



DESIGNED TO PERFORM



ASTRO 200



LUNA 50



LUNA 86



LUNA 117



LUNA 142

# ENVIRONMENTAL ENRICHMENT FOR PIGS



# EASYFIX LUNA

The new EASYFIX Luna range of floor products are designed to provide environmental enrichment for pigs. There are four products in the new range, developed specifically for piglets, weaners, finishers and sows.

Made from high quality natural rubber, the products are pliable, durable and safe for pigs to bite on. They are working extremely well on university research farms and commercial farms in Ireland, UK, Germany, Holland, Korea and USA.

BENEFITS	FEATURES
<ul style="list-style-type: none"><li>• Environmental enrichment helps to reduce tail, ear and side biting.</li><li>• The pig enrichment devices remain at floor level, imitating the pig's natural posture and behaviour.</li><li>• Up to 6 pigs can interact with the device at the same time.</li><li>• The Luna combines mobility and rollability, whilst always remaining in reach.</li><li>• The LUNA remains very clean with low bacteria counts from swab tests.</li></ul>	<ul style="list-style-type: none"><li>• Made from a high quality natural rubber compound.</li><li>• Unique design with 12 protruding rubber legs.</li><li>• Only 3 legs are in contact with the floor at any time.</li><li>• Brightly coloured for easy observation in the pen.</li><li>• Fully REACH Compliant.</li><li>• Food grade rubber.</li></ul>

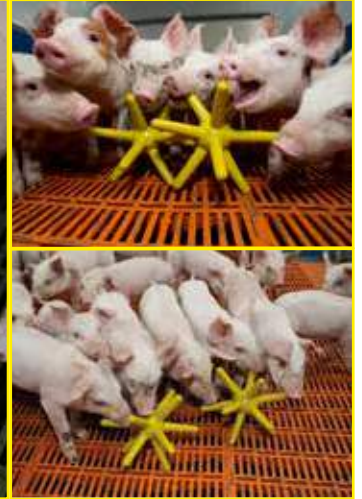
*“Pigs interact with the EASYFIX LUNA up to 80% of the time. The combination of mobility and rollability retains the pigs interest and motivates other pigs to join in.”*





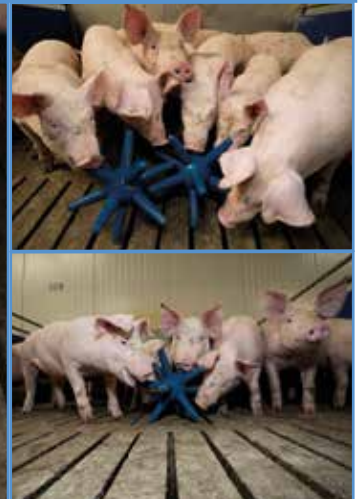
## LUNA 86

4-7 Weeks  
1st Stage Weaners



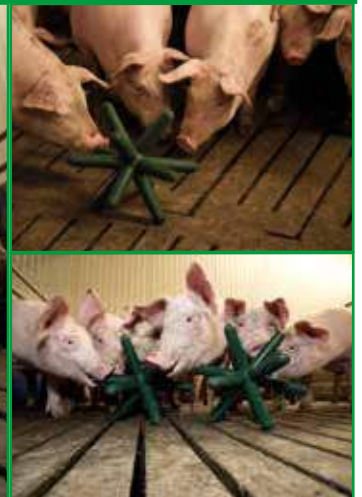
## LUNA 117

7-12 Weeks  
2nd Stage Weaners



## LUNA 142

12-26 Weeks  
Finishers/Sows



# ENVIRONMENTAL ENRICHMENT FOR YOUNG PIGS

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EU-legislation insists that pigs must have permanent access to sufficient quantity of material in order to enable proper investigation and manipulation activities. This material is called environmental enrichment and refers to any changes that are designed to improve the pigs living conditions, by encouraging the demonstration of a wider range of natural pig behaviours.

Pigs are naturally curious and social animals who are highly motivated to explore their environment as they would do in their natural woodland habitat. In the wild, pigs spend their time rooting, biting, chewing, burrowing, foraging and exploring.

The benefits to providing environmental enrichment to pigs include;

- Reduces the frequency of aggressive behaviour (tail biting, ear biting etc.)
- Increase the pig's ability to deal with challenges in a more natural way.
- Broaden the range of behaviours expressed.
- Improve production performance (feed intake, average daily gain, feed conversion ratio).
- Reduce stress.

Weaning is a stressful time for pigs. The changes they go through include environmental, social and nutritional changes. These changes can lead to increased incidences of facial and ear necrosis, tail biting, flank biting and navel sucking. Redirected behaviour like this can help prevention, by offering environmental enrichment so that the pigs can satisfy their exploratory urges.

Providing environmental enrichment to piglets pre-weaning has a positive effect on promoting natural behaviour and reducing the level of stress in a critical period like at weaning (Yang, et al., 2018). A reduction in stress levels can lead to pigs being more resilient, less susceptible to disease and easier to move and handle.

Aggression occurs in pigs for many reasons. Pigs fight with each other to establish a dominance hierarchy, to fight for food and to fight to ensure they are left alone. Environmental enrichment at a young age also reduces aggression in piglets after weaning (McKenny, et al., 2007).

