No matter how your shuttle starts – use Arpocox to finish

Producers around the world have turned to shuttle programmes to reduce the risk of coccidiosis and at the same time maintain high production efficiency.

With the right shuttle programme you can use the best features of the various products available to help you make more profit in the finishing stages, the choice of anticoccidial is critical.

The anticoccidial you use in the finisher feed must not only control coccidiosis, it must have a wide safety margin, be well tolerated and have no adverse effect on growth rate and feed efficiency.

It must allow your broilers to grow to their full genetic potential.

It must help you to bring them to market weight sooner on less feed.

World-wide experience proves it – ARPOCOX does just that.

ARPOCOX shuttles – the way ahead

You can obtain more information on the ARPOCOX shuttle programme from

MSD AGVET
Division of Merck Sharp & Dohme Limited,
Division of MSD (Pty) Ltd,
Merck Sharp & Dohme Park,
Private Bag 3,
HALFWAY HOUSE
1685

*Registered Trademark Reg. No. G413 Act 96/1947
Start your chicks with the coccidiocide that coccidia have yet to conquer.

'NICRAZIN' has been on the market since 1955, but its reputation for outstanding anticoccidial action against all important coccidial species has survived the challenge of newer products. After all these years, more 'NICRAZIN' is used now than ever before. Why? For two good reasons — high efficacy and low cost.

New doesn't always mean better. Coccidial resistance studies over the last 10 years clearly show that 'NICRAZIN' still delivers highly effective anticoccidial performance — even against problem field strains resistant to other anticoccidials.

Its ability to suppress oocyst production leads to a residual or carry-over effect which delays coccidial development following product withdrawal. This outstanding feature explains why so many customers have used 'NICRAZIN' in their starter feeds with such good results.

Good doesn't have to be expensive. The most expensive anticoccidial programs are not necessarily the most effective. Industry reports now show that continuous use of one-product programs are accelerating the emergence of insensitive coccidia.

That's why producers all over the world are turning to shuttle programs. Shuttles using 'NICRAZIN' in the starter feed offer you true economy. In simplest terms, you save money because 'NICRAZIN' costs less and you can preserve the efficacy of your anticoccidial programs for years to come.


Nicrazin
THE GREAT DERATE

The chicken...or the egg?

**HISEX BROWN COMES FIRST EVERY TIME**

HISEX BROWN layers are now proving to more and more producers throughout South Africa that they can produce the same kind of results here locally as they have been consistently producing internationally for many years.

High egg numbers together with excellent feed conversions are just two reasons why more and more producers are insisting on their next flock being HISEX BROWN. After all, results count – and you can count on HISEX BROWN for the best results.

Tongaat Poultry

Tongaat Poultry (Pty) Ltd
Telephone: (032) 23199 - Telex 6-28743
C/O Post Office
Poultry Farm (Pty) Ltd
Phone: (0341) 25577; 25216
Box 292, KwaThema 9500
WHAT YOU FEED IS YOUR BUSINESS
HOW YOU SERVE IT IS OUR BUSINESS

MAXIMUM FEED SPACE FOR ADULTS

MINIMUM HEIGHT FOR DAY OLDS

- PMT - 14" Polypropylene or Galvanized, in 2 styles.
- DROP - Easily adjustable for all feeds & depths.
- GRILL - Heavy duty, design provides easy entry and exit for day old.
- POWER UNIT - Direct drive or belt drive.
- AUGER - Toughest available: 3/16".
- TUBE - Seamless, prevents twist and feed entrapment.

Cyclone INTERNATIONAL INC.
P.O. BOX 1017
BAYLEY 46TH STREET
HOLLAND, MICHIGAN 49423 U.S.A.
517-395-9981 MAI-224-398

WORLD LEADER IN POULTRY AND LIVESTOCK FEED SYSTEMS
REMOVAL OF GST ON BASIC FOOD PRODUCTS

It is probably suitable to record the poultry industry's appreciation for the removal of GST on basic foodstuffs in this column. At present all fresh eggs and also whole egg pulp need not pay GST (as from 1 July). Also on the list of exempted items are slaughtered poultry and raw poultry products. There is still some uncertainty regarding the exemption of GST on live culled and live broilers which is marketed in the black areas. Representatives have been made by the poultry association to the authorities, clearly stating that the only reason why these items are sold live to the end users (the lower income groups) is that these people do not have fridges. It is also a basic foodstuff and the removal of GST from live broilers and live culled will also benefit these lower income groups. This is one of the very few items which we know of that is sold live to the end user as food.

Be it as it may, it is a very strong and positive step on the part of the Government to make this distinction and waive GST from these products. It will, of course, put the Government in the position where they can upwardly increase the other GST without any real negative effect on the lower income groups. We do hope that this is not what is being planned. It, however, remains a positive step which will ensure that basic food will remain accessible to the lower income groups as well as other members of the South African population. Regarding the competitiveness of poultry products I cannot see that white meat will now in any way be in a better position as compared to red meat as the GST has also been taken off the sales of raw red meat. Eggs may have a marginal advantage when compared to breakfast foods but a 7% (or 10%) difference will not bring about any substantial change in buying patterns especially when the convenience factor is taken into account.

S A Poultry Bulletin — July 1984
Van Leer pulp egg packs—first choice for 20 years, and still unbeatable

Why? Because only the Van Leer Vue-pak® combines the producer/packer benefits of lowest cost and maximum product protection with the benefits that make it tops with housewives—Visibility they can see what they buy
Divisibility the convenience of buying in sizes as needed.
Absorbency prevents moisture build-up, inhibiting mould formation on eggs.

Now, Van Leer pass on to you the benefits of increased production efficiency and offer pulp packs at new lower prices!

YOU CAN'T BEAT PULP FOR PRICE — YOU CAN'T BEAT PULP FOR PROTECTION!

What's more — you can't beat Van Leer for service. Our technical experts are always available to help in any way you need.
When it comes to incubation systems, **CHICK MASTER**

**can make things happen**

1. 54-egg flat, best transportation flat for cage application or trucking buggy.  
2. Complete transportation system from breeder house through hatchery (our buggies fit automatic washers).  
3. Year after year maintenance-free operation.  
4. The most uncomplicated incubation system available.  
5. Efficient and on-time parts and service.  
7. Pioneered all fiberglass panels (no cheap substitutes.)  
8. Offering superior sanitation.  
9. Comprehensive design capabilities for new and old hatcheries.  
10. Close to half a century experience in building incubators.

**BONUS:** Back door option and many other innovations.

Chick Master Incubator Company

Spartan Cages (Pty) Ltd.  
P.O. Box 136, Halfway House 1685, Tel. , R.S.A.  
Tel. (Code 011) 805-2151 Ext. 805-3180/1  
Telex 4-22509
FROM HATCH...

TO DESPATCH!

COLUMBIT OFFERS YOU MORE!

Accurately controlled, reliable hatching systems offering high hatchability at low cost. Capacities range from 10,000 to 150,000.

