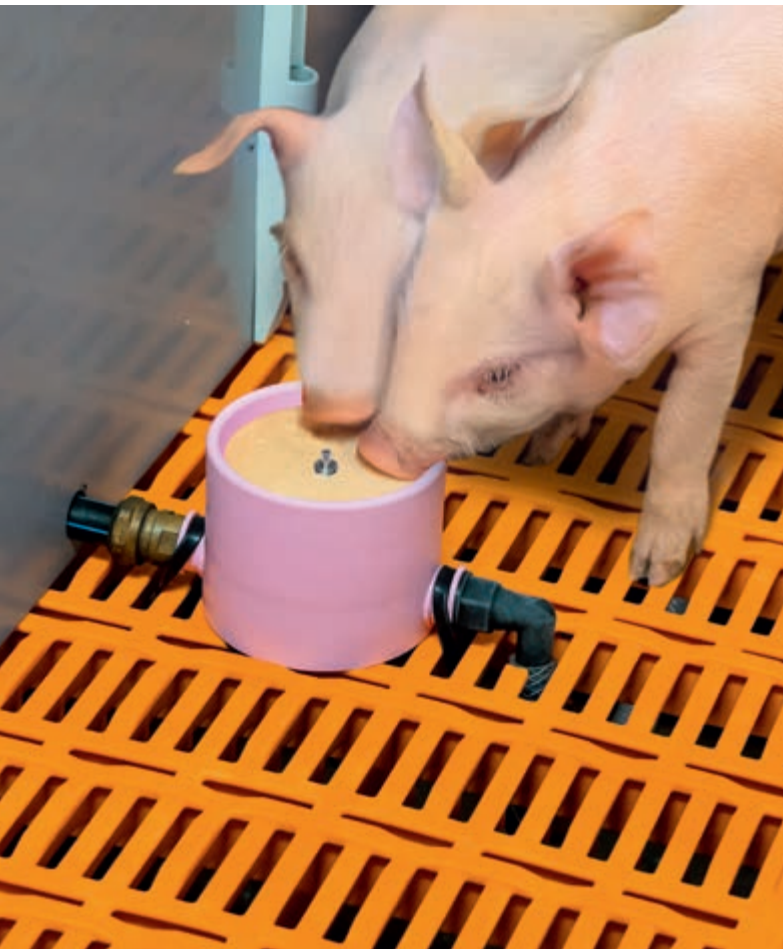




Big Dutchman®



CulinaCup & **CulinaFlex***pro*

Innovative feeding systems for suckling pigs
– hygienic, efficient, animal-friendly –

CulinaCup and CulinaFlex^{pro}

Successful supplementary feeding in the farrowing pen

The size of litters continues to increase in pig production, with 18 or more live-born piglets no longer being a rarity today. Sows giving birth to such large litters must be healthy and strong, since supplying all piglets with sufficient amounts of milk is very strenuous for the mother. Despite best attempts, not every sow will have enough milk for all her offspring, resulting in losses or strongly varying weaning weights. Sows may also experience

exhaustion, which has negative effects on their fertility after weaning. Sow managers know how difficult handling large litters can be. In the past, piglets from such litters were cross-fostered, or placed with nurse sows. However, these options are not always the best solution. As successful alternatives, Big Dutchman can now offer two feeding systems for suckling pigs in the farrowing pen:

- ✓ CulinaCup
 - ✓ CulinaFlex^{pro}
- Both Culina systems help you to supply piglets in the farrowing pen with milk replacers and liquid prestarters, fully- or semi-automatically and continuously. Especially the smaller and thus weaker piglets will benefit from this additional food source.

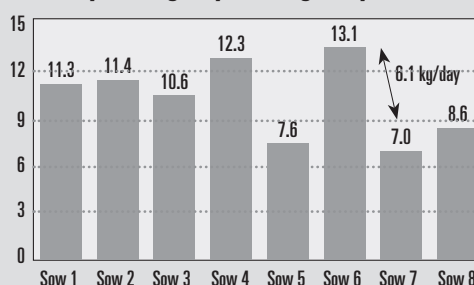


View into a farrowing room – CulinaFlex^{pro} supplies the piglets with additional milk

DEFICITS IN LACTATION PERFORMANCE, MILK COMPOSITION AND LITTER

A study conducted by the University of Applied Sciences Bingen, Germany, showed that the lactation performance of individual sows can differ greatly. However, not only the lactation performance can fluctuate, but also the composition of the milk, especially regarding protein and fat contents. In case of large litters, this can mean that weaker piglets not only receive less milk, but also less nutritious milk.