The EASYFIX® Luna 50 allows piglets to explore by rooting, sniffing, biting and chewing. It remains at floor level in order to encourage the natural exploratory behaviour of piglets in the wild. The EASYFIX® Luna 50 is accessible as numerous piglets can interact with the device at any one time. The unique design ensures it doesn't get stuck in corners and it remains clean and hygienic. Compared to other forms of environmental enrichment, the EASYFIX® Luna 50 is easily sourced, cost effective, easy to install and also safe for the farmer to handle.

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McKenny, L. et al., 2007. The effects of provided enrichment in the sucker phase on piglet scratch score post-weaning. *Animal Production Science*, Issue 57, p. 12.

Yang, C.-H. et al., 2018. Pre-weaning environmental enrichment increases piglets object play behaviour on a large scale commercial farm. *Applied Animal Behaviour Science*, Issue 202, pp. 7-12.

## WHAT OUR CUSTOMERS SAY

*“I have been using the EASYFIX Astro 200, they work great in our free access stall house for the dry sows. The sows play with them for hours. We have noticed they like to walk under them as well for a scratch on the back and go back and forward all the time. They are a robust toy and I can recommend them to all pig farmers.”*

**Jaco Fouche, Unit Manager, Allen (Hanford) Ltd**

*“I have been using the EASYFIX Astro 200 with my sows and fatteners for two years and find it excellent. They play with it and it acts as a constant source of distraction. I also use the Luna 117 for all stages and find it very good. Having the different sizes of enrichment devices for different age groups is an excellent idea and I will be using the Luna 50, 86 and 142 in the future.”*

**Eugene Sheehan, Cork**

*“I have been using EASYFIX Luna 117 Enrichment Devices for two years. They are doing a great job and keep my weaners occupied whilst reducing greatly the incidence of tail and ear biting. My farm manager, Finbar Higgins, notices this on a daily basis.*

*“I have the Luna 50 on order for my piglets, Luna 86 for weaners, Luna 142 and Astra 200 for the sows. I look forward to the introduction of EASYFIX Enrichment Devices to cover all stages in my piggery.”*

**Patrick O’Keeffe, O’Keeffe Piggery, Co Cork, Ireland**

*“I have the EASYFIX floor pig toys in with first and second stage weaners for over two years. The toys are really working well keeping the pigs engaged and interested at all times. The toys are always very clean and are lasting well.”*

**Peadar Kelly, Pig Producer in Roscommon**



# EASYFIX ASTRO 200



The Astro 200 is a suspended product designed by EASYFIX to provide environmental enrichment for finisher and sows. Made from high quality natural rubber, the product is pliable, durable and provides a good bite.

The Astro 200 is working extremely well on university research farms and commercial farms in Ireland, UK, Germany, Holland, Korea and USA.

BENEFITS	FEATURES
<ul style="list-style-type: none"> <li>• Provides environmental enrichment for finisher and sows.</li> <li>• Helps prevent tail, ear and side biting.</li> <li>• Reduces aggressive behaviour.</li> <li>• Easy to install.</li> <li>• The ASTRO remains very clean with low bacteria counts from swab tests.</li> </ul>	<ul style="list-style-type: none"> <li>• Made from a high quality natural rubber compound.</li> <li>• Suspended “biting” legs.</li> <li>• Can occupy up to 4 pigs at a time.</li> <li>• Can be suspended from a wall or T-piece.</li> <li>• Fully REACH Compliant.</li> <li>• Food grade rubber.</li> </ul>

RECOMMENDED STAGE	Finishers & Sows
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# ENVIRONMENTAL ENRICHMENT FOR GESTATING SOWS

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Since 1st January 2013, all sows and gilts in the European Union must be housed in groups during a period starting 4 weeks after service until 1 week before the expected time of farrowing (EU Directive 2001/88/EC). Prior to this, individual housing meant that sows suffered from social deprivation and lack of exercise.

In recent years, many consumers in other parts of the world are becoming increasingly conscious of farm animal welfare. More and more pig farmers in North America, South America and Asia are transitioning to group sow housing systems. One particular challenge that has been seen with the move to group housed sows is that of aggression. Pigs are social animals and within groups they form social rankings. In these dominance hierarchies, subordinate sows will suffer from bullying and aggression from the dominant sows. These subordinate sows generally show poorer growth rates as they are interrupted during their feeding time and can be recognised with higher skin lesion scores. The benefits of providing environmental enrichment to pigs include;

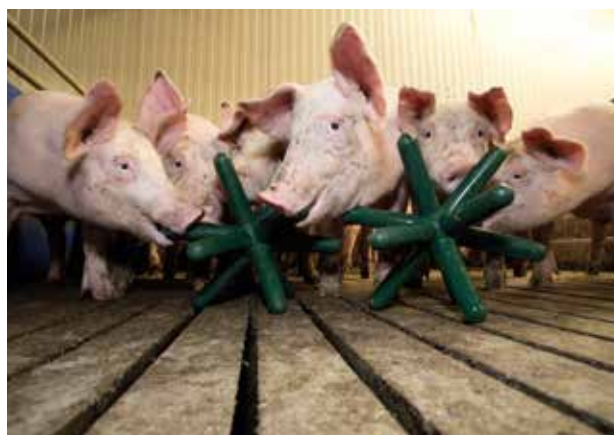
- Reduces the frequency of aggressive behaviour (tail biting, ear biting etc.).
- Increase the pig's ability to deal with challenges in a more natural way.
- Broaden the range of behaviours expressed.
- Improve production performance (feed intake, average daily gain, feed conversion ratio).
- Reduce stress.

