

SOME THOUGHTS ON PORK PRODUCTION CHALLENGES AROUND THE WORLD – THE GOOD, THE BAD AND SOME SUGGESTIONS

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ABSTRACT

A review of what pork producers do well and not-so-well across the world is presented in table form.

Three areas which the author – a widely traveled hog consultant working in 22 countries worldwide – suggests pig farmers should consider in particular are...

1. To travel more so as to see for themselves global ideas which could well be applicable to their own locality and systems of production.
2. To address the problem of labor overload, where ‘tail-chasing’ retards good business management decisions. Suggestions are put forward on how the modern producer/his farm manager can rectify this universal problem.
3. The drag of disease; the author suggests a series of practical, on-farm strategies to arrest and then reduce the worsening situation worldwide, all based on improving the herd’s natural immune defenses.

INTRODUCTION

This paper will not contain the many tables of pig production output, costs, market coverage and economic global details often written about, but is one widely-traveled pig consultant’s experiences and considered opinions on how pig production in the major pig producing industries is progressing (and sadly, retrogressing in some others) as well as some specific suggestions for improvement.

AN OVERVIEW OF WORLD PIG PRODUCTION

We are Still in the Golden Age of Pig Production

So much is happening globally, it is both breathtaking and confusing – and to try to keep pace with it all can be overwhelming (Tables 1 and 2).

Table 1. What is happening worldwide?

Sophisticated pig production industries	Less sophisticated/basic pig industries
<ul style="list-style-type: none"> • Major strides in genetics/AI. • Fewer farms and producers. • Bigger farms through..... • Integration with Agribusinesses. • Profit rather than ultimate performance. • Problems with recruiting and keeping good labor. • Welfare-driven changes. • Pollution awareness. • Wide differences in carcass leanness still extant – quality variable • Disease control is increasingly expensive. • Pay for advice/help/training. • Growing awareness of public opinion. 	<ul style="list-style-type: none"> • Only vague awareness of genetic possibilities and little or no AI. • Wide differences in unit size, but only due to.... • Agribusiness making inroads (financial ‘support’). • Local profit; performance as it comes. • Family or cheap hired labor. • Welfare not a perceived problem. • Minor pollution awareness. • Carcass quality, often poor, is perceived as satisfactory. • Reactive disease control only. • No or little advice etc. sought outside their neighbors. • High awareness of (local) public needs.

Table 2. Worldwide weaknesses.

- Not enough time spent with pigs.
- Not concentrating on the smallest, weakest, slowest pigs.
- Poor at measuring/monitoring.
- Not sufficiently observant. Concentrate! Fresh eyes useful.
- Not clean enough.
- Too much tail chasing.
- Records still poorly used. Too few or no graphics so as to stimulate action.
- Failure to check food and ventilation.
- Not using the veterinarian in a preventive role.
- Buying on price, not on paybacks.
- Not condition scoring / using scanners, etc.
- Outdated housing

A good consultant recoups x5 to x10 of his fees!

Not only does one set of experts, or one University not know it all, but no one pig keeping nation does either. The more I travel among other pig industries, the more obvious this is.

Pig producers don't travel nearly enough to see for themselves what works and what does not on other pig farms/industries.

Every month there are new techniques being adopted, or forced on us by politicians and their bureaucrats, do-gooders and fuss-pots, or alternatively found to be econometrically feasible, (econometrics = the study/application of cost effectiveness).

Practical Developments the Pig Producer Can Use Now

Partial depopulation, later weaning, group housing sows, streaming and segregated pig flow, pipeline feeding, feeding to bolster immune status (Challenge Feeding), Menu Feeding, batch farrowing, cheap eco shelters, outdoor sow production, several methods of turning voidings into a resource, electronic sow feeding.... And so on.

How many of these up-and-running techniques have you looked into?

FUTURE PROMISE

Scientists and researchers are doing great work on genetics and the pig genome, baby pig nutrition, sow nutrition (in my view overdue), viral diseases (after price volatility, probably our greatest threat to profit), auto-sorting and new methods of weighing, organic nutrients and their sources, electronic identification and data logging, computer analysis of performance and progress (in my heretical opinion, this does now need reviewing and improvement), pathogen resistance and antibiotic replacement, odor control, pollution and thinking of voidings as a resource, not as a nuisance.

Great work is being done in all these areas, and more. Trouble is pig farmers in one country understandably follow the lead of their local or national leaders. That's fine, but these same farmers also, through the media, keep an eye on what other pig industries are recommending *but they rarely go and see for themselves*. This is unwise and – dare I say it – may be negligent?

