

SOME THOUGHTS ON INTENSIVE ANIMAL PRODUCTION

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Allow me to express my very sincere appreciation to the council and members of this association for having elected me as President for the past year. I can assure you that I am very proud indeed to have held this position in a Society which today is the scientific backbone of one of the biggest industries of our country.

I wonder if you all appreciate how many animals were slaughtered in South Africa last year and their values:

	Number	Value
Poultry	75,0 million	R 60,0 million
Pigs	1,5 million	R 39,7 million
Lambs, sheep and goats	5,5 million	R 92,8 million
Cattle	2,1 million	R315,0 million
TOTAL		<u>R507,5 million</u>

Although this may appear to be a very large amount, we actually import large amounts of beef and therefore, the theme of our congress could not have been more appropriate, namely "Intensive Animal Production". The only omission has perhaps been that of adding advantages and disadvantages to this theme. You may well ask: Why this remark? Well, during the past ten years I have done a considerable amount of work on intensifying pig production, and on many occasions I have wondered whether with a little less intensification we could not possibly have avoided numerous problems which have arisen.

The four main species utilised in animal production are poultry, pigs, sheep and cattle; we have taken all these from runs, pens and paddocks and put them into cages, stalls and feed lots. The poultry industry has led the field. Where they had one hen per cage, then two, they now have three in most cases, allowing 72 square inches per bird. In broiler houses they allow nearly the same. There has been a similar development in the pig industry. The sow is now either tethered or in a sow stall, allowing her 14 square feet. The weaners are already being put into cages and, up to 20 lb live weight, 3 square feet is allowed. From then to slaughter as baconers we found 5 to 6 square feet to be adequate. Although very little has been done here on intensive lamb production, from all I have seen overseas, 3 to 4 square feet seems to be sufficient. In the beef cattle industry we have followed the Americans, and we are also allowing about 200 square feet per animal. On slats, I believe, 50 square feet would be sufficient.

These recent developments in intensification have meant that every facet of production has to be taken into consideration, be it nutrition, breeding, housing, mechanisation or disease control. The nutritionist certainly has had to start revising his ideas, and there are still many problems for him to solve. One of these problems coming very much to the fore is that, with the high percentage of mealie meal

(70 to 75%) in our rations, it is apparent that the chances of bringing protein levels much below 15%, as overseas barley feeders are doing, are very remote, unless we are satisfied with over-fat carcasses and poor conversion.

The geneticist is doing all within his power to find the animal which is more adaptable to these conditions. And here I suggest that we must first concentrate on legs and feet. It would appear that the lack of exercise and restricted movement is one of the main causes of leg problems the world over. Animal behaviour is assuming increasing importance under high density conditions, as many vices such as pecking and tail biting in poultry and pigs are creating problems.

The agricultural engineer has to find the answers to many of our housing problems. What do we really know about types of floors, lighting, ventilation, or temperature? Where our climatic conditions are so different we have already discovered that, whereas air is extracted in Europe, here we have to blow *in* air. Under slatted-floor conditions it seems to be advantageous to have a continuous flushing system, and not to leave slurry under the slats for 2 or 3 months at a time. Is concrete the best flooring or should we perhaps use hardwood or steel? We want to know how smooth or how rough the floor finish should be. Should cages be made of wire or expanded metal? Roofing is yet another problem; we have still to find a method of insulation which is both economical and efficient.

We have been fortunate in one respect, and that is that numerous automatic feeding systems have been developed overseas - be it for dry or wet feeding - which have been installed here and have proved very successful. But who knows, once our engineers start working on automatic feeding systems, we may well find a machine more suitable and simpler to operate for our available labour.

The higher the population, the greater the danger of disease. Although new drugs are frequently becoming available the problem of disease seems never ending. There are ways and means of reducing the danger, for instance, depopulating houses and introducing near hospital sterile conditions. However, this is only available at terrific capital cost, and additional housing (up to 20% of the existing plant) will be measured to ensure the same income.

Another serious problem is disposing of the waste material. Fortunately as regards chicken litter, a tremendous amount of research has already been done. Huge drying machines have been developed so that large amounts of poultry litter can be re-used as a protein supplement in sheep and cattle feeding. With pigs there is a serious problem as most of the waste comes off as a slurry, and sometimes with a bad odour. So large capital is required to install aeration plants to eliminate this odour. Engineers are already trying to solve this problem and may well find a far less expensive system than that presently available. You may know that overseas many large pig-

geries close to built-up areas have been forced to close down.

Sheep and cattle in our country have not as yet caused a disposal problem, as so much of our agricultural land can do with all the organic manure available. But eventually it could reach the stage, as it has already done in the United States, where there are mountains of manure near feedlots, and carting this away has become uneconomical.

Despite these problems, there are numerous advantages for example, less man hours per kilogram produced, far easier supervision within a restricted area, improved feed conversions and much improved turnover in building usage. It does however, demand a very high standard of husbandry, and with a terrifically high capital investment, a producer cannot be efficient enough to make a success of his venture.

As the standard of living in our country is improving all the time, the demand for more meat is usually the first on the list. The poultry industry is already contemplating an increase of another 10 million birds this year. Already 27% of our beef comes out of feedlots. This, we hope will increase to 50% within the next 2 years. And now that red meat has at last, after many years, become an economic proposition, many more feedlots will have to be built.

Even lamb productions seems to be a feasible proposition at present prices. As we already have a rather large surplus of pig meat on our hands, I doubt if we will see a vast expansion in this direction. It has, however, forced the

pig producer to become more efficient, because at the present low price and high costs of feed, many producers are working at a loss.

To meet the demands for more meat and to realise more efficient production, should we not form some type of co-operative in which the *Animal Scientist*, the *Veterinarian*, the *Agricultural Engineer* and the *Producer* all collaborate. Farms would be selected where experiments would be done on a large scale, for instance feeding and breeding experiments, erection of buildings and disposal systems, controlling disease. Costs would be borne on a pro rata basis, depending on the success of the feeding project or the building. I am certain that this could be worked out, and I have no doubt that there would be no problem in finding producers who would gladly assist and put their units at the disposal of the Department so that large-scale practical research schemes could be started.

In conclusion, while on the subject of co-operation, may I appeal to all of you by suggesting that the only way to success is through co-operation, and that this intensive production project will only succeed if we are really honest with ourselves and realise that the animal scientist cannot do without the veterinarian, and the veterinarian cannot do without the animal scientist. Moreover, the third of our farmers who really are worthwhile helping, who want to be helped and who are the backbone of the production side, are those who should obtain all the help they require because they cannot do without the help of the scientist.