Electronic sow feeding (ESF) systems allow sows to be fed according to individual requirements however the dominant sows can spend their time around the ESF station waiting to gain access to it and bullying the subordinate sows out of the way. The **EASYFIX Astro 200** can be suspended from a fixed area close to the ESF and may provide the subordinate sow some 'relief' from the aggression seen by the dominant sow. Both dominant and subordinate sows have been seen to value access to enrichment in group housing systems (Elmore, et al., 2011)

Enriched sows are also more active and spend a greater amount of time standing up compared to sows in barren pens. This helps with regard to fitness prior to farrowing and helping to achieve an ideal body condition score. Fat sows can have difficulty with farrowing, consume less feed during lactation and wean lighter litters.

**EASYFIX Astro 200** and **EASYFIX Luna 142** can help improving sow welfare by encouraging exercise and reducing vices and bullying behaviour; and help to encourage natural exploratory behaviour.

Providing the EASYFIX Astro 200 and EASYFIX Luna 142 as enrichment is ideal for fully slatted floor systems where the use of material like straw can cause problems with liquid manure systems.



# INVESTIGATIONS ON THE EASYFIX LUNA 117 ENRICHMENT DEVICE WITH PIG FINISHING

Prof. Dr. agr. Martin Ziron, South Westphalia University of Applied Sciences Faculty of Agriculture Department of Animal Husbandry

## MAIN QUESTION: WHAT IS APPEALING ABOUT THE EASYFIX LUNA 117?

### Tested materials - Optional test pen



**Fodder basket**  
Filled with straw  
Withers height



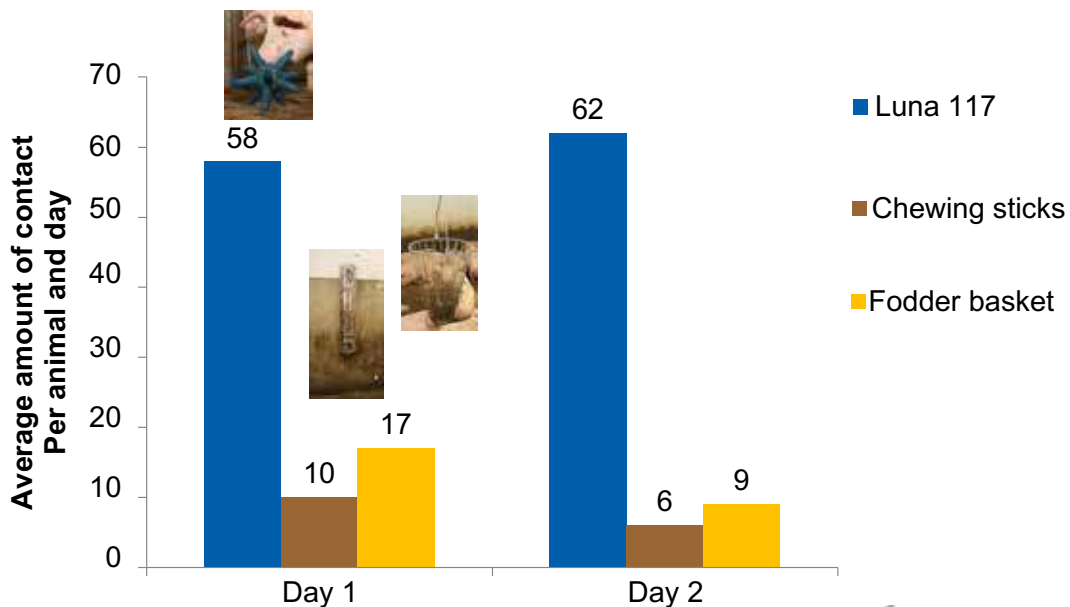
▪ **Chewing sticks**



- **EASYFIX Luna 117**
- 35 cm diameter
- 12 spines
- 2.3 kg
- Natural rubber
- REACH compliant
- Food grade rubber