There is no substitute for going and seeing for yourself. I am an international traveler whose on-farm work in the past 5 years alone has taken me to 14 different pig industries, some 116 farms, 7 major commercial firms marketing new ideas or products, 4 Government bodies, 6 Universities doing exciting research and 4 processors revising and enlarging their systems. All since 2000.

This 'go-seeing' has radically influenced my opinions and on-farm advice – as well as providing new or revised material for some 100 articles, papers and 3 books written over the period.

OK so we cannot *all* go see! But what any industry needs to do is send experts you can trust in various sectors – veterinary, housing, management, AI, processing etc. to report back every

2 years with a home economist adding his calculations to the findings. The Danes do this, the British are starting to, and the Japanese do it quietly.

Examples of What “Go-seeing for Yourself” Can Provide

1. **Will the sow stall ban come to Canada?** Maybe, maybe not. Should it do so, you must come and see how we Europeans have set about solving this imposition – because imposition it is – there is little wrong with the sow stall designed and managed properly (but in our case the politicians and the Welfarists won!). We have a *huge* amount of practical experience ready and waiting assessment by you under your conditions. The group housing system we have evolved to replace the stall is (now) brilliant. Performance is *better* than in stalls. Everyone who has made it work is delighted. But it has been a steep (re-)learning curve. (I kept sows in groups 45 years ago.) Before you (have to) jump – come see for yourselves.

2. **We must be paid on (good quality) lean meat, not carcass weight** dead or – perish the thought – live, which latter is a nonsense. Is this happening in Canada yet? No, or not enough? So come and see what the Danes are doing in this area; get totally convinced, and lobby hard for its complete introduction here. Your future livelihood in a competitive world depends on it.

3. **Partial depopulation (PD).** Sure, TD (total depopulation) is best – but what a hassle! What a long time with no income! PD solves 90% of the problem for a practicable cost, with between 75% and 80% of the benefits, done properly. Several veterinary practices in England are experts at the essential protocols. So come over and learn from them, or send your best pig vets over, a better solution, I guess. Here is some interesting data (Table 3) on how PD might rank (under recent British conditions and economics), with other major disease-combative strategies.

Table 3. How does partial depopulation compare with other ‘new’ strategies?

	Cost	Improved Growth	Reduced mortality	Drug use	Approx. payback time
All-in/all-out	Low	1-7%	4.0%	29-45%	Variable*
3 week batch weaning	Low	12-15%	40-45%	30-50%	Long
PD/sow medication	Fair	25-45%	45-65%	55-70%	9-15 months
Full Depop:repop	High	30-40%	65-85%	70-90%	14-26 months

* Depends on how out-of-date is the farm before AIAO, current skill in operating a continuous farrowing regime and the quality of AIAO conversion.

Source: Kingston 2004 (extrapolation)

4. **Lactation feeding.** Always a problem with getting enough nutrients into the sow to sustain these increasingly large litters the geneticists are providing. Ask yourself who in the world have had the most difficulty in getting the farrowed sow to eat enough? *People in hot countries.* At last they have cottoned on – choosing high appetite genes, keeping sows cooler,

using special hot weather diets/ingredients, using water well in combination with controlled ventilation etc. Go see what they are doing and adopt/adapt it to your conditions, e.g. most, maybe all Canadian closed-up farrowing barns I visit are 'too hot and appetite-limiting' and there are ways of getting around this which the Far Easterners have found work for them. Go-see and then use the ideas you can adopt. Sure, the conditions you see out there will be very different, but there are ideas in there which are applicable anywhere.

5. Wet (pipeline) feeding. Sure, in your cold winters a problem – maybe. But we in NW Europe know how to conquer frost/wind-chill down to a certain degree of frigidity – and you are the world's experts at cold weather, so your specialists (and you have the best environmental ag. engineers in the world) are on hand to address this problem, thus all it needs is a bit of your expert cold-weather thought given to it.

The advantages of wet feeding for *present* conditions are well documented. The *future* holds far greater promises however, as *only with computerized wet feeding* will you/we be able to design 'variable' feeds to match the growing pigs' immune status; for the feed compounder (or larger farm) to make 300 or more diets from just 3 bulk bins; to use cheaper industrial by-products which don't need to be dried/crystallized (e.g. amino acids, enzymes); to use at-present discarded vegetable matter (brassica tops, banana leaves, herbage), and to develop the *full* phase-feeding enzyme-supplemented, fermentable concept rather the partial, less exploitable dry feed route which is giving variable results under research conditions.

