

VERMONT AGENCY OF AGRICULTURE, FOOD & MARKETS
FOOD SAFETY CONSUMER PROTECTION DIVISION
Meat Inspection Service
MONTPELIER, VT
Chuck Ross, Secretary



MIS DIRECTIVE

Adopted from FSIS Directive 6100.8

6100.8

11/1/13

INSTRUCTIONS FOR VERIFICATION OF IMPROVEST® HOGS

I. PURPOSE

This directive instructs inspection program personnel (IPP) to use the Improvest® Quality assurance certificate as documentation to determine whether hogs processed under the Improvest® program are classified as barrows. If intact male hogs are presented for slaughter without a Quality Assurance Certificate, IPP will address these animals as intact boars.

II. BACKGROUND

A. **IMPROVEST®** (*gonadotropin releasing factor analog--diphtheria toxoid conjugate*) is a Food and Drug Administration (FDA)-approved pre-slaughter treatment given to growing intact male pigs for the temporary immunological castration (IC) (suppression of testicular function) and reduction of boar taint (an unpleasant aroma or taste that can occur in cooked pork from some male pigs) in intact male pigs intended for pork for consumers. It is the only product of this type approved in the US for pigs. It is a protein compound that uses the pig's own immune system to provide the same effect as surgical castration, but Improvest® is administered much later in the pig's life than surgical castration. Both immunological and surgical castration reduces boar taint. Immunological castration temporarily blocks the biological cascade that leads to the development of androstenone and skatole, which are the substances responsible for causing boar taint. Immunological castration is distinctly different from chemical castration and should not be confused with or referred to as chemical castration.

B. The prepuce pouch (or sheath) of any male pig's reproductive tract can trap urine, bacteria, and semen, giving it a pungent smell. The pungent odors from the prepuce pouch should NOT be confused with boar taint in pork fat that can only be detected by individuals sensitive to androstenone or skatole once fat is sufficiently heated. Different than the prepuce pouch pungent smell, the sources of boar taint are primarily two substances in the fat tissue, androstenone (produced by the testicles) and skatole (a byproduct of tryptophan metabolism in the pig's large intestine), that begin to accumulate as the male pig matures. As part of sanitary dressing, it is important when removing the prepuce pouch during the slaughter process that it is not punctured or cut as it can spill the contents of the pouch and contaminate the carcass and emit an unpleasant odor.

