

Limitations to Performance in Pig Production

In practical biological systems, limitations determine the outcome.

To take a simple example, let's say a bacterium is capable of dividing into two every hour. With no limitations to growth, one bacterium would become around 300 trillion in just 48 hours.

In practice, the biological system runs out of food, water, space and so on a long way short of this theoretical performance. Although it may initially increase by 100% per hour, this soon falls. If it increases by 50% per hour, the outcome is only about 300 million. If it is only 39%, it becomes just 300 thousand.

Most biological - as well as business - systems are somewhat more complex than producing bacteria. Mechanisms are more complicated and interact in a variety of ways. But exactly the same principle applies. Productivity is more or less a long way short of theoretical performance, and outcomes are always worse in both technical and financial terms.

Producers vary widely in their attitude and appreciation of this general principle. You can characterise them as two extremes :

- a) assuming factors **are not** limiting unless proved to be so
- b) assuming factors **are** limiting unless proved to be not so

The first says "If It Ain't Broke Don't Fix It".

This assumes that everything is inherently "OK" and that production is basically as good as it can be. You might also call this a **Problem-Solution** approach to management. Everything is OK, everything you do is the way it should be done, unless there is a problem. Once there is a problem, you look for a solution. When you have the solution, everything is OK again.

The second says "We Can Do Better".

This assumes that there are limitations to performance, even if you can't see them very easily. You might also call this an **Opportunity-Exploitation** approach to management. Every aspect of production represents an opportunity to remove some limitation is reducing the overall outcome, and you are looking for ways to exploit the potential.

Example

On the basis of an expected water requirement, and an expected delivery rate of drinkers, a certain number of drinkers are installed in finishing buildings.

You don't *know* whether the pigs get enough water or not but water is an essential resource, and a lack or shortage of water could affect the outcome, so it would matter. If they don't get as much water as they want, they'll eat less, and achieve below their potential. In practice, they will limit their demands to what is available.

Following the Problem-Solution route, you would do nothing. There is no problem because they get as much as they need.

Following the Opportunity-Exploitation route, you would fit more drinkers or at least consider it. You consider whether there is a limitation, and look for an opportunity to remove it.