PIG newsletter

Month end date	EU Spec GB SPP (p/kg)	Change on month (£)	Average Pig Weight (Kg)	UK weekly clean kill-000head	LIFFE wheat futures (£/tonne)	Soyameal 46% Braz. (£/tonne) ex store L'pool
February	149.75	-0.91	83.27	192.2	146.4	329

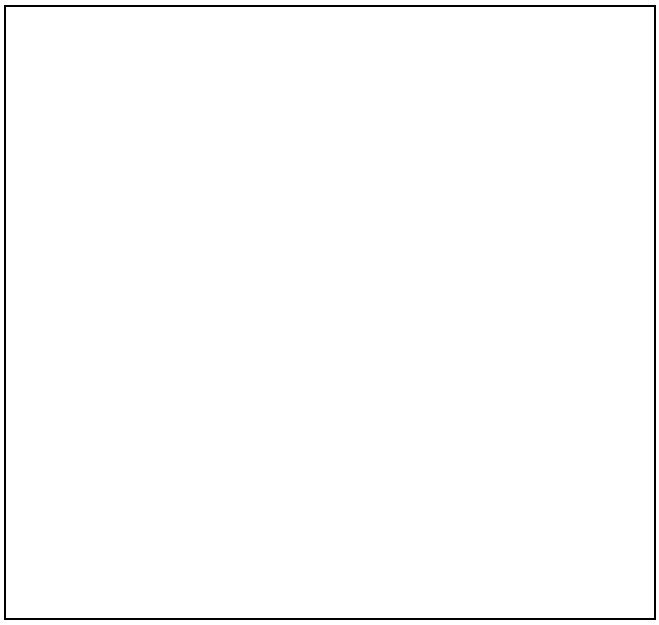
The EU funded project aims to end tail docking of pigs through decreasing tail biting risk by environmental enrichment and developing better early warning tools of impending problems.

Tail docking, a painful procedure carried out soon after birth considered necessary to reduce the risk of tail biting- can result in chronic pain and infection at the wound site **causing up to 30% production losses in severe outbreaks.** Key objectives of the FareWellDock project were to estimate the relative harms associated with tail docking and tail biting.

Your vet can test for PRRS virus in pigs by taking blood samples, saliva samples or throat swabs. The lab can detect if PRRS is present and if so, confirm the genotype. Blood samples can also be used for serology, confirming whether or not a pig has got antibodies to the virus from a previous infection. Herds that regularly monitor for freedom from PRRS virus (such as boar studs and multiplication herds) usually do both types of tests to provide the best available information.

What else can we find out?

When samples test positive we can send the viral RNA extracts to the Animal and Plant Health Agency (APHA) where they can carry out extra tests to find out more about strain types of PRRS virus. They sequence the virus from the samples and test it against all the information that they have on strain types. That shows how closely related a strain is to the vaccine strains, for example, or strains from other units. This can be helpful when trying to trace potential sources of infection in new disease break-downs. The sequencing information is presented on a type of genetic 'tree', as shown in the diagram below. Each of the branches represents different "families" of the virus.



What can we do to control PRRS?

In infected herds, it is important to have a regular vaccination programme to maintain a stable immunity in the herd. This involves vaccinating all adult stock and weaners. The strategy is combined with using good herd management including all-in, all-out systems for growing pigs so age-groups are not mixed and any poor-doing pigs not held back and mixed with younger animals.

PRRS virus can be eradicated from herds successfully. It is worth farmers working together to consider a regional approach to eradication, thereby reducing the risks of re-infection from nearby herds. National eradication has been carried out successfully in some countries e.g. Switzerland.

A similar program could bring huge health and financial benefits to the Scottish industry, and something that pig

Another Royal Highland Show done and dusted and another record breaking year with 190,000 visitors reported to have attended. This year the Pig Information Group had a dedicated stand alongside SAC Consulting in the SRUC stand.

On offer over the four days of the show were pocket sized information cards, providing research and advice for reducing mortality (both stillbirths and pre-

Heating buildings using slurry? A great opportunity or just hot air.

There is a chance you may have heard of ground or air sourced heat pumps, but not many have heard of *Slurry Sourced Heat Pumps*. However could this be the future of heating in pig units?

Heat pumps are often described as fridges in reverse. In fact they are just fridges running in exactly the same way, the equipment on a fridge takes heat from the inside of the fridge and *moves* it to the outside of the fridge. In a heat pump it takes heat from a source and moves it to where you want it, a room, a hot water cylinder, a heat pad perhaps.

Most heat pumps are compressor based heat pumps, for the working principles of compressor heat pumps see Figure 1.