COLUMBIT (PTY.) LTD.
Russell Churchyard, P.O. Box 2737 Cape Town 8000.
Reg Schütte, P.O. Box 25759 Denver 2027

STORK®
A complete range of sophisticated and yield conscious processing equipment.
EGGOCON TALKS — EIVOKONLESINGS

DIE MAKRO-EKONOMIESE VOORUITSIGTE IN DIE SUID-AFRIKAANSE EKONOMIE/ THE MACRO-ECONOMIC OUTLOOK FOR THE SOUTH AFRICAN ECONOMY

The Current Situation

The South African business cycle peaked in August 1981. After an initially mild downturn, it experienced one of the worst recessions during the last 50 years from about the middle of 1982 to the middle of 1983; and total growth as measured by the change in GDP declined in both years. This downturn was aggravated by the drought, exports declining as a result of the overseas recession and the fall in the gold price. Yet from the middle of 1983 clear signs of an upturn — however mild — emerged. The initial impetus for this upturn was the spurt in the gold price late in 1982 and early in 1983, which resulted in a sharp easing on the foreign markets with the prime overdraft rate of banks declining from 23 1/2 to 14 1/2%. These developments filtered through to the real economy; however, the gold price had already taken again to about 400 per fine ounce, with the result that there was no proper export base to sustain this upturn, and the current account moved into deficit again. Yet the upturn continued as a result of higher government spending as well as private consumption expenditure. The latter was primarily based on credit and is to a large extent the result of expectations about inflation.

In the big van-veral die tekort op die lopende rekening se as, die laaste kwartaal van 1983, oorale aan het, en die laer goudprijs, kon die beweer nie hierdie oplewing ondersteun nie en het hy gevrees, ‘n meer persevereende beeldstuurder, ingeneer. Hierdie bekledingsstandpunt skakels duidelik uit die jongste beugingsvloei-dia van die Minister van Finansies, waarin hy in verbetering in die betalingsbalans en die volgende besteding van syfakse as die belangrikste beleidsondersteunings uitgespor moet, en dan dié van ekonomiese groei verwys het.

Die algemene grondslag van die huidige ouderwetse toestand van die Suid-Afrikaanse ekonomie is dit moeilik om optimisties te wees oor die oplewing vir die rest van 1984. Die jongste regeringskasteling van die Buns vir Ekonomiese Onderzoek, die daardie daaraan dat die oplewing vir 1984 op die mees-geriewe van 1983 ‘n aanwalen gaan het, nie in die oorblyswende deel van 1984 voortgesit sal word nie. Ons is egter ook van mening dat, indien ons ons aanvoer ten opsigte van die herstel in die goudprijs vanaf die tweede helfde van 1984 (en ‘n wijk van ongeveer $450 bo die eindale van die jaar en ‘n wijk van $4500 in 1985) en die toenemende oplewing in Suid-Afrika se rede uiterwaardige gewes is, dit kan en dié van 1984 en 1985 bo die 1984-1986 gemiddelde net blykbaar. Met inskrywing van die ekonomiese aktiviteit van die moedel van 1985 verwag kan word.

Wat die detail van ons vooruitskattings vir 1984 en 1985 betref, wil ek hier net na enkele van die belangrikste groottredre oplewing. Eerstens ekonomiese groei. Ons verwag dat die Brutale Inlandse Produkt van 1984 met 2,7% en in 1985 met 6,0% sal toeneem. Aangesien die toename in 1984 missien te optimisties mag klink, moet die algemene grond van die donker persentasie wat ek hiermee geskryf het, moet ek daarop wys dat indien die verandering in voornede bate rekening gelaat word, die verwagte toename slegs 0,5% is.

Verder verwag ons dat die lopende rekening van die betalingsbalans vanaf die vierde kwartaal van 1984 ’n ontskot sal toon, en in 1985 ’n ontskot van meer as R2 000 miljoen, en ook wat die inlandske, en ook daaruit dat die inlandske (ruim gemee in die Verbruikerspyramidskaam) gemiddeld 9,9% sal wees, in 1984, maar van die eende van die jaar neers, weer begin styg.

Interest rates

Current interest rates are historically high in both nominal and real terms. This is the result of the premature upturn in the economy, the deficit on the current account and the authorities’ determination to curb inflation and bring the upturn to an end. Given our expectations that the gold price should recover — albeit slowly at first — from the second half of 1984 onwards, that the domestic economy will move into a recession again and that the current account should go in surplus in the fourth quarter of this year, interest rates should soften. We expect the prime overdraft rate to be about 17% at the end of 1984. The interest rates should continue to decline in 1985 but we expect them to remain positive in real terms not only in the latter year but for the years to come. This is quite a change from the position during the 10 years to the end of 1982 when real interest rates were negative and thus conducive to investment and acting as a disincentive to saving.

Arbeid

Die uitdaging van die Suid-Afrikaanse arbeidsopzet betref die verdeling, na die tekort aan geskoolde arbeid en die oorsprong aan ongeskoolde arbeid, word lans steeds onderwerp. Ten spye van die twee agtereenvolgende jare van negatiewe reële ekonomiese groei het 109% van die respondente na die jongste inligting van die B.S.O. aangedui dat hulle ’n tekort aan geskoolde arbeid waardeer. Aangesien slegs 81% van die respondente in die vierde kwartaal van 1983 aangedui het dat hulle ’n tekort aan geskoolde arbeid waarnem, het die jongste tydperk ’n refleksie van die matige oplewing in ekonomiese aktiviteit waarmee ek vroeër verwys het, en ’n aanduiding van probleme wat laterontstaan in hierdie verband toegespit word sodat daar weer ’n sterk oplewing in ekonomiese activiteit is. In sterk kontras met die tekort aan geskoolde arbeid slegs 5% van die respondente van die jongste inligtingsopeina aangedui dat hulle ’n tekort aan ongeskoolde arbeid waarnem.

Verder verwag ons dat die oplewing in 1984 nie rooikleur nie. Na hulle (geskatte) afname van 1,3% in inligtingsopeina in die landbou in 1983 verwag hulle ’n verder afname van 0,2% in 1984. In 1985, in reaksie op die sterk toename in ekonomiese activiteit, behou inligtingsopeina met ongeveer 1,7% toe te neem.

Wat tonie en salarisse betref, het die jaar, met die algemene salarissapassing van 1,2% in Januarie en die voorslaag van beroepsdriewagting, ’n voorbeeld van groot aangroei in 1984 gestel. As gevolg van die algemene swak-economiese toestand in 1984, die gevolgslike druk op die winste van maatskappye en die daling in die inlandske, voorsien hulle dit egter nie dat ander werkgevers in staat sal wees om die jaar te korrek 1984 reeds te volg nie. Gevolglik voorsien ons aanvanklik laer toename in die salarisse en tone van nie-staatsbedrywe slegs 10% in 1984. En 1985 behou die privaat-sektor egter in staat te wees om groter salarissapassings toe te staan, en ons verwag dat die gemiddelde vergoeding per werknemer met ongeveer 14% sal toeneem (tegenoor die 12,6% in 1984).

