Feeding Space requirements for Grow-Finish pigs

With live- and carcass weights increasing year over year the performance of pigs can become limited due to a shortage of feeder spaces. Carcass weights in the U.S are expected to be an average of 100.6kg dressed in 2025. With pigs becoming increasingly larger the size of feeding equipment has to be adjusted accordingly to maintain optimal performance.

Number of feeding spaces

The number of feeding spaces required varies based on the feeding system used;

- Dry Feeders without full head barrier between feeding places; 6 pigs per feed space
- Dry Feeders with full head barrier between feeding places; 10 pigs per feed space
- Wet/Dry Feeder; 14 pigs per feed space
- Restricted feeding (liquid); sufficient space for all pigs to eat at the same time.

Feeder Space Dimensions

When determining the amount of feeding spaces required per pig it is necessary to also calculate the required dimension of the feeding space. The minimum width of a feeding space should be the shoulder width of the pig, plus 10% to accommodate pig variability and movement;

$$\text{Feeding space (cm)} = 1.1 \times \text{shoulder width}$$

The shoulder width of a pig can be calculated based on the bodyweight of the pig;

$$\text{Shoulder width (cm)} = 6.1 \times \text{BW (kg)}^{0.33}$$

The table below shows the shoulder width and feeding space requirement for pigs of different weights.

<table>
<thead>
<tr>
<th>Weight kg</th>
<th>Shoulder Width mm</th>
<th>Feeder space mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>130</td>
<td>143</td>
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<tr>
<td>20</td>
<td>164</td>
<td>180</td>
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<tr>
<td>40</td>
<td>206</td>
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<tr>
<td>100</td>
<td>279</td>
<td>307</td>
</tr>
<tr>
<td>125</td>
<td>300</td>
<td>330</td>
</tr>
</tbody>
</table>

Pigs prefer to eat from a surface at or slightly above floor level. They can eat from levels as high as their shoulders but if they exceed shoulder height, feeding might be limited.

The depth of the feeder is the distance from the lip of the feeder to the feed access point at the back. Feeder depth for grow-finish pigs should be 20-30 cm, depending on the weight of the pig. For smaller pigs a 20 cm feeder depth is sufficient but larger pigs (95kg) have a difficulty eating from an area closer than 20 cm from the front of the feeder.
**Feeder Adjustment**

Feed cost accounts for 60-70% of the total cost of pig production. Correct feeder adjustment plays a big role in reducing feed cost and improving the bottom line. Feeders with inadequate flow will restrict feed intake and reduce performance.

Feeders that are overflowing result in increased feed waste, higher feed conversion and increased feed costs.

In an adequate adjusted feeder 15% of the trough is covered with feed.

**Wet/Dry Feeders**

A meta-analysis of 15 trials comparing dry feeders and wet/dry feeders concluded that pigs with access to wet/dry feeders constantly had a higher average daily gain and feed intake. Daily gain was on average 40 gram per day higher but there was no overall difference in feed conversion between feeder types. The pigs on the wet/dry feeder had a higher carcass back fat and the lean percentage was lower for these pigs. Another benefit of using a wet/dry feeder is the reduction in slurry production with 20-50%. Besides the wet/dry feeder it is recommended to provide an additional drinker in the pen. Adding a supplemental drinker improves feed conversion and in some research has shown to improve average daily gain.

References:  
Dr. John Carr. 2013. The basic stockmanship guide: Pigs, Hogs and Swine. John Carr