Milk yield, kg/day (average day 1-14)



Source: Dusel and Oster, 2011, unpublished

Naturally, the number of teats is limited and stronger piglets will satisfy their needs first. The Bingen study also indicated that a teat order takes effect from the third day of suckling, with the stronger piglets nursing the front teats. These will usually give more milk.

CulinaCup

Semi-automatic supplementary feeding of milk and prestarters

The CulinaCup system uses small cups which have a nipple in the centre. When a

piglet plays with this nipple, feed flows into the cup at a temperature of approx.

30°C. The piglets can easily ingest this feed.



Additional milk supplied by CulinaCup for piglets in the farrowing pen

The feed is mixed in a separate tank, in a process that is started manually. Pipes then transport the feed automatically from the feed kitchen to the farrowing pens. A heat exchanger ensures that the feed remains warm, even after mixing. Compared to manual feeding, this has the following advantages:

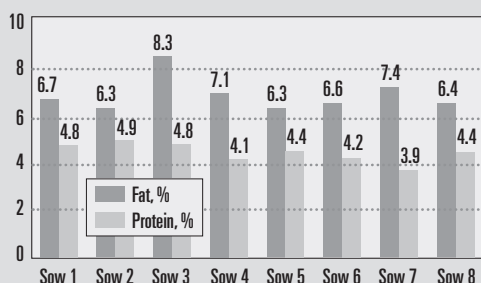
- ✓ significantly less work and time required;
- ✓ no nurse sows necessary, i.e. more productive farrowing places;
- ✓ fresh and warm feed (milk) is constantly available to all piglets;
- ✓ only small amounts are offered so the dispensed feed is always fresh.