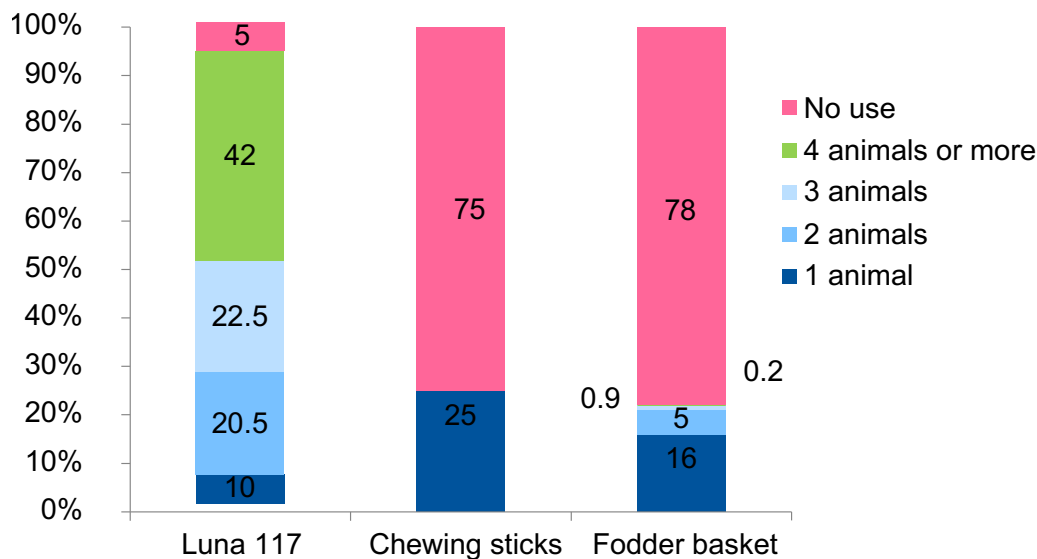
(2/2017) 43 Animals Spiegel February 2017

### Average Contact in 12 Hours





## Percentage of usage duration over the observation period from 12 hours to Day 1

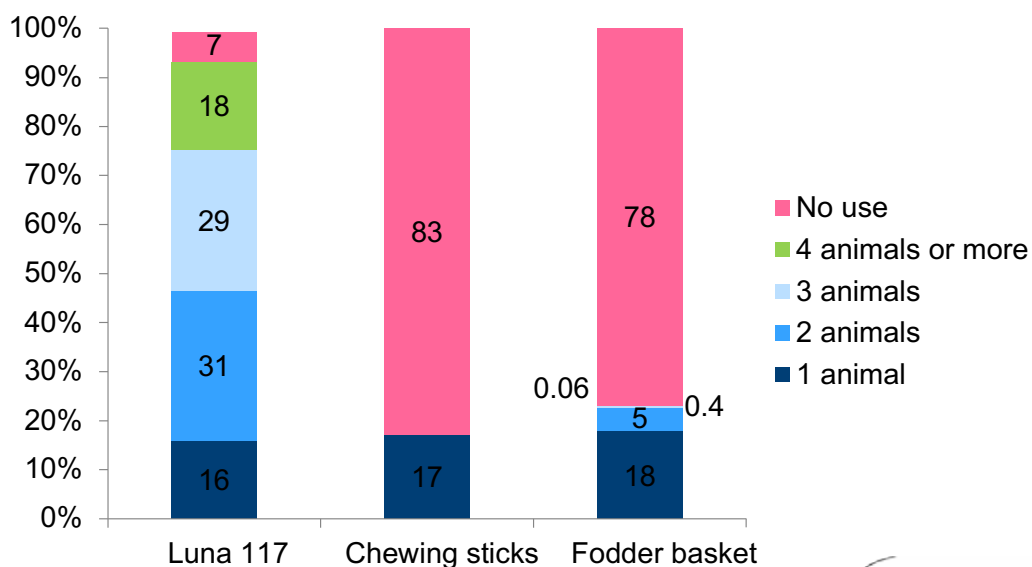


Prof. Ziron  
Slide 6

Spieligel February



## Percentage of usage duration over the observation period from 12 hours to Day 2



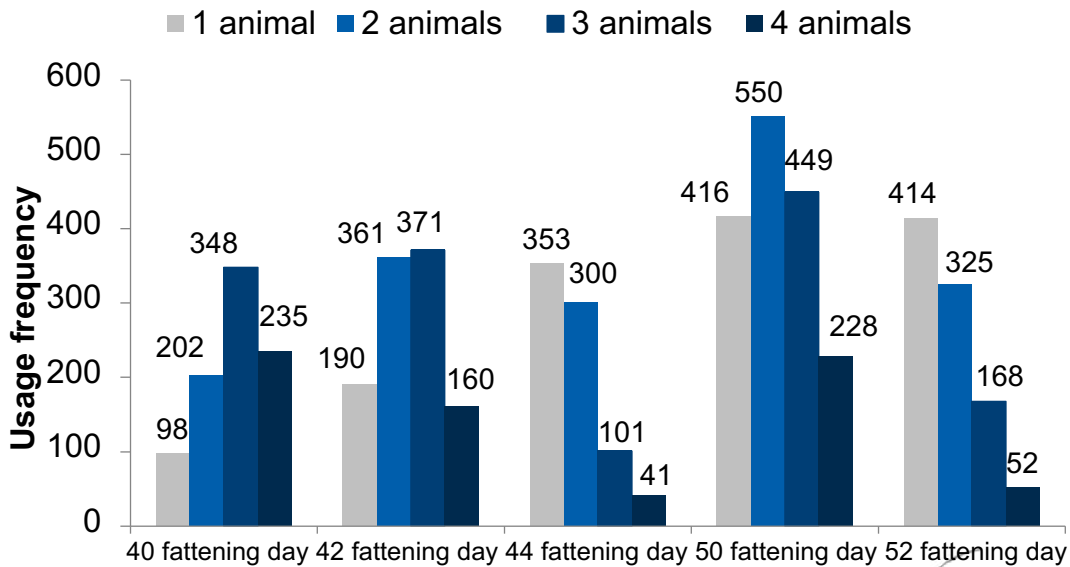
Prof. Ziron  
Slide2(2017)

Spieligel February



# Behavioral Observations In pig finishing (EASYFIX Luna 117)

Number of fattening pigs using the "" at the same time.  
 Observation time 12 hours during the activity phase (9:00 to 21:00).

