

**APPENDIX 7: QUALITY CONTROL OF PORCINE ZONA PELLUCIDA CONTRACEPTIVE  
VACCINE**

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Porcine zona pellucida (PZP) contraceptive vaccine is prepared at The Science and Conservation Center (SCC) according to modified techniques of Dunbar et al. (Biochemistry 80: 356-365, 1980). Each batch of PZP, which constitutes about 200 horse doses of 100 ug each, is subjected to a series of quality control tests. These tests include:

1. **Quantitative analysis:** The actual protein content of each batch is determined by a whole protein assay. The assay is the Bio-Rad DC (detergent compatible) protein assay, which is a modified method of Lowry, et. al. (J. Biol. Chem. 193:265,1951).
2. **Qualitative analysis:** Each batch of PZP is subjected to polyacrylamide gel electrophoresis (PAGE), which separates and illustrates all proteins included in the PZP. All PZP made by any lab contains some soluble proteins that cannot be removed completely, such as albumins and perhaps some collagens, and the gel identifies the presence of these proteins, as well as the ZP proteins. Gels are dried and kept on file at the SCC.
3. **Viral testing:** Samples of PZP are sent to the USDA laboratory at Ames, Iowa for testing for pathogenic hog viruses, including PRRS, pseudorabies, encephalomyocarditis, hemagglutinating encephalomyelitis, transmissible gastroenteritis, parvovirus, swine influenza, rotovirus, adenovirus and enterovirus. Most of these are hog specific viruses.
4. **Bacterial screen:** All vaccine is plated on blood agar plates to determine if any bacteria, gram positive pathogens, or others are present.

The results of quality control for each batch are stored at the SCC. The purpose is to be able to counter any claims that the vaccine is harming the animals or causing diseases or toxicity. To date, SCC produced PZP is the only PZP vaccine that is subjected to this entire quality control process.