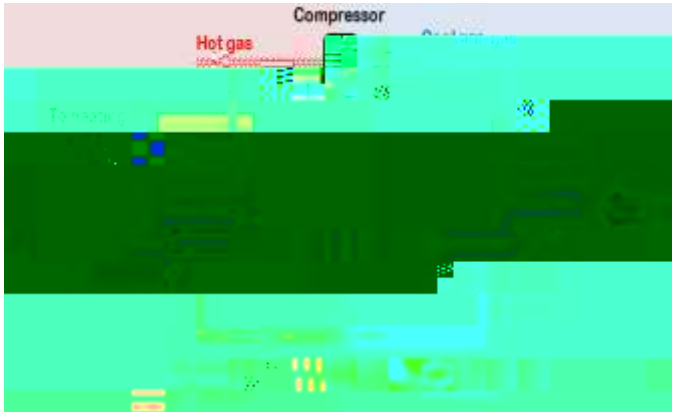


Figure 1: Principles of a compressor based heat pump

So for a heat pump to work all we need is a source of heat above about -15°C, **yes *minus* 15°C**, and electricity to run the compressor. The amount of compression that needs to be done depends on the temperature of the heat source, the cooler the source the more compression it needs and therefore more electricity. Therefore at -15°C you will only get out slightly more heat than electricity you put in, but once the temperature of the heat source is up towards +10°C most heat pumps should easily deliver 3-4 times as much heat as electricity put in. This ratio of electricity in to heat out is known as the ***Coefficient of Performance* (COP),** in effect efficiency.

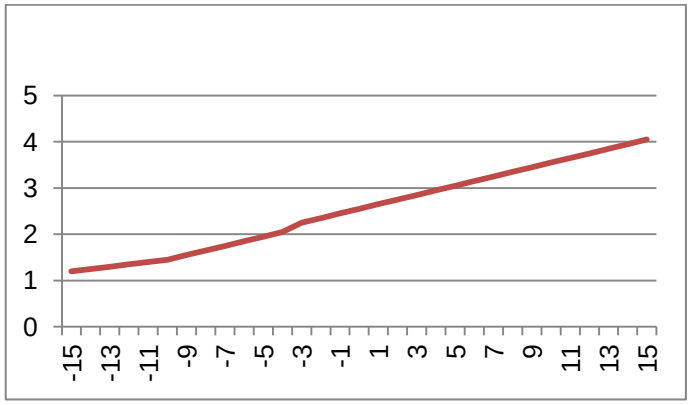


Figure 2: Change in efficiency with heat source temperature

As we can see the temperature of the heat source plays a big part in the efficiency of the system.

Air source heat pumps use the air, with typical COP (efficiency) over the year in standard space heating situations about 2.5 i.e. 2.5 units of heat for every unit of electricity.

Ground source heat pumps use the ground between 1.5 and 2m deep, with a relatively constant temperature and in the winter warmer that the air. This is why the COP over a year in standard space heating situations should be around 3.5. **Pig units however are not** the heat load in

the summer doesn't drop away to nothing and creep heating still has to be run**.**

In the summer air is warmer than the ground and hence air source will be more efficient, which could well bring efficiencies of ground and air source closer together in pig units, air source is usually cheaper to install so you would think air source would be the way to go. In the UK however we have the Renewable Heat Incentive (RHI) which pays for renewable heat we produce. Due to lower installation costs and lower efficiencies in most situations, air source is paid less than a third of ground source, which make ground source the most obvious choice for most.

On farms, ground source heat pumps normally use horizontal ground loops (pipes) buried 1.5-2m below the surface. Water flowing through the loop absorbs heat from the ground which is then used in the evaporator of the heat pump. The "ground" lo

The PIG e:newsletter was produced by the Pig Strategy Group at SRUC through funding from the Universities Innovation Fund, from Scottish Funding Council. Should you wish to know more about any of the articles featured or wish to find out more about SRUC pig related activities please contact the following or click on the links below.

http://www.sruc.ac.uk/info/120196/pig_research_centre

Iain.Riddell@sac.co.uk

Ross.MacKenzie@sac.co.uk

George.Chalmers@sac.co.uk

Anna.Sinclair@sruc.ac.uk

Jill.Thomson@sac.co.uk

Carla.Gomes@sruc.ac.uk

Emma.Baxter@sruc.ac.uk

Jos.Houdijk@sruc.ac.uk

SRUC's Pig Strategy Group (left toright)- Ross MacKenzie, Emma Baxter, Naomi Scott, Jos Houdijk, Jill Thomson, Iain Riddell, Anna Sinclair, Carla Gomes, George Chalmers.