What exciting possibilities, some here now!

So go see the leading wet feeders (latterly mostly German) and get ideas to enthuse your excellent nutritionists (who seem to me only to travel to conferences and not to real leading pig farms?) in this futuristic area. Just travel, guys and carefully examine what's happening at the sharp end of *practical pig production* across the world. And it's a lot! The world's our oyster!

Enough about traveling and go-seeing. Let's have a look at what can be done better (in my opinion) in global pig keeping.

GOOD AND BAD POINTS IN GLOBAL PIG PRODUCTION

All pig farms are different, that is true enough. Yet – strangely – I find pig producers mostly do many 'same' things well, many 'same' things badly. Of course there are climatic differences. A hot, humid locality is very different to a frigid one. Again, hot *dry* (Australia, Spain) is different to hot *wet* (Thailand, Kyushu/Japan) and need different advice.

FIRST THE GOOD NEWS – WHAT YOU DO WELL

Breeding. Great care and effort is put into this area by pig producers and their staff. Sometimes breeders hog-tie themselves in poor mating section design, but their record on

breeding is good, nevertheless. Producers have taken very well to the AI revolution, even if the learning curve has a little way to go yet.

Nursery management on the larger farms is good – improving in leaps and bounds. Segregation strategy is a welcome development.

Use of the veterinarian. Among ‘professional’ pig producers – excellent. The veterinarian is much more of a production partner these days (Table 4). I wish it were so universally; in some countries it is still in the Stone Age!

Table 4. Before-and-after results from using a pig specialist veterinarian to disease-profile 3 farms, with extra vaccination & re-modelling expenses costed in. (US\$ per sow)

Farm	Before			After		
	A	B	C	A	B	C
Estimated cost of disease per year*	284	186	300	80	96	109
Cost of veterinarian	8	3	12	30	27	31
Cost of vaccines & medication†	26	18	30	18	20	21
Cost of remodelling (over 7 years)	–	–	–	27	45	33
Total Disease Costs (US\$)	318	207	342	155	188	194
Difference (Improvement %)	–	–	–	51%	9%	43%

* Disease costs *estimated* from items like the effect of post weaning scour and check to growth on potential performance; respiratory disorders, ileitis, abortions, infectious infertility, etc.

† Note that the cost of planned preventive medication was *lower* than for reactive curative medicine.

Source: Clients’ records and one veterinary practice

Dedication. You can be extremely proud of your application. Pig producers and their staff are some of the most dedicated, caring and hardworking individuals when it comes to their skilled and not very salubrious jobs. This is true worldwide. Well done!

A shortish list, maybe, but I confine myself to what is – in my opinion – universal.

NOW TO THE BAD NEWS!

Because my time and space, quite rightly, are limited, I want to deal in fair detail with just two areas where globally, the pig producer *must* improve. These two areas are involved in every farm problem I am asked to solve. *Everyone*, these days (among a variety of other things).

Business Management and ‘Tail Chasing’

I put these two together because the latter has a considerable influence on the former.

Owners and managers are good at the practical hands-on aspects of pork production. In the past they have had to be, so on-farm work comes naturally to them, is enjoyable and satisfying, and includes the instinct of the manager to 'know what is going on'. But this leads to a weakness in our global industry, of the manager/owner's disproportionate involvement in daily practical tasks and not enough measuring, planning and thinking.

Important things in these areas don't get done, or are delayed because – of course – things break, animals get sick, supplies run out, staff go off work, the drain gets blocked, etc. 'Tail chasing' is a major flaw in any pig industry and – if (on-farm) pig production is compared to urban industry (e.g. electronics, retail supermarkets, clothing, etc.) it reveals an enormous, damaging, and – I have to say it – shameful disparity between them and us. In their thinking, in their application of business principles, in their measurement of econometric productivity, and in their acting upon what their monitoring suggests, we have much to learn.

We produce meat, not pigs. Pork production is a business, not a way of life. Profit comes before performance. Bigger is not always the solution – or even best. Spending money in the right place, at the right time, in the right amount is paramount to a decent bottom line.

It may seem a strange thing to say, but I see the need to tail-chase blunting the ability of owners and managers to devote enough time to MANAGING their pig enterprise, on so many of the farms I am asked to help.

So why do pig producers tail-chase?

