of the samples. This assertion is

contradicted by Mr. Spencer who stated that the samples were delivered in a sealed container by express courier and were then stored in a secure laboratory refrigerator.

This court previously held that any alleged deficiencies must so alter the PCR methodology as to make the test results inadmissible. See: *Beasley*, 102 F.3d at 1448. Dr. Boswell failed to prove that there were significant deficiencies in the protocol and procedure used by Stormont Laboratories. Consequently, the alleged deficiencies go to the weight to be given the DNA evidence, not its admissibility. See: *id.*; *United States v. Johnson*, 56 F.3d 947, 953 (8th Cir.1995). We, therefore, conclude that the district court did not abuse its discretion in admitting the government's DNA evidence.

## II.

Dr. Boswell claims there was insufficient evidence for a reasonable jury to have found that he falsified Pseudorabies Serology Forms by overstating the number of animals he bled. This court examines the evidence in the light most favorable to the government and provides the government with the benefit of all reasonable inferences. See: *United States v. Wilson*, 49 F.3d 406, 409 (8th Cir.1995). The jury's verdict must be upheld if any interpretation of the evidence allows a reasonable jury to find guilt beyond a reasonable doubt. See: *United States v. Easley*, 70 F.3d 65, 67 (8th Cir.1995).

Count Four of the indictment alleges that Dr. Boswell falsified the number of swine he claims to have bled at the Benskin farm. Dr. Boswell asserts that viewed in the light most favorable to the government, it must be concluded that Dr. Boswell bled forty-sixty pigs with Thad Benskin and later returned to the Benskin farm and bled "a lot" of pigs with Bart Elder. Dr. Boswell contends that based on this premise a reasonable jury could not have found a calculation that he bled 120 pigs was an overstatement. The court disagrees. First, there is evidence in the record that Mr. Elder never stepped foot on the Benskin farm, let alone bled pigs there. Second, even if this court were to accept this premise of Dr. Boswell, the conclusion that a reasonable jury must equate "a lot of pigs" with sixty to eighty pigs is wrong. We, therefore, conclude a reasonable jury could have determined that Dr. Boswell did not return to the Benskin farm with Mr. Elder, or that if he did visit the farm, he did not bleed sixty to eighty pigs.

Dr. Boswell's next assertion is that no reasonable jury could have reached the conclusion that when he submitted the serology form for the thirty samples of the resubmission, he knew they were not a resubmission of the thirty prior samples from the Benskin farm, as was alleged in Count Five. The first thirty samples that Dr. Boswell submitted were received by ISU laboratory on February 21, 1998, and the second set of thirty samples were received on March 3, 1998. Dr. Boswell contends the samples were from the same swine and the same bleeding. Dr. Boswell's assertion is contradicted by the scientists who received the submitted and resubmitted samples. The DNA tests conducted by Stormont provided evidence that the samples originally submitted by Dr. Boswell were not from the same animals as the second submission. We, therefore, conclude that a reasonable jury could have determined Dr. Boswell falsified the submissions.

## III.

Dr. Boswell contends that Counts Four and Five should have been dismissed because the government knowingly allowed the swine serum samples to degrade. We defer to the district court's factual findings with regard to the destruction of evidence. See: *United*

*States v. Clark*, 980 F.2d 1143 (8th Cir.1992). A clearly erroneous standard of review must be applied to the district court's determination that the government acted in good faith. See: *United States v. Ramos*, 27 F.3d 65, 67 (3d Cir.1994); *United States v. Bohl*, 25 F.3d 904, 909 (10th Cir.1994).

Dr. Boswell asserts that the government exhibited bad faith by knowingly allowing the swine serum samples to deteriorate. This presumption is contradicted by the affidavit of Dr. Boswell's expert witness, Dr. Christopher Chase. Dr. Chase states that: "In order for the samples of blood or serum to remain in a condition which would accurately reflect the sample was in the same in vivo condition from the animal, the samples must remain either refrigerated or frozen." The samples in question were preserved in such a manner for testing according to the policies of ISU laboratories and NVSL personnel, and despite these efforts the samples deteriorated naturally over the course of time.

The Due Process Clause of the Fourteenth Amendment does not require that law enforcement agencies preserve samples in order to introduce the results at trial. See: *California v. Trombetta*, 467 U.S. 479, 491, 104 S.Ct. 2528, 81 L.Ed.2d 413 (1984). Unless the defendant can show bad faith on the part of law enforcement, "failure to preserve potentially useful evidence does not constitute a denial of due process of law." *Arizona v. Youngblood*, 488 U.S. 51, 58, 109 S.Ct. 333, 337, 102 L.Ed.2d 281 (1988). Dr. Boswell had the opportunity to raise the issue of the evaporated serum at trial and to impeach the reliability of the test results, and therefore had the opportunity to raise doubts in the mind of the jury. Furthermore, the immediate case is distinguishable from the case cited by Dr. Boswell, *United States v. Bohl*, 25 F.3d 904 (10th Cir.1994). The government intentionally destroyed evidence in Bohl. There is no record of that occurring in this case. We conclude that Dr. Boswell was not deprived of his due process rights by the degradation of the swine samples.

The judgment is affirmed.

---

<sup>1</sup> The Honorable Karen E. Schreier, United States District Judge for the District of South Dakota, sitting by designation.

<sup>2</sup> The Honorable Harold D. Vietor, United States District Judge for the Southern District of Iowa.