DISTRIBUTION: Electronic

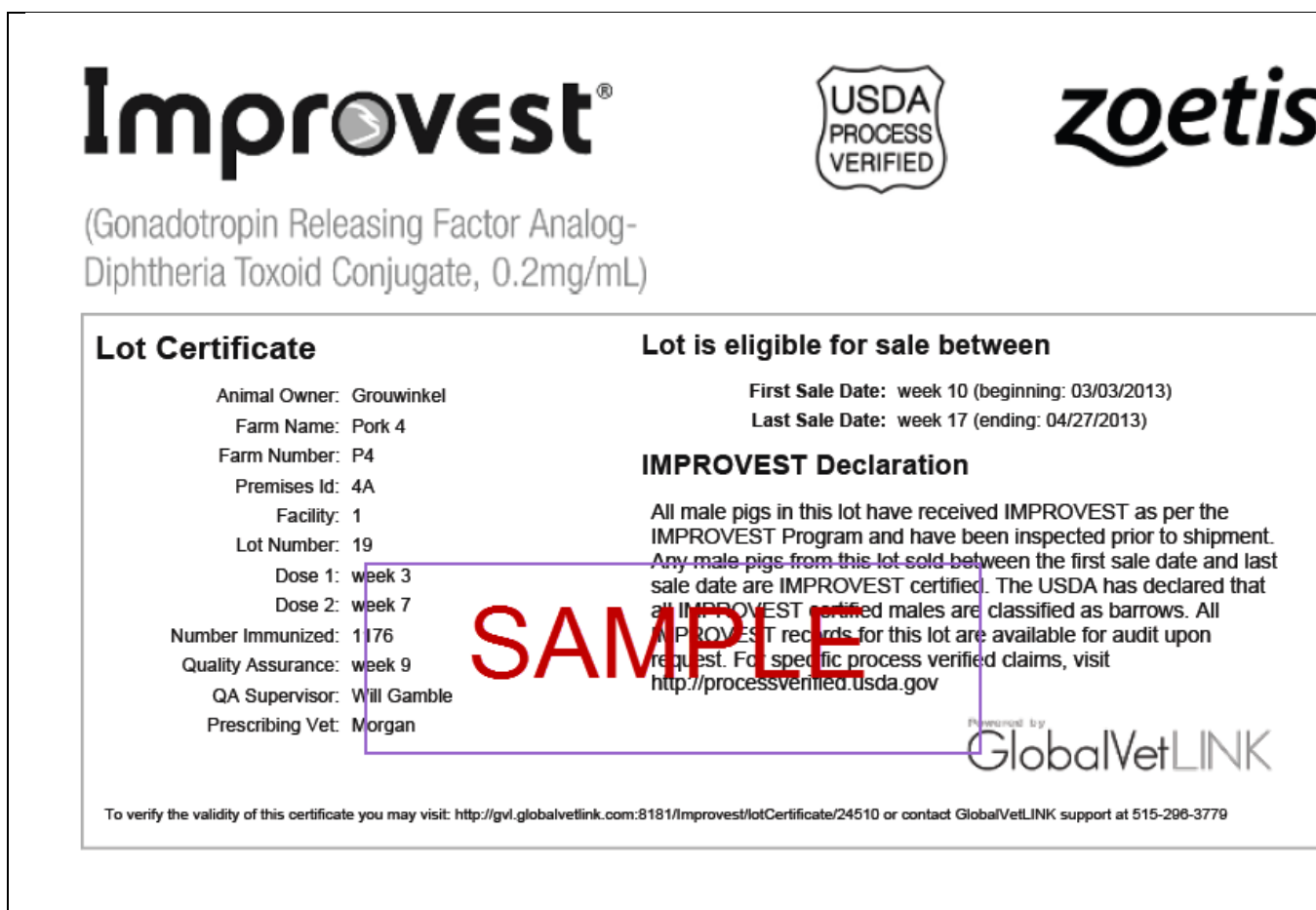
OPI: OPPD

C. There are at least three comparable characteristics that can be observed on ante-mortem between IC barrows and mature boars. These include but are not limited to: 1) reduction in aggressive, sexual behavior compared to mature boars; 2) visual differences in the relative size of testes (reduced in the IC barrows); and 3) color of the scrotum (IC barrows will typically not have reddened scrotums). There are other indicators that are covered in additional information (see Section II.G).

D. When IC barrows are delivered for slaughter under the Improvest[®] program, there needs to be coordination among the establishment procurement employees, establishment operations, and IPP in the establishment. Although communication will be among establishment procurement, establishment management, and the IPP, the Office of Policy and Program Development (OPPD), Policy Development Staff (PDS) is available for consultation and technical guidance, if needed.

E. To qualify as slaughter barrows, IC barrows should be delivered for slaughter to an establishment with a Quality Assurance Certificate (see Figure 1). This document, issued by the manufacturer, certifies that animals have received **IMPROVEST**[®] in compliance with the FDA approved label and have been inspected for animal behavior and visual appearance on the farm to fully qualify as IC barrows before being loaded and delivered to the slaughter establishment. If intact male hogs are delivered for slaughter without a Quality Assurance Certificate, IPP are to address these animals as intact boars (see Section III.B).

Figure 1: Example of an Improvest[®] Quality Assurance Certificate



The image shows a sample of an Improvest Quality Assurance Certificate. At the top, there are three logos: the Improvest logo, the USDA Process Verified logo, and the Zoetis logo. Below the logos, the text reads "(Gonadotropin Releasing Factor Analog-Diphtheria Toxoid Conjugate, 0.2mg/mL)". The certificate is divided into two main sections: "Lot Certificate" and "Lot is eligible for sale between". The "Lot Certificate" section lists details such as Animal Owner (Grouwinkel), Farm Name (Pork 4), Farm Number (P4), Premises Id (4A), Facility (1), Lot Number (19), Dose 1 (week 3), Dose 2 (week 7), Number Immunized (1176), Quality Assurance (week 9), QA Supervisor (Will Gamble), and Prescribing Vet (Morgan). The "Lot is eligible for sale between" section lists the First Sale Date (week 10 beginning 03/03/2013) and the Last Sale Date (week 17 ending 04/27/2013). Below this is the "IMPROVEST Declaration" which states that all male pigs in the lot have received Improvest and been inspected prior to shipment. A large red "SAMPLE" watermark is overlaid on the center of the certificate. At the bottom right, it says "Powered by GlobalVetLINK". At the bottom left, there is a URL to verify the certificate's validity: <http://gvl.globalvetlink.com:8181/improvest/lotCertificate/24510> or contact GlobalVetLINK support at 515-296-3779.

F. The manufacturer of **IMPROVEST**[®] has received a USDA, Agriculture Marketing Service (AMS) Process Verified Program for the **IMPROVEST**[®] Quality Management System for the Quality

Assurance (QA) certification program.

2

G. For additional information on **IMPROVEST**® access the PowerPoint presentation [Preview of FSIS Requirements Associated with Slaughter of Immunologically Castrated "Barrows"](#) and [IMPROVEST® FAQs](#) via askFSIS.

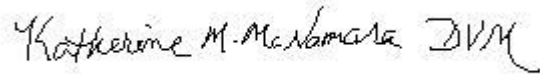
III. IPP RESPONSIBILITIES

A. IPP are to classify hogs as barrows when an establishment presents the Quality Assurance Certificate before ante-mortem inspection. This classification alleviates questions about any biological variation in the testes or the secondary sex organs that may be observed at slaughter.

B. If intact male hogs are presented for slaughter, and there is no Quality Assurance Certificate, IPP will address these animals as intact boars, and the disposition will be made either under [9 CFR 311.37 \(c\)](#) or [9 CFR 311.20 \(a\) or \(b\)](#) to pass for food, pass for cooked comminuted food, or condemn as appropriate.

IV. QUESTIONS

Questions can be referred to the meat inspection office at 802-828-2426.



Assistant State Veterinarian
VT Meat Inspection Service

3