



PIG FEED PREPARATION - VPP*

*VIANDE - POISSON - PETFOOD

In industrial farming, pig feed is only made with plant products selected for their high nutritional quality. Pig food is mainly composed of pellets or mash cereals (wheat, maize and barley), of oilseed (soybean, sunflower and rapeseed), and minerals.

Two solutions are available to the farmer to feed his pigs:

- Manual distribution of cereals in collective troughs. This solution tends to disappear in favor of the following because it is random, time-consuming and costly labor.
- Automatic distribution of "soup" that offers several advantages, including control of doses supplied and watering pigs.

APPLICATIONS :

- Transfer of soup in individual pens.



1 ACTIVITY & MANUFACTURING PROCESS

The animals are penned by age or stage of development to enable a diet adaptation (recipe and quantity) and to adapt the useful space for their growth. This explains the construction of several buildings and partitioning into several pens.

Generally, there are 4 types of recipes served 2-3 times a day that is to say 12 day preparations.

1 • Dosing the recipe by category

Growing pig: The daily requirement is around 2.3 kg of pellets or mash cereals (dilution : 1kg cereals in 2.7 liters of water*)

Example of recipe: 60% corn, 15% barley, 22% soybean, 3% minerals

Gestating sow : 3 kg of pellets or mash cereals (dilution : 1kg cereals in 4 liters of water*).

2 • Mixing

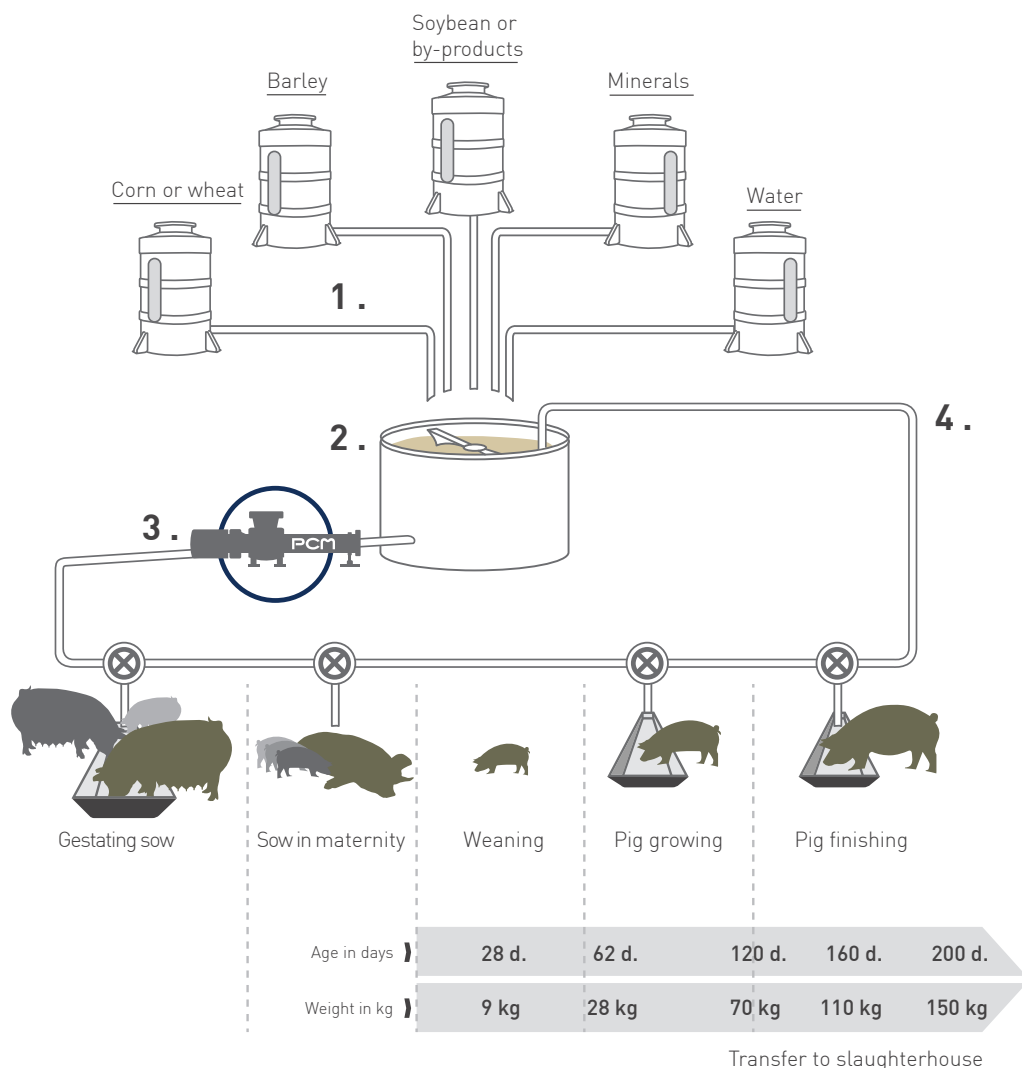
Ingredients are dosed and mixed in the preparation tank.

3 • Recipe transfer

The preparation is transferred to the pen according to the specific recipe.

4 • Transfer played in a loop

The advantage is double, the loop circuit ensures a homogeneous distribution of soup without any settling. At the end of the distribution, it also allows to flush the pipes before the next recipe.



* variable (case studied)



2 TECHNICAL DATA & PROCESSING RESTRICTIONS

› LIQUID FEEDING PREPARATION :

Viscosity : around 1 000 cpo

Particules size: thin (except when using by-products)

Abrasion : high

Discharge pressure : from 5 to 10 bars

Suction pressure : flooded (below mixing tank)

Flow rate : 10,8 m³ (pipe DN65) – speed obligation 3 L/s.

Temperature : room temperature



› PROCESSING RESTRICTIONS :

- **Lean manufacturing process :** use of machinery 7/7 day & 24/24H- There are no days off for feeding and fattening pigs!
- **The inability to stop the feed distribution:** after few days, risk of cannibalism and loss of goods
- **Installation of long lengths** of piping related to the organization of space by category of growing, which creates strong pressure in the pipes.
- **Necessary speed** of 3L/s in the pipe to avoid any settling of cereals. This speed is also necessary to supply a sufficient flow whatever is the number of troughs fed (open valves).



3 EQUIPMENT & PROCESSING RECOMMENDATIONS

• Unlike centrifugal pumps, PCP technology offers the guarantee of a constant flow over long distances under pressure. Beyond 300 meters of pipes, PCP is essential.

• To withstand high pressure, piston pump technology needs a large pump. In addition, this technology has also the disadvantage of a pulsating flow and generates high costs maintenance.



	PCP PCM	Centrifugal	Piston
Maintenance	+	+	-- actuator and piston
Pressure	++	-	++
Size (space saving)	+	++	-



4 PRODUCT RECOMMENDATIONS

25M12S / 40M12S

The Ecomoineau™ M pump is the most compact PCP in the market.



Specification recommendations:

- Monobloc construction
- Single mechanical seal
- Chromed rotor to deal with the potential abrasion and systematic use under pressure
- Polyisoprene IR stator (1562)

Flow rate (cases studied) (at 450 rpm):

- 25M12S:
 - 11.5 m³/h at 6 bars
 - 10.8 m³/h at 10 bars
 - 7.5 m³/h at 12 bars
- 40M12S:
 - 21 m³/h at 6 bars
 - 18.5 m³/h at 10 bars
 - 17.5 m³/h at 12 bars

Pressure (max):

- 12 bars



Do not forget to offer our pumps for transferring liquid manure before spreading.