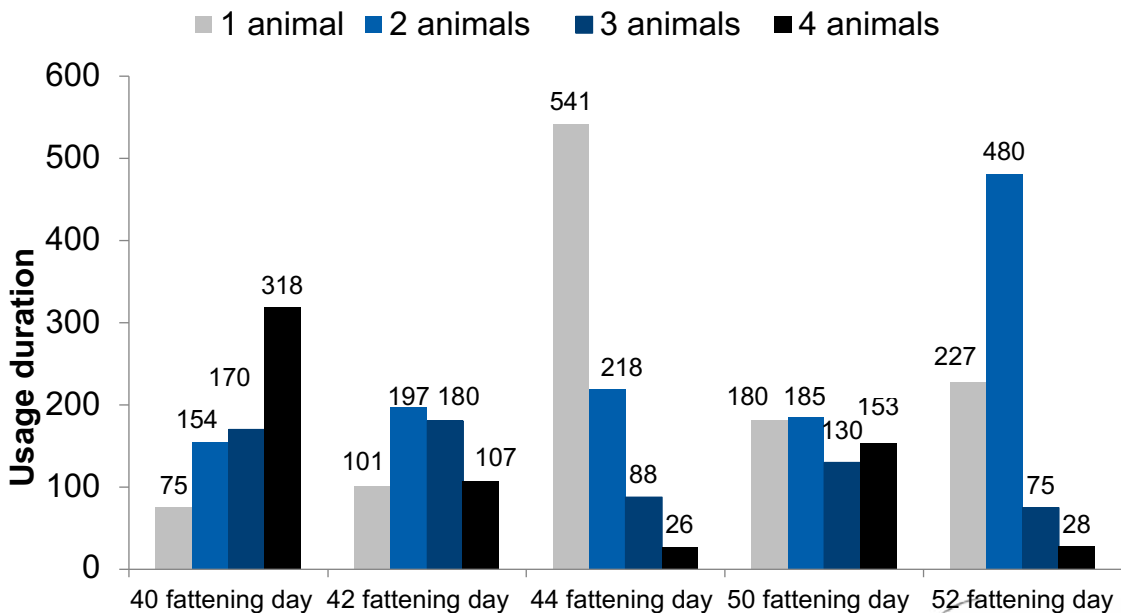


Prof. Ziron  
 Slide 8 (2/2017)

Spieligel February



Useful life over 12 hours in minutes during the activity phase (9:00 to 21:00).



Prof. Ziron  
 Slide 9 (2/2017)

Spieligel February



# EASYFIX LUNA 117 TRIAL RESULTS

Prof. M. Ziron, M. Schauten and B. Engemann, Vocational College Southern-Westphalia



The latest innovation from summer 2016 is the EASYFIX Luna 117 for piglets and pigs up to approximately 40 kg. The floor toy is made of natural rubber and has 12 spikes. Due to its shape it has an ingenious combination of mobility and rollability. It always remains in reach for the pigs and also cannot get stuck in a corner. Furthermore, the surface hardly gets dirty.

## EASYFIX LUNA 117 tested at the Vocational College Soest

In the course of a project thesis at the vocational college Soest, the Luna 117 was tested at two fattening farms with regards to acceptance behavior. For this purpose, one bay at each farm was monitored with a camera and the main activity period of the pigs was assessed.

The results show, that the Luna 117 is accepted exceptionally well by the animals.

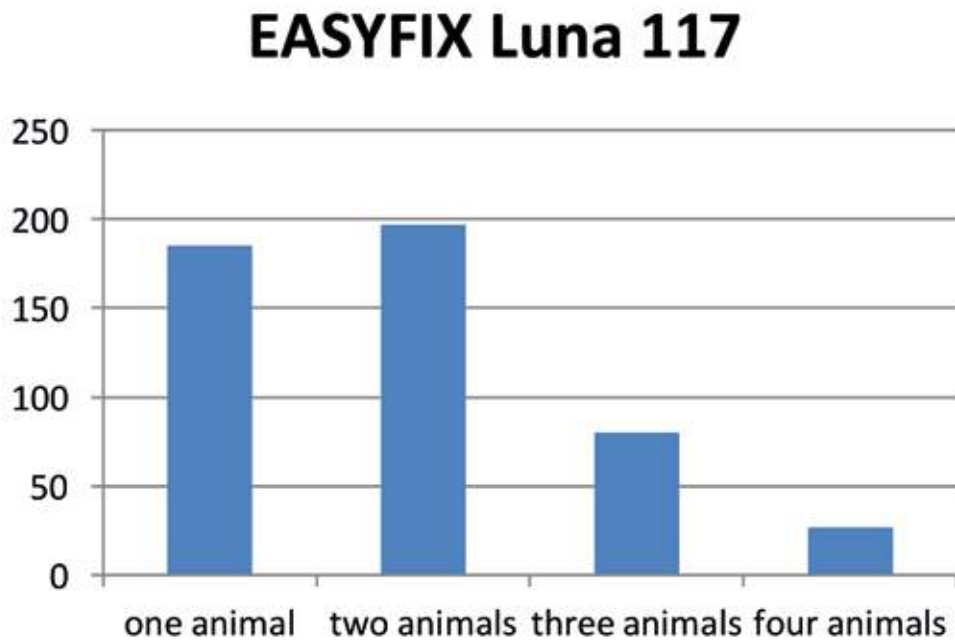
### Farm 1

**Fattening stable with 1300 fattening spots, areas with 8 bays each and 17 animals per bay, once every 14 days new animals are stabled in an area.**