CulinaCup feed kitchen with two mixing tanks

ER SIZE

Sow milk of varying quality



Source: Dusel and Oster, 2011, unpublished



CulinaCup – the cup system for the farrowing pen

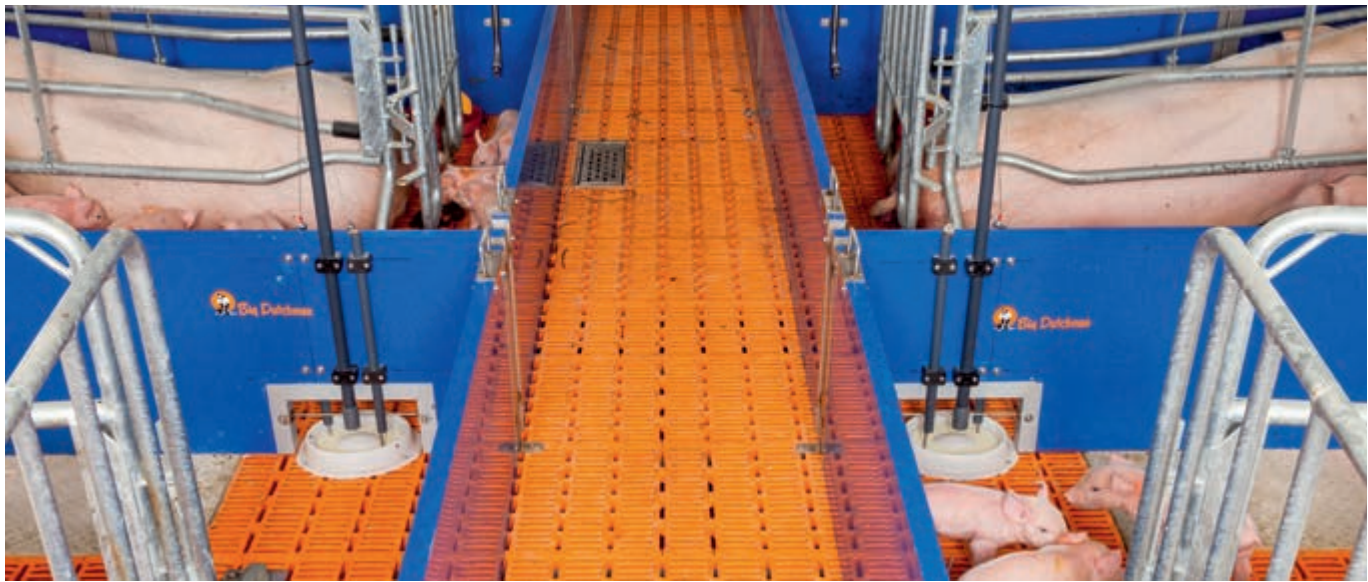
CulinaFlex^{pro}

Automatic supplementary feeding of milk and prestarters with feed valves

CulinaFlex^{pro} is an automatic system which dispenses feed time-controlled

through a feed valve. A sensor in the trough determines whether the trough is

empty or whether feed is still available for the piglets.



Additional, and fully-automatic milk source for piglets in the farrowing pen: CulinaFlex^{pro}

All pipes are designed as circuits so that feed can circulate. It is thus always fresh when dispensed, improving hygiene. CulinaFlex^{pro} also uses a heat exchanger to ensure that warm feed reaches the piglets' trough.

When feeding is completed, air under pressure squeezes the flexible hose inside the drop pipe, which thus functions as a pinch valve. All remaining feed is pushed out of the hose. The hose remains in this state until more feed must be dispensed. This creates an environment low in oxygen, keeping aerobic bacteria from growing and improving feed hygiene. The compressed air escapes from the pipe when the next feeding starts. The feed can now drop from the hose inside the feed pipe into the trough.

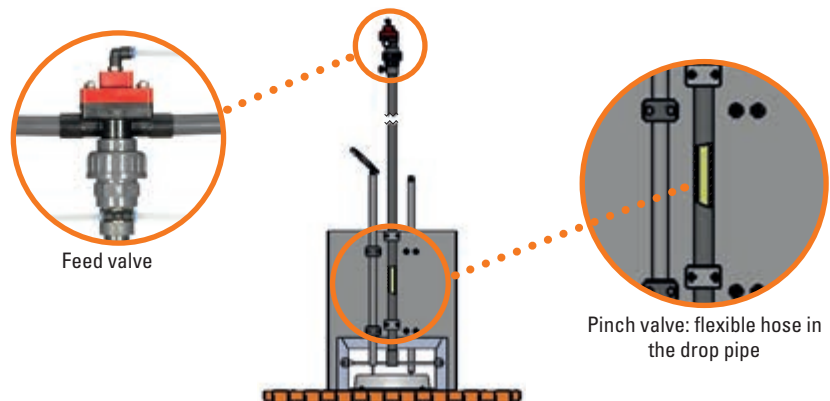
Apart from this pinch valve, Big Dutchman offers two other options for the feed pipe:

- ✓ flexible drop pipe (hose)
- ✓ fixed drop pipe (standard PVC pipe)

Multi-phase feeding (piglet milk, prestarter, starter feed) is easy to implement, making the conversion to the feed in the nursery easier for the piglets later on.



CulinaFlex^{pro} feed kitchen



Feed valve

Pinch valve: flexible hose in the drop pipe

Advantages for the sow

- ✓ less exhaustion from nursing and better condition;
- ✓ improved fertility after weaning;
- ✓ less weight loss;
- ✓ no stress during the suckling period;
- ✓ healthier sows which remain productive for a longer time, i.e. they can carry more litters.

Advantages for the suckling pig

- ✓ higher weights of up to one kilogram per piglet at weaning;
- ✓ more piglets weaned per sow;
- ✓ less variation in weaning weights, i.e. litters are more even and piglets weigh more;
- ✓ considerably fewer losses;
- ✓ more high-quality piglets, less runts;
- ✓ easier start in the flat deck.

Advantages for the sow manager

- ✓ higher rearing performance in the farrowing house;
- ✓ compliance with high hygiene standards;
- ✓ no cross-fostering required;
- ✓ less work due to an automatic system;
- ✓ feed is available 24 hours a day, if necessary;
- ✓ no nurse sows required.