(Vervolg op bl. 301)
It's a fact that Meadow produces more poultry feed than any other manufacturer in South Africa. Meadow has earned a reputation for quality, consistency, service and performance. They call us the professionals in poultry feeding, because over 50% of all poultry feeds come from Meadow.
Verwagte veranderings in die rooivleismark

Dit sou bepalende wees om te wil voorsien dat in manne- en ander werfso omvangryk soort hierdie in 'n kweejaar van 15 minute behoorlik kan bereken. Ek sien hierdie bydrae dus eerder as 'n poging om na aanleiding van die kenmerke van die vleisbedryf en die mark, soosook moontlike struktuurverandering in 'n die landbou as geheel, gedagtes te probeer stimu-

SOME PERSPECTIVE ON SUPPLY AND DEMAND:

Market forces

Despite claims to the contrary, the price of red meat in this country is determined by virtually pure market forces, especially over the medium and long term.

Factors influencing meat prices

As is the case with most agricultural and other commodities, the following are the main factors influencing meat prices:

- The total demand for meat

  Which is in turn dependent upon:

  (a) Disposable income within the economy and the rate at which it is increasing or decreasing.

  (b) The income-elasticity of the demand, which is on average 0.73, but varies between 0.48 for whites, 0.69 for Asians, and 0.76 for coloureds and 1.19 for blacks, thus indicating great sensitivity for growth in the real G.N.P.

  (c) As blacks already consume more than 50% of the red meat and show the fastest population growth, the market is getting more price sensitive and more volatile as the economy swings up and down.

  (d) Although per capita consumption is decreasing gradually, population growth (again subject to economic growth) has a positive influence on total demand.

  (e) Changes in consumer preference due to education, for health reasons, marketing and advertising, has a major influence over the longer term.

  (f) Even some seasonal demand factors are present.

  "The total supply of meat"

Which is in turn dependant upon:

(a) The various contributions of beef, mutton, pork and chicken meat.

(b) Stock numbers, which change slowly both as a whole and in their composition but which in the case of cattle are presently at the lowest level for about 10 years.

(c) Seasonal rainfall, which has an influence both directly, due to the availability of pasture and feed, and indirectly, through its influence on the broad financial position of farmers.

(d) The cash flow position of farmers, which is especially volatile in the grain producing areas due to a swing between bumper crops and crop failures.

(e) Imports and exports, together with the trading of Meat Board stocks.

(f) Due to the link between private and especially cattle and sheep production, seasonal variation in both quantity and quality occurs.

Inflation

Although very difficult to define as a factor in its own right, my feeling is that it has a marked influence on the price that is determined over time.

Die aard van die bedryfstak

Die produusent se opinie is vanweë ongewag van groei, reënval, temperatuur en die marksekte nie onbeperk nie. In die gestresse Boerderygebied is die situasie egter meer buitewaardig.

Relatiese pryse

Oor die lang termyn is hierdie die maats bepa-

Tegnologiese vooruitgang (navorsing en voorligting)

Wanneer vordering in 'n bedryfstak vinniger is as die in ander (bv. die netelige vorderings deur blomme en meisieblom), werk dit struktuurverandering in die hand.

Die aard van die bedryfstak

Die produusent se opinie is vanweë ongewag van groei, reënval, temperatuur en die marksekte nie onbeperk nie. In die gestresse Boerderygebied is die situasie egter meer buitewaardig.

Statistiese bemerkingsaanvoer en die invloed op prysverhou-

Statistiese aanvoer en die invloed op prysverhoudings kan statistiese opbrengte 'n invloed hê op produusstruktuur.
Day old Ross 1 broiler chickens of superior quality.

Sanders Hatchery

Rock Poultry Farm
P.O. Box 49 Hekpoort 2800
Tel: 01502—47
Inquiries 011—672 3577

What's behind the growing success of Cobb.

The Cobb performance figures are not theoretical targets — but based on actual results from large scale independent and integrated units. Cobb are encouraged by individual performances well in excess of these figures, reflecting the continuing progress in improving genetic potential through our research programme.

On the broiler side a crop of 10,000 birds produced a liveweight of 2.37 kg. (5.23 lb.) at 51.7 days with a feed conversion of 2.08 : 1 and viability of 97.38%.

This level of overall performance, together with the outstanding conformation and high meat yield of the final product, has led to the growing success of Cobb.

WE AT ORA ET LABORA HAVE THE INFRASTRUCTURE, CAPACITY AND KNOW-HOW TO SUPPLY AND SERVICE THE COBB’S WE SELL. CONTACT KOOS KOOY, IT COULD BE THE MOST PROFITABLE CALL YOU HAVE EVER MADE.

<table>
<thead>
<tr>
<th>Broiler Performance</th>
<th>Weight for Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Mango</td>
</tr>
<tr>
<td>36</td>
<td>1.42</td>
</tr>
<tr>
<td>40</td>
<td>1.70</td>
</tr>
<tr>
<td>45</td>
<td>2.15</td>
</tr>
<tr>
<td>50</td>
<td>2.25</td>
</tr>
<tr>
<td>60</td>
<td>3.87</td>
</tr>
<tr>
<td>75</td>
<td>5.06</td>
</tr>
</tbody>
</table>

These performance objectives are based on many actual flock results obtained under good environmental and management conditions.

Ora-Et-Labora,
Telephone 01411-25577/25216, P.O. Box 282, KROONSTAD
9500.
Propaganda en reclame

Vanwege de onzekerheid bij producenten, aanzienlijk onkunde (verband g.e. gebrek aan verkoopsmedia) en de onwettelijke onvermoei in bedrijfswaarde (tegenen overheid), kan re- 
clame en propaganda verhaal oor de kort en medium termijn beperking behoeft. voor

Oorlogsbehoeft (strategische en sozial-
politieke overwegingen)

'n Fiksk wat eentlik blus die landbou staan, maar wat veral in die RSA (vanwege bevolkings-
verandering, die onmoeing van die eerste en derde wereld, en die ekonomiese systeem, Zuid-Afrika as reëlike rikdom en die konfrontasie met Kom- 
munism), let tot besluite oor oorlogsbehoeft-
verandering, die aanwending van staalbonde en bevoegde korenmot. wat direkte invloede op de voorgenemende factoren en dus op die landbou uitval. 

Moontlike rigtingwyse en gevolgtrekkinge:

Moontlike strukturerenonding in die akkerboubedryf en die wisselwerk daar-
van met diereproduksie

Indien moontlike cases en 'n tweeprysstelsel 'n werkelikheid word, kan een of meer van die vol-
genade scenarios 'n werkelikheid word. Vanweer meer doeltreffende moontlike produksie (uitop- 
ning van marginaal gronde) kan relatief goedkoper misies (met markverwante pryse) as inras vir diereproduksie beskikbaar kom. Dit kan relatief goedkoper diereproduksie en dus relatief hoër bruto tot gevolg hé. Op balans dus 'n meer stabiele en gesonde land-
beleid in die akkerbougebied, of

Dit kan le tot relatief duurder misies op die bevolkingsbeheer met 'n laer aanwending vir diereproduksie (veral intensiewe vleis en vleis produsente, éens, vanweer ellenhoo 
rende bedryf in voederstof) Dit kan verder le tot 'n hoe 
produksie en aanwending van ander gronde (valse zorghu and olis) en/of meer diereproduksie van vleis en aangepaste wer-
lings en/of meer vertakte integratie van misies en diereproduksie op selfsde plaas of fyn vermoortelpaas.