At the first farm, the floor toy was offered in a bay with 14 fattening pigs. From the beginning, the Luna 117 was used extensively by the animals. Up to four animals at once could be observed “playing” with the floor toy. When adding up the number of animal contacts, the Luna 117 has been poked, rolled, nibbled on and played with by the pigs a total of 927 times during the activity period.

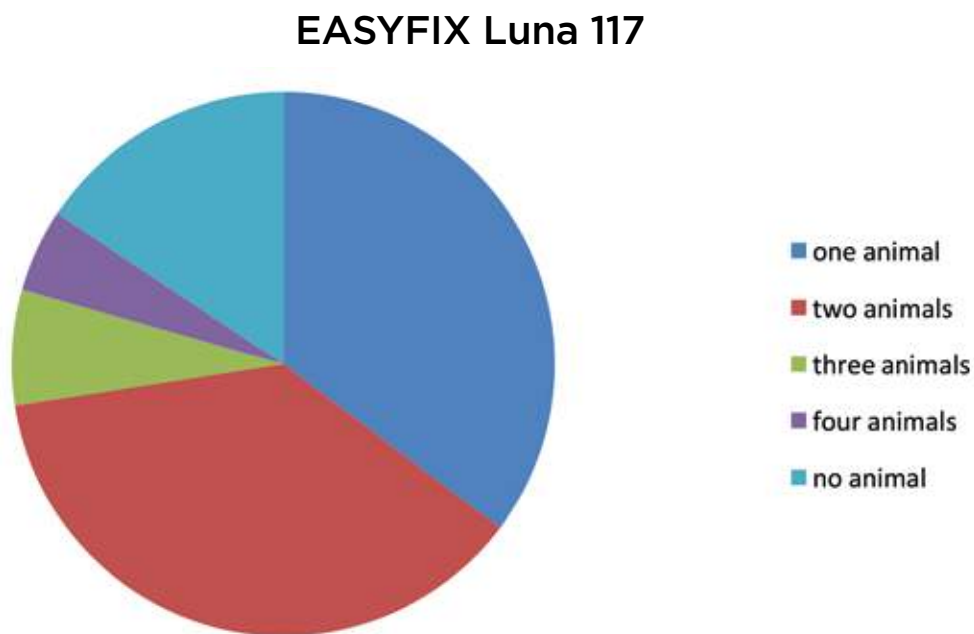
The attractiveness of the Luna 117 can also be measured when looking at the overall usage by the animals within the monitored period in figure 2. 16 % of the time, no animal was using the floor toy; meaning that more than 80 % of the time the animals were using the Luna 117. Not only individual animals could be monitored, but quite often a number of animals at once.

**Figure 1:** Fattening pigs playing with the Luna 117 at once



Nutzungshäufigkeit: *Frequency of use*

**Figure 2:** Proportional usage time of the Luna 117 in one bay



By filming and analyzing 6 hours of video during the activity phase, the acceptance of the Luna 117 was measured. Here you can see an excerpt from the videos.



## Farm 2

**Farm: 2000 fattening spots, area with 500 animals is fully occupied**

**Bay size: Pen 1: 33 animals (5 x 5 m)**

**Liquid feeding TFV 1: 3 (middle-length trough)**

In this case, the Luna 117 was added to a fattening bay with 33 fattening animals, in addition to an occupation toy at a chain (organic nibbling sun). At this farm, the activity phase of the pigs (12:00 to 18:45) was also monitored via video. Hereby, it was registered how often and for how long one or more animals were occupying themselves with both toys. The toys had been in the bay for several days before the monitoring commenced.