1. **Not enough staff.** Good staff *is* difficult to get, and with some farms, to keep. A major aspect of a manager's job is to assess the working conditions (generally more important in the workers' eyes than emolument) he provides. You think you are the only business with problems over labor quality and recruitment and retention? Join the club! I've talked to successful non-porcine businesses and it is a major problem for them too. Study how the best of them have solved it – impressively, too. Yes, the same principles given below apply just as much to a pig business as a modern successful retailer, for example: -

Essentials in staff management

- Intelligent; attractive recruiting policy.
- Starting young (school – selling animals, caring, responsibility, computer use, etc).
- Choosing personality, not necessarily qualifications every time.
- Careful induction, with a 'buddy' policy to start with.
- Weekly revision of target-setting and daily conferencing.
- Involvement in graphical records.
- Good working conditions – or if difficult to afford, showing staff an appreciation of the difficulties and what you hope to do about them.
- A career structure.
- Planned and forecasted training to achieve it.

- Having (at least 15%) extra ‘man hours’ planned into the labor load to handle emergencies, or, better less costly, have reserve ‘off-the-team’ people (often retirees) as a back-up.
- Reasonable financial reward. Labor cost is 12-14% of pig production on average (some retail industries 30%) so a 2% hike in this on-cost is not the end of the world and anyway seems magnified in the recipient’s eyes. Built-in as a target-achieved bonus if you like. On every farm I visit with a labor problem *this extra 2% can be found in reducing wastage*. I’ve pointed it out so often when I’ve toured the farm. (Another pair of eyes.) Part of your ‘go-seeing’ policy should be to visit successful non-agricultural businesses and you will see how all the above work for them, and can work for you.

2. Lack of planned delegation. Things go wrong, break down, the unexpected happens. Pig farmers and their more experienced staff are ‘good with their hands’. This encourages them into sorting breakdowns out for themselves, taking up time and physical and mental energy, which is better spent on *managing*, see below. Employ called-in specialists. On the very large farms have your own in-house specialists. Both are cheaper in the end. ‘*Delegation off-farm*’ is a new development for the pig industry, which allows time for better ‘*Decisions on-farm*’.

So how much ‘work’; how much planning, measuring and thinking?

This depends on the size of the farm (Table 5) but my experience with clients suggests that managing a grow-out unit of 500-1000 sows with an adequate labor force (20 man-hours/sow/year or 4-8 men) a manager needs to spend at least 22 - 24 hours per week on non-manual management tasks – between 3½ - 4 hours a day – in order to:

- Look at every pig/pen of pigs once a day (with the veterinarian, once a month).
- Plan and check on pig flow.
- Monitor performance graphically, and think about how to act on it. *You cannot manage what you don’t measure.*
- Staff-briefing, motivation and control.
- Buy well.
- Sell well.
- Plan, fix, monitor, discuss and modify production and fiscal targets.
- Keep yourself up-to-date,
- And.... Be in the right place at the wrong time – and make it look accidental!

Now to the second basic failing world-wide, that of...

IMMUNITY, and Lack of Understanding of the Correct Level of Natural Immunity

The cost of disease from clients’ records. As I’ve said, after price volatility, disease (especially viral disease) is our biggest drag on performance and profit. Compared to what is possible on the best farms my clients’ farm records reveal disease costs us 0.3 on the Food Conversion scale from 7-100 kg (or 28 kg less liveweight sold/tonne feed fed/pig) and 4 fewer slaughter pigs sold/sow and gilt/year (or 26 kg less weaner weight/sow/year at 21-day weaning). This, translated to live slaughter weight at 106 kg is 424 kg of live pig/sow/year

foregone. Both contribute on most farms to a massive one third less gross margin to which has to be added another 5% to 10% extra costs of dealing with disease outbreaks, or the preventive threat of disease.

A 40% loss of profit is quite a realistic disease cost figure across the world. It is a shattering figure! That's what disease probably costs my clients before attention to bolstering immune status, both clinical outbreaks and the under-recognized rumbling, low level, much less apparent, subclinical form.

Table 5. Workload expressed as man hours per sow per year.