Indien pryse verander tussen vleis en ander misies in jare met normale of bo-normale beste 
Rooi van 100 per ton of meer beloop, kan die onmoeing van kwestierings, asook die kost-
voordeel van die misiesboer wat selv vleis-
me diereproduksie, en net implikasie inhe. Dit kan selfs verdeler in marginal akkerbou-
gebiede aanhoud vir misies wat gebruik bo minder. 

Die uitlatting van subsidies op die binne-
landse bemarringskoste van misies, kan 'n permanente kostvoordeel aan dierepro-
duksie met die "nie" misiesproduksie inhe. 

Die produksie (en moontlike onderrig-
ligging) aanwending van marginaal akkerbou-
gronde vir die vestiging van aangepaste wer-
lings kan die koststructuur van vleisprodu-
sie selet verhoog en individuele boere in die-
selke of swakere ekonomiese posisie as huidig

The market situation for meat in the near future

Present indicators indicate that the total supply of red meat for 1984 should be virtually the same as that for 1983, if it is assumed that more than 100 000 cattle carcasses will be sold from meat Board stocks.

At production level however, only a continu-
ation of widespread drought could prevent a drop in supplies towards the end of this year. Due to the recession at consumer level, prices could move sideways for sometime to come. Should predictions of an upswing in the econ-
omy become reality this year, problems and shortages caused by drought, price moves and uncertainty in the production and marketing sector may not have been solved by then.

Increased efficiency in production and marketing

In the final analysis, this is the only reliable in-
strument available to all involved.

For the past two decades, the emphasis in agriculture, and especially in crop production, has largely been on increasing volume of pro-
duction per unit, circumstances in the market-
place are now dictating a shift towards lower cost per unit produced.

At the same time it is of utmost impor-
tance, that through the improvement of market-
ning structures, efficiency in marketing will not be neglected.

The honorary presidency for 1984/1985 was presented to Mr Wim G Yamans by the Chair-
man of the South African Poultry Association Mr J.W. Bartlett. In making the presentation Mr Bart-
lett said:

Wim G Yamans practiced as a Chemical En-
gineer since 1934. For the first 14 years in Hol-
land and subsequently for 6 years in South Af-
rica, after which he started off as a small poul-
ty farmer in 1956.

The G Yamans organisation grew to the extent that it is now one of the top multiplier breeder organisations, supplying different strains of broiler day-old chickens to the industry.

(Award to page 305)
THE MODERN WAY
To cage layers

Fully Automatic QuadDeck System

With the QuadDeck System you can double or triple your capacity without increasing building size.

Features:
- Automatic Feeder — Amount of feed adjustable for each individual deck — heavy duty gear boxes — parts within easy reach for service.
- Feed Conveyor Assembly — case hardened drive and idler sprockets.
- Heavy Duty Feeder Chain — for years of trouble free service.
- Special tray guides plastic egg belt in front of cage floors.
- Exclusive “Egg Saver” enables the operator to control the flow of eggs from cage to belt, it is automatic and timer operated.
- Automatic iWatering System — water flows from central tanks to the exclusive Nipple Drinker. The Nipple Drinker with special plastic cup, greatly reduces moisture in droppings, cutting down on ammonia fumes. Made from quality stainless steel.
- Automatic Egg Collection — egg belt out of reach of the birds, thin and soft shell eggs are automatically removed.
- Egg Cross Conveyor Elevator — all one unit, no transfer from belt to belt, eggs are cradled between plastic rods, no collision. Continuous roller chain — no belt slippage. Open design — foreign matter drops below conveyor — large capacity 41 cms wide.
- Automatic manure removal. Operates on time controlled schedule.

Energy saving QuadDeck design and construction provides maximum capacity and profits

Advantages:
- More layers per square meter of building space than any other system.
- Lower maximum cage height (2m, max. height, 1.4m max. width) — is lower than most 3 deck systems.
- Easy installation in existing buildings — no costly conversion or remodeling.
- No special floor or pit construction.
- Higher bird concentration offers comfortable, energy saving temperature during cold season.
- Summer ventilation made easier with lack of ammonia and other fumes.
- Automatic manure removal system provides odour free environment, healthier birds, and healthier, more pleasant working conditions.
- Energy savings with automatic feeding, egg conveying and manure removal requiring only 4 fractional horsepower motors per row.

Write or call: Graham’s Imports & Exports (Pty) Ltd.
P.O. Box 250, Benoni 1500, Transvaal. Phone: (011) 966-2216, 93-9639. Telex: 4-20967
The Ultimate Cage Systems...
Mr Rudy Frankel was made honorary life member of SAPA at the recent Congress. In motivating the resolution FW Banet said the following: Mr Rudy Frankel retires from full time active service in September 1984 when he becomes life president of Tiger oats. He is regarded as the mover of the Grain Trade and Allied Industries with 54 years of involvement in these activities. He relinquished his law studies on the death of his father in 1950 to take over the helm of a small produce concern known as Jacob Frankel.

After serving in the Second World War he founded Tiger Oats and National Milling Co in 1944 with the financial assistance of Mr Ernest Oppenheimer and the Anglo American Group. The company is presently merged with Barlow Rand since 1982.

His involvement with SAPA was the consequence of an appeal for financial assistance for SAPA in 1950 from Niki — a Natal Poultry Farmer and owner of Claire's manufacturers of layer cages and batteries. This financial assistance continued for many years.

He provided this line, which enabled the SAPA secretary to remain financially viable until this dynamic industry matured and was able to fund its own administrative costs. He was also present at the first Meat Bankruptcy twenty-three years ago at the Edward Hotel in Durban and treasures the long and continuing association with SAPA, which grew with the increasing support by SAPA members of the Meadow Feeds Group of Companies.

Also at the Congress of 1971, Robert James and I moved that the Government should allow the legal importation of breeding stock from overseas. Some breeder strains which were available overseas were far superior to what we had in this country.

In 1979 regulations for the importation of poultry breeding stock were promulgated. It didn't take long. In fact, it was February 1980, when at a rather stormy meeting great dissatisfaction was voiced with these Regulations by a large number of poultry men. This issue culminated in an equally stormy annual general meeting of the Breeders Organisation in May 1980, when it was decided that the regulations required a number of changes.

At that meeting I described the significance of the Breeders Organisation and the role it should play in the framework of the SA Poultry Association and on the question of regulations. I urged for stronger and immediate action.

At the conclusion of that meeting I was asked to become Chairman. I accepted and set about making sure that I accepted the challenge, not only to get the import regulations amended, but to get the Breeders Organisation to fulfil its role in the activities of SAPA.
AVIAN INFLUENZA

DR A J MORLEY — RAINBOW CHICKEN FARMS (PTY) LIMITED

Avian influenza (AI) has been a serious problem during the past year in Pennsylvania, U.S.A. This paper briefly describes the disease, the American experience and possible steps of local relevance.

AI is a highly contagious disease of poultry which exhibits varying degrees of symptoms and mortality, and is caused by orthomyxoviruses. This group of viruses causes influenza in man, equines, swine and a wide range of avian species and a close relationship exists between all strains of the virus group.

In poultry the disease may range from inapparent with no symptoms and no mortality, to severe in ranges of symptoms with up to 100% mortality. The most common signs are respiratory disorders (coughing, sneezing, difficult breathing, sneezing, watery eyes), digestive disturbances (vomiting, diarrhea and weight loss) and nervous involvement (depression and convulsions). Incoordination, in adults, is usually mild to severe loss of egg production.