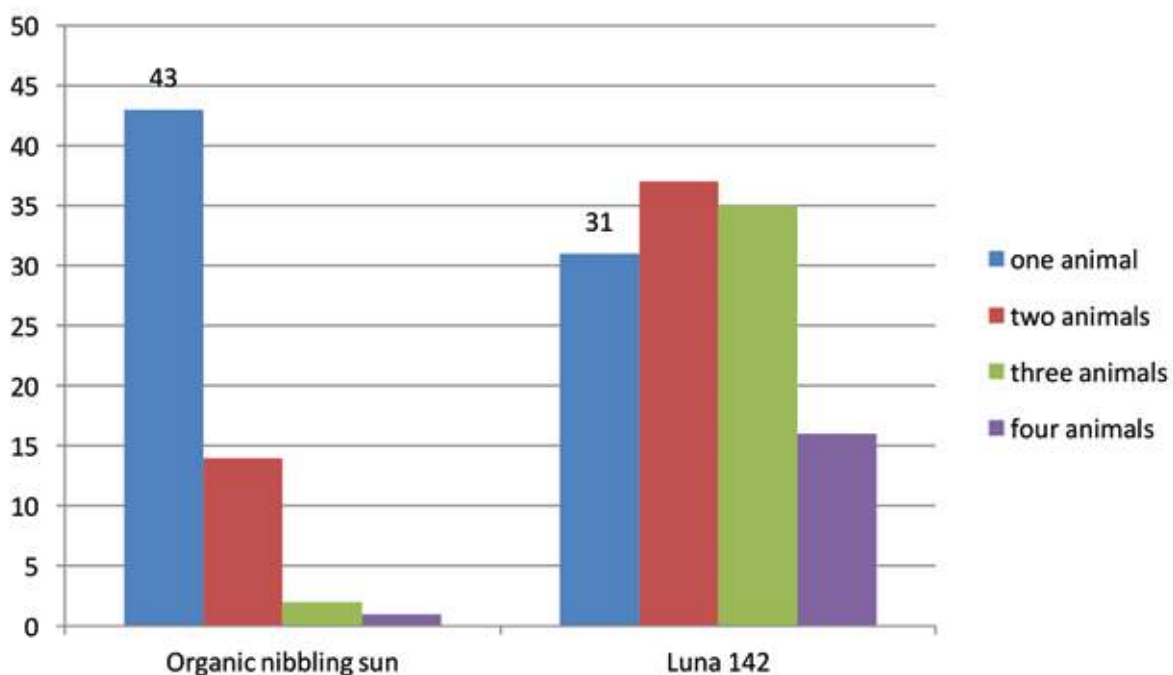
The floor toy was used far more than the occupation toy at the chain. It could also be observed far more often how several pigs were occupying themselves with the Luna 117 (Figure 3).

The difference in usage frequency of the two objects also shows in the proportional usage time. Thus, the Luna 117 was used five times as long as the organic nibbling sun during the observation period.

### Conclusion

Due to the combination of mobility and rollability, the Luna 117 remains interesting to the pigs for a long time and does not get as dirty as a ball because of its smaller surface. Even young animals can manage to roll the floor toy through the pen and bite on it. The movement motivates other pigs to join in on the playtime. The Luna 117 is extremely useable as a permanent means of occupation for piglets. With fattening pigs >40 kg the Luna 117 is subject to a lot of biting and is worn down quickly (see pictures above). In order to get some diversion, the floor toy is also a good additional means of occupation for nervous fattening groups <40 kg.

11/2016 **TopGenetik** 45



Nutzungshäufigkeit: *Frequency of use*

# A NEW FLOOR BASED RUBBER DEVICE COULD IMPROVE PIG WELFARE!

Dr. Keelin O’Driscoll

Provision of manipulable material is a legal requirement in pig production, but difficult in slatted systems. The most effective devices for reducing harmful behaviours are manipulable and destructive. Rubber devices that can be chewed and gradually wear away have been shown to be reasonably effective in reducing harmful behaviours.

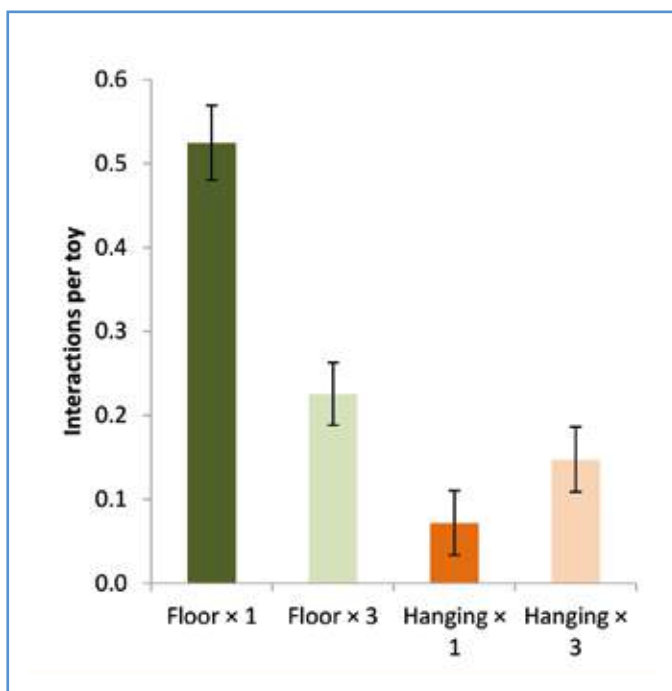


However, most of these have been devices that are suspended from the ceiling or wall, which don’t necessarily satisfy the pigs desire to root and move material around. Recently, we carried out a short trial in Moorepark investigating the appeal of a novel floor toy compared with a similar toy hanging from a chain. We compared the toys at different allowances (1 or 3 toys at a time) to see whether providing more of them has any benefits for the pig, or has an effect on the wear of the toy.

During the experiment, the hanging toy didn’t lose any weight at all, and the length of the arms didn’t shorten. However the floor toy consistently lost weight and arm length whether there was only 1 or 3 in the pen, significantly more so when there was only 1. This can be explained by the behaviour of the pigs towards the toys: the pigs had more interactions with the floor toys than the hanging ones, and each interaction lasted approx. 5 times longer. Thus the floor toy appears to be more appealing to the pigs, and holds their interest for longer.