	40 farms 120-350 sows		10 farms 825-2040 sows	
BREEDING TO WEANING				
Feeding	4.2		2.1	
Serving	3.5		3.1	
Care and attention	2.5		1.8	
Moving	2.0		1.9	
Cleaning and disinfection	1.8		1.9	
Total	14.0	50%	10.8	57.5%
FINISHING				
Feeding	1.5		1.2	
Moving and weighing	2.0		2.1	
Cleaning and disinfection	1.5		1.1	
Total	8.0	30%	4.4	23.4%
OTHER TASKS				
Repairs and maintenance	2.6		2.1	
Records	1.1		0.8	
Other management	1.0		0.6	
Total	4.7	17%	3.5	18.6%
BUILDING CONSTRUCTION	0.9	3%	0.1	0.5%
Total man hours/sow/year	27.6	100%	18.8	100%
Finishing pigs produced/sow/year	19.8		20.1	
Liveweight produced sow/year (kg)	1784		1850	
Labor cost/sow/year (<i>converted to US\$</i>)	US\$252.07		US\$232.18	

Source: Clients' Records

Where does understanding immunity come in? Right at the start of things. The reason why virus disease is on the increase (PRRS, PMWS, Swine 'Flu, Non-specific Infertility to name the four worse problems (in my farm visits recently) is, in my view, because pig farmers all over the world don't understand immunity.

A correct level of protective immunity in a pig herd depends on many things. Worse, it changes continually on the farm according to outside factors, and to the animal's response to challenge. Science can help materially. And does help/is helping. But pig producers can help themselves far more than they do. The most significant effect of this lack of understanding is that pig farmers fail to be convinced that certain precautionary measures are urgently needed. These are management strategy measures and redesigned housing. Also that the level of immune protection differs in breeding stock and in grow-out stock, and a different approach to the acquisition of the correct level of immunity is needed.

CHANGING THE MIND-SET

These measures involve the *willingness to change present production strategies, and... spending the right amount in the right place. The need to spend more money in certain areas affecting immunity is now acute.*

Here is a list of strategies needed to allow a correct natural immune defensive barrier to become established in *any* pig herd.

Breeding

- A longer induction time for bought-in stock, with a distinct challenge and recovery phase.
- Close liaison with a specialist pig veterinarian who monitors the herd's disease profile (see Table 4).
- And thus he/she can advise on what challenge protocols are likely to be most beneficial for the disease picture at the time.
- Not to grow replacement gilts too fast.
- A gilt pool is a valuable asset.
- Generally speaking, get cross-fostering over within 24 hours from birth.
- Colostrum management needs more attention.

Weaning

- Greater attention to cleanliness, especially troughs, in-contact surfaces and signs of looseness.
- Specialist pre-and post-weaning link feeds to reduce dietary stress.
- Carry out a monthly stress audit with your veterinarian.
- Constantly review stocking density (including grow-out pigs once past the post-weaning stage).
- Sanitizing the air (in situ fogging) in cases of respiratory disease.
- Water adequacy post weaning.

General

- All-in/all-out is essential.
- Partial depop. is a very significant defensive measure.
- Correct use of the *latest* anti-viral disinfectants.
- Correct use of the *latest* farm-approved detergents.
- Water sanitation as routine.
- Air sanitation (fogging with pigs present) in cases of respiratory disease.
- Awareness of mycotoxin presence, prevention and control.
- Discipline in vehicular access needs radical stiffening (we learned this from the FM Disease disaster).

Yes, all these protocols cost more money. But not 40% of your profit margin – or even 20%, as we will never live in a perfect world, disease-wise.

I have published – in my two recent textbooks – the costs and paybacks of most of these immune-favorable strategies. The paybacks vary from 2:1 to 12:1. *None* of them have cost more than their proven benefits.

Enough said?

CONCLUSIONS

A very great deal of technical and commercial development in the whole field of cost-effective pig production is in progress across the world despite the wide variety of markets, climate and costs. No one pig production industry or research center knows it all and everybody concerned – especially the pig producer – must travel and see for themselves what other pig farmers and researchers are finding is successful and then think carefully what good or promising ideas may work for them under their own local conditions.

Two weak areas on most pig units today are the lack of time devoted by managers or owners to business management planning, and a poor understanding of management strategies to achieve a correct immune status.

The answers are there to be adopted.

Thank you for listening.

LITERATURE CITED

Kingston, N. 2004. Health Upgrades: Disease Reduction Strategies for Finishing Herds. Proc R.A.C. Pig Conf. Cirencester, England, Sept. 2004.

REFERENCES

All the strategies and protocols including clients' performance tables described in this paper can be seen in my two textbooks published in 2004 and 2006.

'Pig Production Problems – A Guide To Their Solutions' (650 pp., 65 checklists).

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