Post-mortem, caecoes will generally reveal inflammatory, degenerative or necrotic changes in various organs especially in the respiratory, digestive and reproductive tracts. As with the live bird, these post-mortem lesions vary considerably in severity and distribution.

It will be appreciated that the above merely describes symptoms which can be associated with many poultry diseases, particularly Newcastle Disease and Infectious Bronchitis. Thus it is essential to perform virus isolation, virus typing and serology to arrive at an accurate diagnosis. More must therefore be said about the virus.

The influenza or orthomyxoviruses are divided into 3 antigenically distinct types, namely Type A, Type B, and Type C influenza. Type A has occurred in man, equine, swine and avian species, while Types B and C only occur in man. The virus also possesses two significant glycoproteins on the virus surface which are referred to as Haemagglutinin or H antigen (due to the ability of the virus to agglutinate red blood cells) and Neuraminidase or N antigen. The H and N antigens vary from virus to virus and so of 1985 the World Health Organisation has identified 12 different H antigens and 9 different N antigens. As each virus possesses both H and N antigens, it becomes possible to identify or code each subtype of influenza virus according to its H and N configuration. So for example one finds influenza Type A subtype H1N2 or subtype H8N2 or subtype H5N2 in the recent outbreak in Pennsylvania. Theoretically there could be 12 x 9 = 108 different subtypes of influenza.

Also the virus is unique in possessing recombiant genetics so that in infection with mixed subtypes of influenza viruses, during the multiplication of these viruses in the host cells, new H + N combinations could emerge, and the infectivity (or antigenicity) of each subtype can change. This partly explains the wide variation in symptoms and severity of the disease.

It should be obvious by now that it really is not possible to diagnose AI without resorting to detailed virological and serological procedures. This involves the isolation of the virus in embryonating eggs, differentiating it from two other important haemagglutinating viruses, namely Newcastle Disease and ED-76 by haemagglutination inhibition (AI) and gel diffusion tests and subtyping the virus by H1 and Neuraminidase inhibition (NI) tests. This could be performed within 2 weeks.

Diagnosis is further confirmed by taking serum samples from affected flocks during and 3 – 4 weeks after an outbreak and, using the HI test, demonstrating a significant rise in antibodies (immune response) to the relevant HN subtype of influenza.

In practical terms this would mean that in an suspected outbreak of Al, the flock would have to be placed under total quarantine for the duration of the diagnostic procedures.

Experience in Europe and North America has shown that AI is transmitted principally by respiratory droplets, both mechanically and as an active infection of such birds, while wild birds, rodents, vehicles and equipment are responsible for mechanical transmission of the disease from farm to farm within an area. This was demonstrated in an AI epidemic which occurred in turkeys in Minnesota in 1980. Infected birds can shed the virus for about 3 weeks following contact. In American situation, these migratory birds spend the summer months in Canada and the northern states of the U.S.A. and the colder months are spent in the southern states, the Caribbean islands, Central America and northern areas of South America. Thus the time taken in the northward migration is relatively short and within the period of virus shedding.

In the South African context, our migratory birds which include certain sea birds, birds of prey, waders, ducks and swans fly mainly from Europe, and the time taken for migratory birds is generally less than the virus shedding time. Thus it is extremely unlikely that the virus would survive long enough on migrating birds. However, the only recorded case of AI in South Africa, which killed flocks off the Cape coast in 1961, demonstrated that long range transmission is possible.

The rise of mechanical transmission by persons travelling overseas is of far greater significance and any person returning from overseas travel should not have contact with local poultry without at least taking a thorough bath and changing clothes. There is a similar risk associated with the importation of avian species into South Africa from affected areas. For this reason any such importation has to be accompanied by a veterinary certificate issued by the exporting country’s State Veterinary Authority which declares (a.) that no AI has occurred in the area of origin during the preceding 12 months, the imported stock is kept in quarantine for 3 months to evaluate this claim, and any imported birds showing AI would be slaughtered upon detection.

Vertical transmission of Al via the eggs of infected hens to day-old chicks is extremely unlikely to occur.

Like most virus diseases, treatment of affected birds is of no value — antibiotics are only effective against bacteria, not viruses. Vaccination has not been practical because, of the multitude of subtypes, each is antigenically distinct and there is no cross-protection between subtypes. Killed vaccines have been used in single subtype infections but these have not gained widespread acceptance. Thus the only alternative effective control measure is to depopulate affected flocks, place the whole area under quarantine and stop all movement of poultry in and from such an area until 1-3 months after the last outbreak.

A good review of the recent AI break in Pennsylvania by Robert Eckroade was published in the January 1984 issue of “Poultry Digest”, while some of the political implications were given by Jon Schmid in the January 30 issue of “Feedstuffs”. No doubt more articles will follow in the wake of this disease. Two important issues emerge, firstly that AI can be a very costly disease to the industry, and secondly that an earlier decision to slaughter out affected flocks or to permit vaccination using the appropriate subtype may have prevented or minimised the spread of the disease and hence saved millions of dollars.

Finally, the foregoing must be translated to local relevance — what do we do? This can be summarised as follows: Firstly, AI is not known to be prevalent in South Africa, but vigilance should be maintained regarding the incidence of AI elsewhere in the world, with reference to overseas travel and to the importation of all avian species. Secondly, all important avian species should be monitored serologically (during quarantine), and birds showing evidence of infection should be destroyed. Thirdly, in the event of an outbreak occurring, a cooperative community spirit will be needed as a suspect area is placed under quarantine pending diagnosis of samples. Fourthly, a policy of slaughter-out of affected flocks and ring vaccination of neighbouring flocks with the correct subtype should be instituted at the earliest possible time. Repopulation should not continue until an affected area has been declared free as determined by virus and serum sampling.

If for some reason AI should occur in local poultry, the Division of Veterinary Services would order an immediate slaughter of all affected flocks and impose a strict quarantine on the affected area. Authority to make such a decision is vested in the Director of Veterinary Services in terms of the Animal Diseases and Parasites Act, 1968.
Detekto Internasionaal (Edms) Beperk

VIR 'N VINNIGE, ONAFHANKLIKE,
BETROUBARE EN VOLLEDIGE
VOER-ONTLEDINGSDIENS PLUS
BYSTANDVOEDINGSADVIES

KONTAK DETEKTO ONMIDDELLIK
TEL: (011) 803-3553
POSBUS 1247, RIVONIA 2128

OKADA SOLAR
POULTRY AND LIVESTOCK
MANURE DRYERS
Save Time & Earn Money

- No Fossil Fuel required.
- No Carbon Material or Chemicals to add.
- Drying process not affected by weather or climate.
- No drying labour required, fully automatic operation — silent.
- End product is a high quality organic fertilizer, odourless and clean.
- Available in a variety of sizes to meet the daily manure output from any farm, large or small.

