

Egebjerg International A/S

Egebjerg - tube feeder "TUBE-O-MAT® VIP"

for the feeding of meal and pellets to newly weaned pigs

Test Report no. 5407

Note:

This English version is a translation from the original German version, which can be downloaded on www.dlg-test.de

Manufacturer

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Brief description

- The tube feeder as an automatic dry feeder with a rectangular trough made of stainless steel. Trough with two feeding spaces on each side, feed supply by feed conveyors in a white, smooth surface plastic storage container;

- The feed extraction is effected underneath the feed storage container by moving a dosage device; above the device, the feed slides from a dosage plate through a slit and drops into the trough; the more the slit is opened with the adjustment lever, the more food drops into the trough each time the dosage device is activated;

- Water supply by two trough sprayers.

(See page 3 for description and technical data).



Deutsche Landwirtschafts-
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Evaluation - summarised		
Test feature	Test result	Evaluation
Suitability		
	for the feeding of meal and pellets to newly weaned pigs	
Technical criteria		
Feed dosage		
Feed dosage	gradual adjustment possible	0
Scale adjustment	even gradations	+
Water dosage		
Water throughput	can be adjusted to between 1 and 2 l/min at 1, 3 and 5 bar	++
Opening pressure	< 10 N	+
Feed and water loss		
Animal-related feed losses	Some feed losses in the beginning; subsequently insignificant feed loss	-
Loss prevention	achieved through the shape of the trough	0
Handling		
Operating manual	available	0
Filling:		
- manual	easy	+
- automatic	easy	+
Feed dosage/scaling	Easy adjustment/markings	+ / +
Activation of adjustment lever	fairly effortless	+
Shutting dosage device	possible for both pellets and meal	+
Feed storage	100 l	o.B.
Adjusting water quantity	very complicated	--
Aids for water throughput adjustment	available	+
Cleaning	easy	+
Operational security		
Clogging of dosage device	did not occur during the test	+
Animals reaching adjustment lever	not possible	+
Bridge formation in storage container	did not occur	+
Durability		
Corrosion prevention	depends on the material used	+
Wear	negligible	+
Bite protection on trough	provided	+
Assembly		
Delivery	fully-assembled	+
Installation		
By operator	easy	+
In penning divider	possible, fittings provided	+
Stand-alone	possible	+
Hygiene		
Trough	remains clean	+
Stepping in trough	occurs especially in the beginning	-
Leaving excrement/urine in trough	rarely occurs	+
Storage container	can be closed with a lid	++
Possible to clean under trough	easy to clean	+
Environmental protection		
Disposal of synthetic parts	possible via the manufacturer	0

Evaluation range: ++ / + / 0 / - / -- (0 = standard) oB = no evaluation

Animal-related criteria		
Animal behaviour		
Familiaride with automatic feeder	brief learning phase	+
Natural posture when animal is eating	trough wall height: 110 mm	+
	feeding space width: > 170 mm	+
Feed intake	unproblematic for pigs weighing 6 kg or more	+
Water intake	nothing remarkable	+
Changing place for feeding	possible	+
Feeding time per pig	sufficient if correctly set	+
Feed intake	effected playfully, requires activity	++
Change from feed trough to drinking trough	not necessary	+
Behavioural disorders	not observed	0
Animal health		
Feeder-related injuries	none	+
Drinking troughs in tube feeder	til max. 24 dyr	0
Animal monitoring at tube feeder	possible to a limited extent	0

Evaluation range: ++ / + / 0 / - / -- (0 = standard) oB = no evaluation

Description and technical data (measured values)

Type of construction

- The tube feeder consists of a plastic storage container, a dosage device, a rectangular feed trough and two drinking troughs.

Dosage device

- Plastic dosage device which must be activated by the piglets in order to release feed. This moves a dosage plate and the feed slides into the trough through a slit.

- The feed quantity can be adjusted by a dosage lever with 20 steps.

Drinking trough

- A drinking nipple and a 1.15m water pipe made of stainless steel, are fixed to the supporting frame with the possibility of height adjustment (thread 1/2"), adjustable perforated plate for setting the water quantity.

Other equipment / versions (not tested)

Tube feeder "TUBE-O-MAT® VIP" for growers and finishers.

