

Giving injections

Background

Many disease problems are best treated by the injection of medication. In addition pigs are given routine vaccinations at various stages in their life and other regular treatments such as iron injections for piglets are carried out. These treatments will only be effective if the injection technique is correct. All medicines and vaccines given to pigs also need to be recorded in detail in order to satisfy legal and food safety requirements.

Procedure

The procedure involves selection of the correct equipment, checking the appropriate dosage rate and administering an injection both intramuscularly or subcutaneously observing the correct safety procedures. The most important aspects are:

Hygiene: Poor hygiene may lead to an infection or abscess at the injection site. The procedures include thorough washing of the hands and cleaning the injection site if necessary. Ideally disposable syringes and needles should be used with regular replacement of needles. The suggested replacement policy is: sows and boars - 10, nursery and finisher pigs 15-20, piglets 30 (3 litters). If non-disposable equipment is used it must be sterilized after use and stored in alcohol.

Correct dose: The correct amount of injected product is vital to effectiveness especially with vaccines where the amounts injected are small and there is little room for error. Injection of too much product is wasteful and adds to the cost. In the case of medicines the correct dosage rate for the individual animal or group of pigs is calculated from the dosage rate given on the bottle label and estimated body weight e.g. 1ml per 10kg. The **Treatment protocols** give the product to use and the dosage rate for a range of conditions for each department, while the precise dose per pig can be assessed using the **Calculating the correct dose of medication** procedure.

Correct syringe and needle size: The syringe selected must hold sufficient product for the dosage being given. Needle size is more critical and must be appropriate to the size of pig and the method of injection being used. The table overleaf shows the correct types of needle to use. It is essential that blunt or damaged needles are never used.



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Procedure (cont'd)

Needle length and gauge									
Pig type	weight (kg)	Intramuscular				Subcutaneous			
		length		gauge		length		gauge	
		mm	ins	mm	g	mm	ins	mm	g
Piglet	1 - 7	16	$\frac{5}{8}$	0.6 -0.8	23-21	---	---	---	---
Nursery pig	7 - 20	25	1	0.7 -1.2	21-18	---	---	---	---
Feeder pig	20 - 40	25	1	1.2	18	---	---	---	---
Finisher	40 -120	38	$1\frac{1}{2}$	1.4	16	---	---	---	---
Gilt	100 -140	50	2	1.4	16	25	1	1.2	18
Sow/boar	140+	50	2	1.4	16	25	1	1.2	18

Incorrect needle length may result in the product being injected into the wrong tissue, for example an intramuscular injection going into fatty tissue. This will reduce the effectiveness of the product or at worst make it totally ineffective. Using too large a needle will cause unnecessary distress to small pigs and possibly cause damage.

Injection technique: There are two main methods of injection, into the muscle tissue (intramuscular) or under the skin (subcutaneous). Intramuscular injection should be into the neck unless otherwise advised. The correct site is towards the top of the neck, above and behind the area of loose skin behind the ear. It is important that the needle enters at 90° to the skin, which is normally a horizontal position if the pig is standing. Subcutaneous injections are more difficult because they require greater precision in placing the product between the skin and the underlying tissues. The site of injection is the area of loose skin in the hollow behind the ear. A fold of skin is created by pinching together with the thumb and forefinger, then the needle is inserted at a slight angle to run under the skin and beneath the fold.

Identification and recording: Recording of all medicines administration is a legal requirement in many countries. The primary aim is to minimize the risk of medicines residues in pigmeat. This may occur where a pig is sent for slaughter before the end of the withdrawal period for the product used.



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Withdrawal periods which are shown on the medicines bottle label and in the farm **Treatment protocols**, must be strictly observed. This requires the **Medicines treatment record** to be filled in correctly which shows the date when the pig becomes outside the withdrawal period. Clear identification of the pig(s) treated which may involve tags for finishers or breeding stock and spray marks for other pigs, is necessary so that a treated pig is not sent to slaughter by mistake. In the case of gilts, sows and boars short details of treatment including the date, condition and product used and clearance date should be noted on the animal's individual record card.

Operator safety: Clearly there are some risks in using needles which penetrate skin so easily. The main risk comes from careless handling of needles or movement of the pig during injection. Needles should always be protected with a plastic cap when not in use. Where pigs are likely to be difficult to inject, especially with finishers and breeding stock, they should be restrained or snared*. The physical injury caused by accidental self injection is unlikely to be serious but if some product is injected, medical attention may be required. Data sheets for all injectable products which indicate the actions to be taken should be available in the farm office. Some oil-based vaccines have more serious effects if injected and in this case immediate medical help should be sought.

Correct disposal of waste: Veterinary waste should always be disposed of correctly, which usually involves removal and incineration by a specialist waste disposal company. Used needles should be placed in a special "sharps" container immediately until removal takes place. Detailed procedures for all types of potentially hazardous materials are given in the farm **Waste disposal protocol**.