Write or call: Graham's Imports & Exports (Pty) Ltd.
P.O. Box 250, Benoni 1500. Tel: (011) 968-2216, 53-6839. Telex: 4-30967
CHAIRMAN'S REVIEW S.A.
ASSOCIATION OF EGG PACKERS

REVIEW OF INDUSTRY FOR 1983

After a four-year period of sustained growth in egg consumption, 1983 proved to be a most disappointing year. Consumption actually decreased in the year ending June 1983 by 1.1% compared to the previous year. The Transvaal and Western Cape showed a very modest increase in consumption but the Natal and Eastern Cape areas reflected decreases in consumption. Since there is still a certain amount of inter-regional trading, no significance can be read into the figures for each of the regions concerned. The national trend in consumption was, however, clear.

Production on the other hand was substantially up on the previous year. All regions reflected an increase in production but the major contributor was the Transvaal/O.F.S., where production increased by 144,000 cases, compared to a consumption increase of only 13,000 cases. This gave rise to an increase in the surplus from 214,000 cases in 1982, to 448,000 cases in 1983.

The export market place remained reasonably stable despite the significant increase in surpluses. The major exception was, of course, the Transvaal/O.F.S., where prices declined as a result of the substantial surplus. The first drop in price in this area occurred in January, and endured for approximately four weeks. After a reasonably stable winter period, prices were again reduced in August and then further in October. Despite a fairly healthy demand in December, prices continued to be depressed right through to the end of 1983.

Despite the marginal increases in surpluses in the other areas, the co-operation of producers ensured price stability throughout the year. The producers and packers in these areas were consequently able to record a reasonably profitable year.

PRODUCTION CONTROL

Much discussion has taken place over the past year on consolidation of the legislation affecting the egg industry. In essence the objective that the industry would like to achieve is to have the surplus removal scheme and production control administered by the same people under the same legislation. Part of the legislation aimed for is to bring about more effective punitive measures and so eliminate one of the main weaknesses of the production control system which we currently have.

Unfortunately the inertia of the bureaucracy turns very, very slowly and it will be many years before any meaningful change is achieved. Regrettably we do not have the time to wait for these changes. The industry is changing so rapidly in terms of the consolidation of permits that we will soon see fewer than 200 bona fide egg producers. From June 1982 to June 1983, the number of producers dropped from 332 to 279. Contrary to popular belief, the acquirers of these permits have been the medium to large independent producers, and not the so-called lead companies.

Ironically it is the smaller producer (for whom the protection afforded under production control was designed) who is selling his permits. The permits which are issued by the General Manager of the Egg Control Board for no-charge are changing hands at exorbitantly high prices. These sorts must ultimately find their way into the final price to the consumer. In essence therefore it would appear that production control has become a means of protecting the inefficient from the efficient producer at the expense of the consumer.

When the production control legislation was re-introduced in 1978, the then Minister of Agriculture described it as "a crisis measure to deal with a crisis situation." That crisis situation has long passed. The inactivity of the Department and the Minister on issues designed by the industry to improve production control makes one wonder whether it is not the intention of the authorities to discontinue production control in the near future. Morally the industry could not defend production control as being in the interest of the consumer.

EXECUTIVE COMMITTEE

The more important issues covered by your executive during the past year are dealt with under the following separate headings:

1. Advertising and Promotion Campaign

The Generic campaign which is funded out of the levies paid to the Egg Control Board, continued on a more respectable budget during the last year. The major thrust of the campaign has been aimed at blacks where a greater potential for increasing consumption appears to exist.

2. Floor Price

The Egg Control Board's policy of buying in a reasonable surplus at a market related price was well received by the industry. Excess surpluses are purchased at a much lower realisation which forces the industry to take corrective action much sooner than was previously the case. Further refinements are currently being considered and it is possible that the surplus quotas for the year ending June 1985 will be adjusted to allow for a certain amount of forward rolling of surplus quotas within a region.

3. Levy

The present levy of 3c per dozen will soon have to be increased. The only alternative to an increase in the levy would be to reduce the surplus quotas that the Board will purchase in a given period. Your executive supports an increase in the levy rather than to see a reduction in the first level of surplus quota.

4. Egg Products

The very poor realisation of sales on the export market has forced the Egg Control Board to look elsewhere to improve their realisation and thereby minimize their losses. Consideration is being given to selling egg products on the local market. In essence the Board will only purchase those markets that are not currently serviced by producers and packers. The Board will adopt a pragmatic approach to this market and it is unlikely that any of our members will be significantly affected by the Board's trading activities.

Unfortunately we cannot report any progress on the subject of the egg-product regulations. We were informed that the current delay is due to pressure of work at the offices of the Department's legal advisors. The draft regulations are scheduled to be dealt with by the legal advisor in the third quarter of 1984. We hope that we will be able to report some progress in 1985, in the meantime your executive will continue to pursue this issue.

5. Cost Survey

Our auditors have been instructed to undertake a cost survey on behalf of your association. Members have been approached for information with regard to their costs of packaging, grading and distribution of eggs. It is hoped that this survey will be complete by the end of May and that the auditors' reports thereon will be available to members who participate in the survey, by the end of June 1984. Along with the Board's survey of production costs, the intention is that we will be able to produce a cost model including the costs of distribution to establish a fair basis for pricing in future.

6. Membership Matters

Voting rights of members were changed during the past year. Quite simply the larger producers will in future have two votes as opposed to one vote only for smaller producers. Similarly the subscription of members has been changed to R100.00 and R50.00 for large and small members respectively. No subscriptions were charged to members during 1983 due to the healthy state of your association's funds. These matters were all resolved by your executive in:

(To page 311)
A sneeze from a chicken can strike fear into the heart of an industry. That’s the measure of the M.G. threat. But Elanco has the solution. By preventing M.G., TYLAN SOLUBLE will improve feed efficiency and bird mass — and therefore productivity. Backed by a massive local and international involvement in research, Elanco provides the weapons to fight disease and increase productivity in South Africa’s poultry industry.

A division of Eli Lilly (SA) (Pty) Ltd. P.O. Box 98, Isando, 1600. Tel: 974-7254

NOW AVAILABLE FREESALE

The early bird gets the germ.
line with the instruction given to them at the last Annual General Meeting.

PROSPECTS FOR 1984

Although egg consumption failed to increase during 1983, I do believe that members need not become despondent. We must, however, accept that the economic recession affects our industry as well as other industries within our economy.

The drought undoubtedly played a major role in the recession that we are presently experiencing. Unfortunately the summer grain areas were once again affected by a critical drought. For this reason we cannot anticipate an increase in consumption until after 1984. As a major source of protein of good quality and value, eggs can, nevertheless, expect to maintain their current consumption rate.

We have seen over the last few years, a slight improvement every year over the previous year, in egg production. Further gains albeit very modest can be expected again in 1984. Without an increase in consumption we should be prepared for a slight decrease in our surplus.

Those areas that operate effective pools will no doubt be able to tailor their production to suit their consumption patterns. Since the Transvaal O.P.S. region does not have this facility, the anticipated surplus is most likely to put pressure on wholesale prices. A decrease in prices is therefore expected in this region in the spring months.

The cost to the industry in the Transvaal O.P.S. of the lower prices last year was in excess of four million rands. There is no good reason to expect that the surpluses in the spring months later this year will cost the industry anything less.

---

BEWARE OF THE PITFALLS OF OFF-SHORE FINANCING!

Spartan Cages (Pty) Limited's first year of financing off-shore agricultural processing projects has been a great success.