With regard to the number of toys, pigs had the same number of interactions with the floor toy regardless of whether there was 1 or 3 provided. This explains why the wear of this type of toy was much greater when there was only 1 provided, as this single toy was absorbing the same level of activity as when there were 3 in the pen. Moreover, when there was only 1 floor toy,

significantly more of the interactions ended with a displacement than when there were 3, or when the pigs had hanging toys. This also indicates the appeal of the toy to the pigs, as they appeared to be queuing up to use it.



There was no problem with tail health in this group of pigs, but we did find that when pigs had more toys, they had less damage to the ears, so easy access to the toys could be important to reduce harmful behaviours. We also found that there was no problem of the floor toy getting dirty or trapped in the automatic feeder – in fact the toy was so clean we could not score it for dirtiness, with less food stuck to it than the hanging toy. Overall this floor toy appeared to be more attractive to the pigs than the commonly used hanging toys, with no problems of hygiene, and very little management involved.



# The effect of rubber enrichment device design and amount on the welfare of pregnant gilts



K. O'Driscoll

<sup>1</sup>Pig Development Department, Animal & Grassland Research and Innovation Centre, Moorepark, Fermoy, Co. Cork, Ireland; [www.teagasc.ie](http://www.teagasc.ie)

## Conclusion

**This floor based enrichment device appeared more attractive to pigs than a hanging device, and could be an effective enrichment device for slatted systems**

## Introduction

Provision of manipulable material = legal requirement for pigs

- Allows pigs to perform investigatory and chewing behaviour
- Reduces harmful behaviours - tail and ear biting
- Straw, and other organic materials generally favoured by pigs

### However

- Provision of loose material not possible in slatted systems
- Hanging rubber devices are often used instead, as chew toys

➔ could a floor device provide additional benefits?

### Objective

To determine whether a rubber, floor based enrichment device could improve behaviour and reduce lesions in pigs, compared with a hanging fixed point device

## Methodology

### 4 Treatments



- ➔ 1 hanging device / group
- ➔ 3 hanging devices / group



- ➔ 1 floor device / group
- ➔ 3 floor devices / group

- 36 gilts managed as one group provided with treatments
- Treatments applied over time, duration of 4 days each
- 3 day 'control' period (3 hanging + 3 floor) between treatments

### Measures

#### Device measures

- Arm length
- Device weight

Recorded at beginning and end of each treatment period

#### Health measures

- Ear and tail lesion scores

#### Behaviour measures

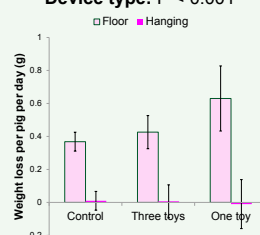
- Video recording on last 2 treatment days between 0900 - 1700
- Scan samples at 5 min intervals: No pigs interacting with devices
- 8 behaviour bouts / day analysed for duration and no displacements

Pigs had the same number of interactions with the floor devices, regardless of no. in the pen, and interaction bouts were almost X5 longer than with the hanging devices  
*Further work planned to elucidate the types of interactions and appealing characteristics!*

## Results and Discussion

### Device weight

Device type:  $P < 0.001$



### Device arm length

Treatment:  $P < 0.001$

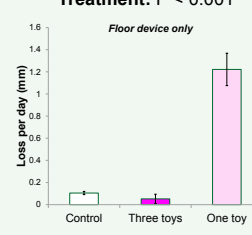


Figure 1. More arm length and weight loss occurred when only 1 provided

### Ear and tail lesions

- No effect of device or amount on tail lesions
- Lower ear lesion scores when 3 devices provided than 1 ( $P < 0.05$ )

### Amount of interactions with the device

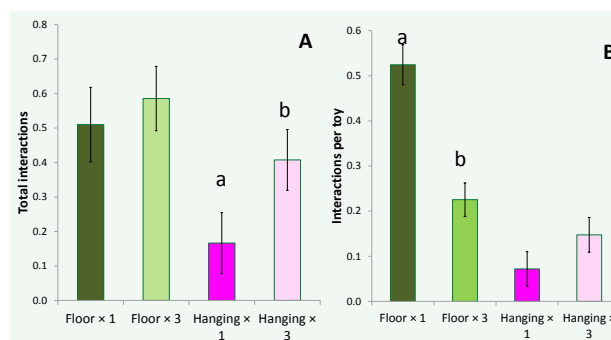
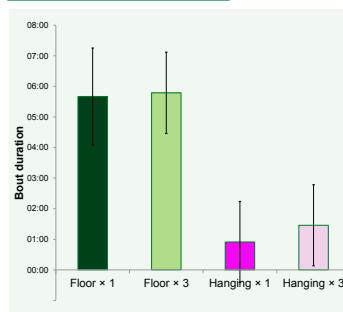


Figure 2. (A) Interactions / group / scan and (B) interactions / toy / scan sample

### Interaction duration



No effect of displacements on bout duration, but more displacements when only 1 floor device than any other treatment ( $P < 0.001$ )

Figure 3: Duration of interactions



All enrichment devices used in this trial were provided by Easifix: <http://www.easyfix.ie/>



## GET IN TOUCH

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