BigFarmNet 510^{pro} and BigFarmNet Manager help you keep track of CulinaFlex^{pro}



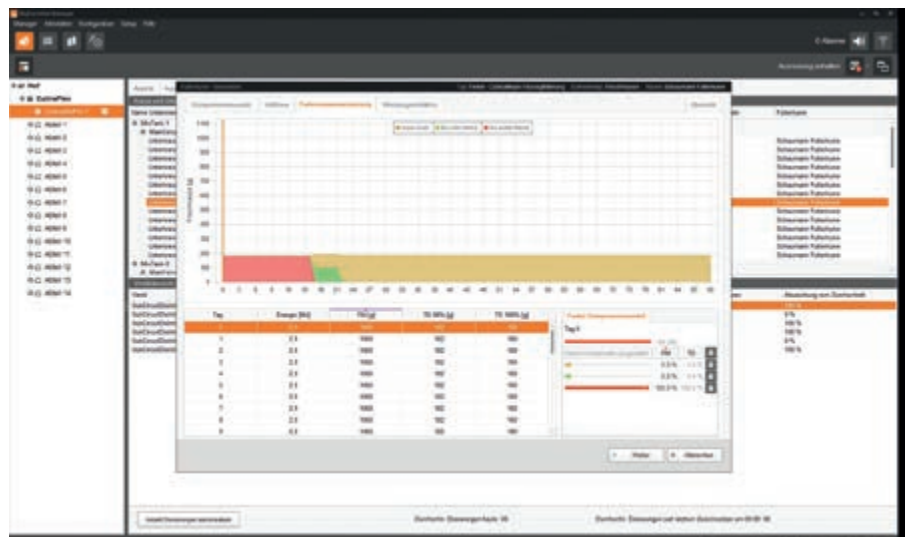
Our 510^{pro} feeding computer gives you full control of CulinaFlex^{pro} – fully automatic, in up to 1250 farrowing pens and around the clock, or whenever you want. You only need to enter a start and an end time. The large colour touchscreen shows all important information. Make changes directly at the 510^{pro} computer or in your office using BigFarmNet Manager. All data is displayed in tables and graphs and thus easy to understand, whether you want to monitor feeding

processes, set up feed curves or clean the system automatically. This helps you react quickly to changes, and you can adjust the supplementary feeding system to any new situation.

For example, use the intelligent pause control to determine how long a pause should be after the trough sensor reports that the trough is still filled.



A sensor checks the feed level in the trough and informs the 510^{pro} computer



Set up feed curves to create individual recipes for each day

Reducing stress on the sows and reaching higher weaning weights

Advantages of CulinaFlex^{pro}

- ✓ the system works fully automatically and can be controlled remotely for a significant reduction of the workload;
- ✓ the piglets receive additional feed around the clock and controlled by sensors;
- ✓ using a heat exchanger increases feed intake as the feed is always warm;
- ✓ all feed valves can be controlled individually;
- ✓ small amounts of feed can be dispensed individually per trough;
- ✓ any type of feed can be used, from milk to starter feed;
- ✓ hygiene improves due to the clever system concept;
- ✓ programmed cleaning cycles increase feed hygiene;
- ✓ individual evaluations per room are possible;
- ✓ alarm function;
- ✓ remote maintenance.



Room overview: individual valves or valve circuits can be controlled as required



Many piglets per litter are a challenge for the sow

Finally: I can eat whenever I want!



Big Dutchman.

Europe, Middle East & Africa:
Big Dutchman International GmbH
 P.O. Box 1163 · 49360 Vechta, Germany
 Tel. +49(0)4447 801-0 · Fax -237
 big@bigdutchman.de
 www.bigdutchman.de

USA: Big Dutchman, Inc.
 Tel. +1 616 392 5981 · bigd@bigdutchmanusa.com
 www.bigdutchmanusa.com

Brazil: Big Dutchman (Brasil) Ltda.
 Tel. +55 16 2108 5300 · bdb@bigdutchman.com.br
 www.bigdutchman.com.br

Russia: 000 "Big Dutchman"
 Tel. +7 495 229 5161 · big@bigdutchman.ru · www.bigdutchman.ru

Asia/Pacific: BD Agriculture (Malaysia) Sdn. Bhd.
 Tel. +60 3 3361 5555 · bdasia@bigdutchman.com · www.bigdutchman.com

China: Big Dutchman (Tianjin) Livestock Equipment Co., Ltd.
 Tel. +86 10 6476 1888 · bdcnsales@bigdutchman.com
 www.bigdutchman.cn