This emerged in an interview recently with Mr. Martin Krantz, Spartan Cages' co-managing director. The Halfway House-based company was the first specialist agricultural equipment supply and engineering company to offer poultry producers and other agriculturalists off-shore finance for agricultural projects.

Since launching this service to the agricultural sector, he added, other companies have followed Spartan Cages' initiative and are also offering off-shore financing packages.

However, he stressed, South African poultry producers considering developing projects with off-shore finance must realise that this facility also has major pitfalls.

"The present interest rates of European trading partners are much lower — about 3.5 to 11 percent compared with our 21 percent prime.

"Therefore, taking off-shore finance sounds good on the surface, but to cover against currency fluctuations one must take forward cover insurance.

"Once having taken this insurance, one's effective interest increases to about 19.5 percent which takes you close to the prime South African interest rate," said Mr. Krantz.

Citing some recent examples in which agriculturalists received off-shore financing with an interest rate of 8.5 percent over six months, he said they made a net loss, ultimately, of about 5 percent compared with local borrowing because they had to contend with an adverse currency movement of about 11 percent over six months.
THE CHICKEN?

THEY BOTH COME

Producing chicken feed is chicken feed. Producing good, nourishing chicken feed is more difficult, requiring extensive experience and technical expertise.

P.O. Box 12, Boff
OR THE EGG?

FIRST WITH DELKOS.

Which is exactly what Delkos offers you: simply the best feed at the best price, to increase your egg output and the production of your broilers.

2271 Tel 0157-9611

SIMPLY THE BEST FEED AT THE BEST PRICE.
SUNDEW MORTALITY PIT COVERS
FOR CARCASS DISPOSAL PITS
The No-Disease, No-Odour Waste Disposal System

The Sundew mortality pit cover enables farmers to dispose of carcasses quickly, simply and hygienically. Its low cost and low maintenance are added perks. Set on a concrete slab over the disposal pit, this durable, translucent fibre-glass dome incorporates a combined flytrap/air vent, an observation window and a self-sealing flap valve.

The system harnesses nature in the form of solar heat and fresh air, assisted by Sundewzyme natural enzymes. Sundewzyme is a blend of harmless micro-organisms boosted with active enzymes which liquify and deodorise faecal and fat, rapidly speeding up the biological decomposition process. (Sundewzyme also deals effectively with faeces and manure in lagoons, pits, drains and septic tanks. Prevents blockage in drains, French drains and grease-traps.)

DISPOSE OF YOUR CARCASSES AT LESS THAN 3 CENTS PER KG OF WET FLESH.
CONTACT US NOW.

SUNDEW PRODUCTS
a division of Omnia Products (Pty) Ltd
42 48480, Roosevelt Park, 2129.
(011) 793-1368/9

STERILISED POULTRY LITTER

Registration No VB676 (Act 36/1947)

Composition:
- Crude protein - Min 240g/kg
- Phosphorus - Min 15g/kg
- Calcium - Max 35g/kg
- Fibre - Max 150g/kg
- TDN - 65%

- Excellent protein supplement for ruminants
- Valuable source of fibre
- Feed formulas will be prepared for you on request to ensure the ideal balance of feed for your stock
- Very competitively priced
- Qualifies for drought subsidy

It is available f.o.r. Daggafontein (Springs) or collection and road delivery ex Springs factory

Waste-tech
RECYCLING DIVISION

For further information please contact Dr. PD Scott or Mr JH Polglaser at (011) 818-5941/2/3
GUIDE TO EXAMINATION OF POULTRY

Dr. J R Mitchell Faculty of Veterinary Science, Medical University of Southern Africa Medunsa.

1. Clinical signs of health and disease
2. Estimation of age
3. Judgement of freshness
4. Post mortem examination
5. Interpretation of postmortem findings
6. Main diagnostic features of various poultry diseases

CLINICAL SIGN OF HEALTH AND DISEASE

This is the examination of live birds in their normal surroundings.

1. Firstly, we consider the birds on a total-flock basis, particularly:

   a. The Normal Flock
   Characteristics to consider are:
   Movement within the flock.

   b. The Environment
   Here, too, we consider what is normal and what is abnormal in the environment.

2. Having examined the flock and its environment, we can consider the individual bird

   Normal behaviour — eating, drinking, preening, resting,
   Normal size — well grown for age, or stunted.

3.1 Abnormal Signs

   a. Respirotory
      Coughing, sneezing, rates, gasping, gasping, head shaking, swollen eyes, nasal discharge.

   b. Nervous
      Crooked toes, enlarged hocks, tremors, ataxia, falling, recumbency, paralysis, circling, epilepsy.

   c. locomotor
      Feathering scanty, mutilated, fowl in the body.

   d. Droppings
      Intestinal consistency, bloody, white, green, Caecal consistency, colour, frthy.

3.2 Stress

   Many organisms, bacteria and viruses with a potential for causing infectious diseases lie dormant in the body of birds without causing any apparent symptoms of disease. These infectious agents, however, invoke the tissues of the body when the resistance of the host is lowered due to internal or external stress factors. The "stress" associated with rearing of poultry can be caused by one or a combination of the following:

   a. Feeding
      Moving (not to unit etc)
      Vaccination
      Weather
      Temporary lack of feed and water
      Overheating or chilling
      Changes in feed or feeding method
      Overcrowding
      Poor nutrition
      Parasitism external or internal
      Certain drugs or treatment
      Handling
      Lighting

   b. The Abnormal Flock
   Here we consider the same characteristics and abnormalities within group under the same headings.
   - Movement — Lack of movement, possible locomotory disturbance.
   - Grouping — Huddling.
   - Size and Uniformity — Birds uneven in size.
   - Size uneven in feathering.
   - Sounds — Coughing, sneezing, rates, gasping, gasping — noisy.
   - Flock indicates discomfort.
   - Smell — Particularly foul, diarrhoeic smell.
ESTIMATION OF AGE

<table>
<thead>
<tr>
<th>Part or organ</th>
<th>Young bird</th>
<th>Mature — ld bird</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feet</td>
<td>pliable, smooth, blizen-</td>
<td>tough, horny,</td>
</tr>
<tr>
<td></td>
<td>ting</td>
<td>often scarred</td>
</tr>
<tr>
<td></td>
<td>sharp, delicate short</td>
<td>stiff, sometimes</td>
</tr>
<tr>
<td></td>
<td>easily broken</td>
<td>claw missing</td>
</tr>
<tr>
<td></td>
<td>smooth skin, no scales</td>
<td>rough, scaly</td>
</tr>
<tr>
<td></td>
<td>spurs just developing</td>
<td>long spurs, dark</td>
</tr>
<tr>
<td></td>
<td></td>
<td>colours</td>
</tr>
<tr>
<td>Plumage</td>
<td>feathers not fully</td>
<td>full plumage,</td>
</tr>
<tr>
<td></td>
<td>developed</td>
<td>balding</td>
</tr>
<tr>
<td>Wattle and comb</td>
<td>thin, smooth, not well</td>
<td>Large, thick,</td>
</tr>
</tbody>
</table>
|               | developed | toughened, darken-
|               |             | ents |
|               |             | yellow, hardened |
|               |             | calloused over |
|               |             | breast, brown- |
|               |             | yellow |
|               |             | firm, rigid, and |
|               |             | may be broken, |
|               |             | often kinked |
| Breast bone   | posterior end pliable, |             |
|               | may be easily bent to |             |
|               | one side |             |

Ducks and geese show similar characteristic changes generally but the best indication is the bill which undergoes progressive hardening and darkens.