Main dimensions and weights

Capacity of the tube feeder	100 l
Width	615 mm
Depth	720 mm
Height	1,300 mm
Dimensions of the trough, length x width	600 x 305 mm
Height of the trough wall	110 mm
Weight of the tube feeder	20.9 kg

Test result

Suitability

The Egebjerg tube feeder "TUBE-O-MAT® VIP" for the feeding of meal and pellets to newly weaned pigs, is suitable for a stand alone feeder for piglets from 6 to 30 kg live weight.

Technical criteria

Feed dosage

The feed dosage can be adjusted by gradually; steady adjustment of the gradations is possible. In the laboratory, meal feed trickled into the trough constantly when the adjustment lever was set to level 17. Under operational conditions, the adjustment lever was mostly set to level 16. Hence the quantity falling into the trough per perpendicular movement of the dosage device amounted to maximum 6 g of feed in the case of meal feed (laboratory result, see figure 3). In the case of pellet feed, level 15 was selected under operational conditions, resulting in approx. 5 g per dosage device movement (laboratory result, figure 2).

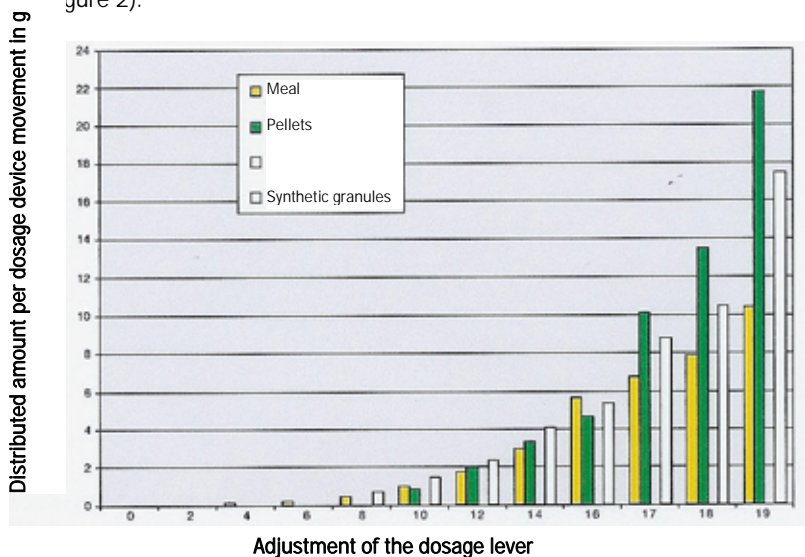


Figure 2:
Egebjerg tube feeder "TUBE-O-MAT® VIP"
Reference values for the distributed amounts of meal and pellet feed and of synthetic granules at various settings of the dosage lever (laboratory results).

Water dosage

The dosage offers 3 possible settings by adjustment of a perforated plate. The default setting of the perforated plate is a hole diameter of 1.2 mm. At all three pressure levels, the water dosage capacity of the drinking nipples always exceeds the water throughput of minimum 1 l/min to a maximum of 2 l/min (see figure 4). The opening pressure for the drinking nipple is below 10 N.

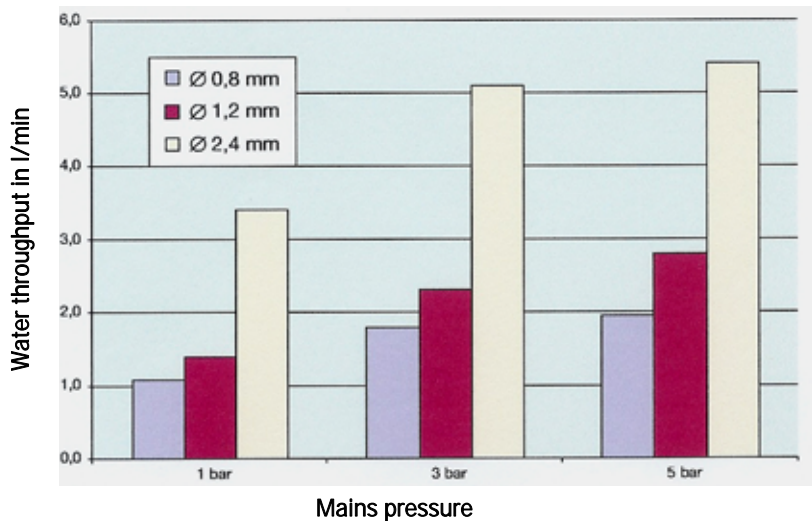


Figure 3

Egebjerg tube feeder "TUBE-O-MAT® VIP"

Water throughput of the drinking nipple in relation to the water pressure and settings of the perforated plate (laboratory results).

