Health considerations for the year 2000

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Abstract
As the swine industry matures, profit margins will decrease. Control of the major factors affecting feed cost will drive the system. Upgrading or maintaining health will be a major emphasis, because disease agents and complexes affect growing-finishing performance. Many diseases, such as pneumonia caused by Actinobacillus (llaemophilus) pleuropneumonia and swine dysentery, dramatically affect growing-finishing performance. Diseases decrease average daily feed intake (ADFI) and increase feed per gain ratio (FIG) in many instances. At the same time, they increase input costs via treatments, vaccines, and feed additives. Historically, our control methods may have been successful on individual farms, but not across large populations. Because of the dynamics of disease complexes, it has been difficult to understand the disease agents and/or their interactions, let alone define a cost-effective method of control or elimination. However, several new techniques offer hope of optimizing the genetic capability of growing-finishing pigs with respect to average daily gain (ADG) and F/G. These control measures become more important as restrictions increase on therapeutic feed additives, injectables, and the producer's goal of providing a pork product untainted by residues of any kind. Likewise, in the future, available carcass-enhancing products, such as Ractopamine, may not allow simultaneous use of therapeutics, requiring production systems with pigs of high health status.; Swine Day, Manhattan, KS, November 21. 1991

Keywords
Swine day, 1991; Kansas Agricultural Experiment Station contribution; no. 92-193-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 641; Swine; Health considerations; Modified early weaning

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HEALTH CONSIDERATIONS FOR THE YEAR 2000

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As the swine industry matures, profit margins will decrease. Control of the major factors affecting feed cost will drive the system. Upgrading or maintaining health will be a major emphasis, because disease agents and complexes affect growing-finishing performance.

Many diseases, such as pneumonia caused by Actinobacillus (Haemophilus) pleuropneumonia and swine dysentery, dramatically affect growing-finishing performance. Diseases decrease average daily feed intake (ADFI) and increase feed per gain ratio (F/G) in many instances. At the same time, they increase input costs via treatments, vaccines, and feed additives. Historically, our control methods may have been successful on individual farms, but not across large populations. Because of the dynamics of disease complexes, it has been difficult to understand the disease agents and/or their interactions, let alone define a cost-effective method of control or elimination. However, several new techniques offer hope of optimizing the genetic capability of growing-finishing pigs with respect to average daily gain (ADG) and F/G. These control measures become more important as restrictions increase on therapeutic feed additives, injectables, and the producer’s goal of providing a pork product untainted by residues of any kind. Likewise, in the future, available carcass-enhancing products, such as Ractopamine, may not allow simultaneous use of therapeutics, requiring production systems with pigs of high health status.

The ultimate goal of the production system for the year 2000 has the following components:

1. All in/all out pig flow;
2. All in/all out pig flow by sex;
3. Single stage production;
4. Close-outs on ADFI, F/G, mortality, and profitability by group;
5. Control or avoidance of respiratory and enteric disease complexes without massive individual or group animal treatment;
6. Less use of therapeutic antibiotics;
7. Residue avoidance;
8. More pounds of pork produced with less labor.

The tools developing to meet these goals by the year 2000 involve:

1. Biogenetics;
2. Vaccines;
3. Therapeutics;
4. Depopulation/repopulation;
5. Multiple-site production;

Biogenetics may produce a pig that is genetically resistant to various disease agents. However, the likelihood of this technology keeping up with the disease agents seems impossible and/or costly.

New, slow-release vaccines or therapeutics may be developed. Delivery systems may include implants or aerosol chambers. The

¹Carthage Veterinary Clinic, Carthage, IL.
time and cost of development may be an over-
riding factor.

Depopulation/repopulation continues to
offer an excellent method of improving health
of growing-finishing pigs. However, the length
of the effect and the commitment to repeated
depopulations need to be established. Practical-
ity of repeated depopulations/repopulations
must be evaluated on cost effectiveness, espe-
cially in a herd with good maternal production.
Start-up effects, such as low farrowing rates,
must be amortized over the whole repopulation
effect.

Multiple-site production and modified,
medicated, early weaning may allow us to
fulfill the components for health by the year
2000. Multiple site establishes production
phases with the hope that the break in people
and pig contact will reduce disease transmission
and provide the flexibility of eliminating or
minimizing diseases that are in the nursery-
through-finisher population. This type of
production is used routinely in the poultry
industry and has been used by some breeding
companies in establishing new units to reduce
health risks. In the near future, multiple sites
will mean growing-finisher buildings with
only one week’s production of one sex of
animals. Disease control, then, is designed
around a separate facility system.

A progression of multiple-site production as
diseases are established in the sow herd is
modified, medicated, early weaning (MMEW),
or Isowean™, which is a method to upgrade
health status in nursery through finisher.

Modified, medicated, early weaning is a
nonsurgical method for procuring minimal
disease pigs. MMEW pigs can be free of
numerous infectious agents such as Mycoplas-
ma hyopneumoniae, Actinobacillus pleuropneu-
moniae, Haemophilus parasuis, Streptococcus
suis, Treponema hyodysenteriae, Pasteurella
multocida, Bordetella bronchiseptica,
Leptospira species and diseases such as trans-
missible gastroenteritis and pseudorabies.
These herds can also be free of external and
internal parasites such as Sarcoptes, Haemato-
pinus suis, Ascaris suis, Trichuris, and Oesoph-
agostomum. As a result, these herds usually
have greatly improved ADG and F/G in the
growing-finishing phase.

The methods for deriving MMEW pigs are
well described in literature and also have been
detailed in past presentations made by Dr. Tom
Alexander and Dr. Hank Harris. This
procedure has been further developed by the
Pig Improvement Company, Inc. in its Isowean
Technology™ concept. The concept was
developed as an extension of research initiated
by Cambridge University in England in 1979
on Medicated Early Weaning. Research
indicated that MMEW pigs are free of the variety
of agents outlined above which could be
present in the source herds. In the original
MMEW procedures, pregnant sows were
removed from the source herd in late gestation,
placed in isolated farrowing accommodations,
and medicated. Piglets were weaned at 5 days
of age, removed from the farrowing environ-
ment, and placed in an isolated nursery
separate from the source herd. At 20 to 35 kg,
piglets were removed from the MMEW nur-
series to another isolated grow-out unit.

Recently, the procedures have been
modified so that farrowing is done in the
original herd, but pigs are weaned into a sec-
ond site. This allows a break in the production
system to minimize the effect of disease.

The best application of this technology will
be in commercial production herds with excel-
lect maternal production but low health status,
which reduces the performance of the animals
in the growing-finishing phase and, thus, makes
the herd economically noncompetitive. Many
swine units, because of obtaining or adding
additional facilities over the last 3 years, al-
ready have multiple sites, of which one or
more can be utilized as an isolated nursery/
growing-finishing unit. The medication and
vaccination protocol should be designed to eliminate the diseases that are inherent to a particular herd and are increasing production costs significantly in the grower-finisher.

We have been involved with several herds utilizing MMEW successfully for weaning ages of between 10 and 21 days of age. Over 10,000 pigs have been weaned in this manner with less than .5% mortality. This technique has been used to repopulate one producer’s own herd.

This is an exciting time in the swine industry. Health effects on growing-finishing performance have come to the forefront. Control measures will allow a maturing industry to optimize costs.