

Vion has an intensive private monitoring program on residues of veterinary drugs. This program is being operated on top of the governmental monitoring program, The Vion program covers EU regulations and is the result of a hazard analysis as part of the Vion HACCP-based Food Safety Control Program.

### **Hazard analysis**

Vion has an extensive hazard analysis in which all hazards that are identified are described in detail and the associated risks are assessed. To perform the hazard analysis, relevant data in scientific literature was collected and summarized, combined with information from other trusted sources like EFSA, WHO, FDA, CDC etc.

The hazard analysis is done according to the following structure.

1. A description is given from the hazard; this description characterizes the hazard.
2. The associated consequences for human health are described and the frequency of occurrence in humans is given.
3. The behavior of the hazards in the supply chain is described; how does the hazard spreads in the supply chain and what happens with the hazards in the different parts of the supply chain.
4. Finally the control of the hazard is described.

On a regular basis and whenever there is a change in the supply chain, the hazards are being reassessed.

### **Monitoring program for veterinary drugs**

The hazard analysis leads to effective control procedures such as the Vion monitoring program for veterinary drugs. This program is part of the Supply Chain Inspection and is verified by the competent authority; NVWA.

The monitoring program for veterinary drugs is using a risk-based approach to select which carcasses to sample in the monitoring program. This is done based on relevant Supply Chain Information and results on average between 30 and 50 samples per day. All samples are analyzed by Wageningen Food Safety Research which is the Dutch official reference laboratory for food safety.

### **Sampling**

From the selected carcasses a kidney and a piece of meat is collected. Because the pigs have an individual identification number on their ear tag containing the unique farm number, the collected material is fully traceable to the farm of origin.

#### **Appendix 1**

#### **Sample procedure lean meat for residue analysis**



Check and document the ID of the carcass (ear tag)



The meat sample is to be collected from the neck area of the carcass



Make sure to collect lean meat without too much fat covering. The piece should be approximately the size of a man's fist.



Make sure there is a minimum of 150 gram of lean meat available in the sample

### **Screening and determination of substances.**

The kidney is used for screening purposes. For this part of the procedure pre-urine is used for the first screening step. This is followed by a post screening method which uses both kidney tissue as well as the meat (ref. Nouws antibiotic test: Validation of a post-screening method for antibiotic residues in kidney, Mariël G. Pikkemaat et al. Food Control 20 (2009) 771–777)

The last step in determining the identity of the substance and its concentration level is done with Liquid chromatography–mass spectrometry for which the meat is used.

### **Results**

In the table below shows the results of all analyses of the 4 years 2016, 2017, 2018 and 2019.

	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b> till dec.
<b>Pork NL</b>	(10.1.c )	(10.1.c )	(10.1.c )	(10.1.c )
<b>% of tests &gt;MRL</b>	10.1.c	10.1.c	10.1.c	10.1.c

Substances identified are:

- Oxytetracycline (10.1.c)
- Doxycycline (10.1.c)
- Penicillin (10.1.c)
- Trimethoprim (10.1.c)
- Sulfonamide (10.1.c)

### **Corrective and preventive measures**

All sampled carcasses are kept out of the further production process of pork eligible for export to 10.2.a .

In the case a sample shows a positive response in the second screening step the farmer is notified of the finding and a root cause analysis is carried out. The root cause analysis is documented and these reports are part of the verification done by the NVWA.

When the Liquid chromatography–mass spectrometry result shows a result exceeding the Maximum Residue Level the NVWA gets notified immediately by the laboratory without any intervention of the private company.

### **Verification by the Competent Authority**

The private monitoring program on residues of veterinary drugs is integrally verified by the competent authority on different levels.

- 1) The sampling of the carcasses (kidney and meat) is done under supervision of the competent authority during the slaughter process.
- 2) The samples are analysed at the Dutch official reference laboratory for food safety.
- 3) The procedures are part of the annual audits on both the different abattoirs as wells as during the annual central audit carried out by the NVWA.

### **2-amino-flubendazole**

The group of Benzimidazole (to which Flubendazole and Fenbendazole belong) are EU approved anthelmintic in pig farming. Residues of anthelmintic below MRL are recognised as safe for human consumption.

After the notification of the finding of 2-amino-flubendazole we investigated the possibilities to incorporate this substance in the active monitoring program. For this substance the Liquid chromatography–mass spectrometry is the preferred method of detection.

Different meat samples were selected from samples collected for the monitoring program on residues of veterinary drugs at Wageningen Food Safety Research. These samples are representing multiple months of production (sept – dec 2019) and representing all slaughter sites eligible for export 10.2.a are currently being analyzed by Wageningen Food Safety Research. The results are expected to be reported in the upcoming weeks.

To systematically control the risk of pork eligible for export to 10.2.a 10.2.a have residues of 2-amino-flubendazole the next control measures are taken:

- The use of flubendazole will no longer be part of Good Agricultural practices at the farm where fattening pigs are raised;
- Residues of flubendazole are part of the active monitoring program.

Attached: Nouws antibiotic test: Validation of a post-screening method for antibiotic residues in kidney, Mariël G. Pikkemaat et al. Food Control 20 (2009) 771–777