Feed and water losses

- Especially in the beginning, feed and moist are removed from the trough.
- Later losses are negligible, provided the feed dosage and water throughput are set correctly.
- The trough shape prevents loss.

Handling

- An operating manual is available.
- The storage container is easy to fill both manually and automatically because of the split lid.
- The feed dosage is easy to adjust by an adjustment lever ranging from "0" to "19". The scale is durably marked.
- Activation of the adjustment lever at a height of 1.05 m is fairly effortless.
- The feed supply of both pellets and meal feed can be shut off in the position "0".
- A storage container capacity of 100 l will provide enough feed for daily rations for 2 x 12 pigs. Later, the container needs refilling several times a day.
- It is very complicated to adjust the water throughput, as the drinking nipple has to be removed every time. It is recommended that the drinking nipples are adjusted to the water pressure available on site before the mush tube feeder is put into operation (see figure 3).
- Aids to adjust the water throughput to fit the pressure are available.

Operational security

- No clogging of the dosage device occurred during the test. The animals cannot reach the feed dosage adjustment lever.
- No bridge formation occurred in the storage container during the test.
- The water throughput must be checked regularly, as sediments in the strainer or at the holes can result in the water throughput being reduced or completely cut off.

Durability

- All components are protected against corrosion by the material used and thus suitable for long-term operation in barn conditions.
- No particular wear occurred during the test.
- The trough is made of stainless steel and is thus bite-protected.

Assembly

The tube feeder is supplied fully-assembled.

Installation

- Angle brackets with slot holes are provided for fixing the tube feeder to the penning wall.
- Fixing parts for installing the tube feeder in the barn are included.
- An installation manual is not available.

Hygiene

- Provided the setting is correct, the trough remains clean; hardly any feed sticks to the inside.
- In the beginning, pigs occasionally step in the trough.
- The trough was rarely soiled by excrement and urine during the test.
- The storage container can be closed with a plastic lid.
- The area below the trough is easily cleaned.

Environmental protection

The synthetic parts of a worn tube feeders can be returned to the company Egebjerg, with no freight charge.

Animal-related criteria

Animal behaviour

- The newly weaned pigs became familiar with the tube feeder without problems after a brief learning phase.
- The height of the trough wall of 110 mm and the feeding space width of > 171 mm allows a natural posture for the animal.
- For animals from a live weight of 6 kg, feed intake is no problem.
- The pigs showed normal feed intake behaviour when animal / feeding space ratio was 12:2 and normal water intake behaviour with a ratio of 12:1.

- When the tube feeders are installed in the penning divider between two pens, notice should be taken to ensure that the difference in pig numbers in the two pens, does not exceed 3 to 5. Otherwise too much feed is pushed to one side of the trough and not eaten by the smaller group.
- Typical animal behaviour such as changing place for feeding is possible with this type of tube feeder.
- The feeding time depends on the setting of the dosage device and the live weight of the pigs and is adequate, provided the setting is correct.
- The feeding is done playfully; the perpendicular movement of the dosage device appeals to the pigs' play instinct.
- Provided the setting is correct, the trough is completely emptied.
- The newly weaned pigs do not have to move from the feed trough to go to the drinking trough, as these have been incorporated in the feed trough.
- Behavioural disorders have not been observed.

Animal health

- The newly weaned pigs did not suffer from injuries caused by the mush tube feeder during the test.
- The two drinking troughs available are sufficient for a maximum of 24 animals.
- Monitoring of the animals at the tube feeder is only possible to a limited extent, as the animals do not all feed at the same time.

Survey

The survey confirmed the test results.

Test

Test

The "TUBE-O-MAT® VIP" for newly weaned pigs was tested for full feeding with meal and pellet feed. In test spaces, the testing covered the feed dosage and water throughput as well as durability. The testing lasted 12 months and included both summer and winter months.

Test performance

The Department for Testing Agricultural Machinery of the German Agricultural Society (DLG), Potsdam site, Lerchensteig 42, D-14469 Potsdam

Practical operation

LZ Haus Düsse
LVZ Futterkamp

Report

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