JUDGEMENT OF FRESHNESS

<table>
<thead>
<tr>
<th>PART OF ORGAN</th>
<th>FRESH BIRD</th>
<th>STALE OR DECOMPOSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Prominent, bright, moist</td>
<td>skull, soft, sunken</td>
</tr>
<tr>
<td>Wattles &amp; Comb</td>
<td>moist, supple</td>
<td>dry</td>
</tr>
<tr>
<td>Skin</td>
<td>clear, white or pale yellow, uniform</td>
<td>dark green discoul-</td>
</tr>
<tr>
<td></td>
<td>firmly held in flesh</td>
<td>ation, patchy</td>
</tr>
<tr>
<td>Feathers</td>
<td>clear skin</td>
<td>displaced, pull out</td>
</tr>
<tr>
<td></td>
<td>clear skin</td>
<td>easily</td>
</tr>
<tr>
<td></td>
<td>clear, moist, no small</td>
<td>green discoul-</td>
</tr>
<tr>
<td></td>
<td>dry, clear</td>
<td>ation, green-blue discoul-</td>
</tr>
<tr>
<td></td>
<td>limp, damp, pliable</td>
<td>ation</td>
</tr>
<tr>
<td></td>
<td>fresh and pleasant</td>
<td>green, sticky, smelly,</td>
</tr>
<tr>
<td></td>
<td>pliable but firm</td>
<td>exudation</td>
</tr>
<tr>
<td></td>
<td>stiff — rigor mortis</td>
<td>sticky — &quot;Cadaver spots&quot;</td>
</tr>
</tbody>
</table>

DIGESTIVE SYSTEM OF CHICKEN

Note: Notes relating to sketches:
1. Staling without decomposition may be considered to involve chemical change and dehydration. The speed of this process is directly related to:
   (a) The passage of time
   (b) Temperature
   (c) Ventilation

2. Decomposition results from bacterial action and the extent and speed can be related to:
   (a) The health of the bird
   (b) Cleanliness
   (c) Passage of time
   (d) Temperature
   (e) Presence of air
   (f) Moisture

As decomposition occurs more readily in the absence of air, it will occur first in skin folds, where limbs rest against the carcass, where two carcasses touch and where a carcass has been in contact with a surface.

S A Pluimwes Bulletin — July 1984

(Top to be continued)
"...just like a Chore-Time'
-how many times have you heard it?

No matter what salesmen pushing another brand of feeder tell you, it's impossible to get all Chore-Time's features without buying Chore-Time. We invented the pan feeder, and we've kept improving on the idea — while competitors pushed open trough. Now they're trying to catch up by making pans that look "just like Chore-Time's". You get all these features only with Chore-Time:

- **Fresh, un-picked-over feed to every bird** — a Chore-Time exclusive — is made possible because of enclosed feeder tube that stops charged with feed even between feedings.
- **Low energy usage** — less than half the power used by competitors — due to efficiency of pulling feed with our continuous auger in an enclosed, sanitary tube. Flow lengths available up to 167.64 metres.
- **New roll-formed tube** in fully galvanized both inside and out — not just outside as some competitors do.
- **3 to 5 points better feed conversion** due to our many feed-saving features, including our MEAL-TIME® feeding concept.
- **Self-leveling pan** — a patented, exclusive feature that cuts feed waste and bird feeding since pans can swing.
- **Adjustable feed level** lets you increase feed to start chicks from day one, or for differences in feed.
- **Feed saver ring** and lip — and wall shape cut waste from raking and filling, helping improve conversion 3 to 3 points.
- **New thicker galvanizing** on our pans — up to 50% thicker than others — means a far better value for your. New 3-year warranty on pan.
- **New 15-year warranty** (not pro-rated) on both auger and tube is unmatched in the industry. Most others offer only 90 days.
- **Feed conversion breakthrough** — programmed MEAL-TIME® feeding — allows more birds per feeder and also saves up to R3 000.00 per average house per year in feed. Competitors' feeders simply are not capable of MEAL-TIME® feeding.

Spartan Cages (Pty) Ltd., P.O. Box 136, Halfway House, 1685
Telephone 805-2151/9, Telex No. 42 2509.

**SPARTAN**

**CHORE-TIME**

**FEED — why use more when less will do?**
Marek's disease in brain causes transient paralysis

Recent findings indicate that Marek's disease (MD) virus-induced transient paralysis of chickens may be due to an inflammation of the brain, according to J. N. Farmegay, E. J. Gorgacz, M. A. Parker, J. Brown and L. W. Schenman, University of Georgia, Athens, GA (Am J of Vet Res 44:1541-1544, 1983).

In addition to visceral and peripheral nerve lymphoid lesions of MD, the MD virus can also cause a reversible or transient inflammation of the brain that causes transient paralysis in genetically susceptible lines of chickens.

Birds affected with transient paralysis become depressed and partially paralyzed 9 to 12 days after inoculation with MD virus. These signs disappear within 24 to 48 hours and do not recur. — T. H. Elsasser, D. V. M.

Reovirus does not affect immunocompetence in chickens

Immunocompetence of 8-week-old reovirus (WU 2907)-infected and uninfected chickens fed various dietary levels of sodium, choline or taurine was evaluated in four experiments reported by M.E. Cook and W.T. Springer, Louisiana State University, Baton Rouge, LA (Avian dis 27:367-377, 1983).

Data from these experiments indicate that reovirus infection had no adverse effect on the immunocompetence of chickens eight weeks after infection.

Dietary deficiencies also had no adverse effect on the immunocompetence of 8-week-old reovirus-infected or uninfected chickens. — T. H. Elsasser, D. V. M.

Tissue culture coryza vaccine gives improved results

A trivalent bacterin against coryza (Hemophilus gallinarum) that was prepared by growing the organisms in avian tissue culture has been shown to give broader protection to chickens than bacterins prepared in other media, say (Vergbay op bl. 321).

The right environment for poultry houses

Acme's Fan-Jet convection tube ventilation system is a familiar sight in the most successful poultry operations. It provides quiet draft-free air movement to eliminate cold spots during every stage of the production cycle.

And, because the Fan-Jet is a special pressurizing low horsepower fan developed for this particular application, users can expect a lower operating cost.

Investigate this highly effective — energy saving environmental control system by calling Spartan Cages, Hi Lay Products or R. Barlow Equipment Company.
LINCO-WRAP Giblet Packers

- Developed to pack automatically the set of giblets to be placed in each bird after chilling.
- The packing material used is plastic film which, by means of electrically heated hot air, is welded.
- The drive system is infinitely variable to suit any production requirements.
- The machine is made entirely from stainless steel — minimal maintenance.

Lincopack Packing Machine

- Developed to further improve the product flow and to eliminate the heavy manual work in the packing area.
- Filling, hocking the poultry, and closing the bags with one operator up to 900 birds per hour.
- With standard stacked polyethylene bags.
- All parts of the loading mechanism are made of stainless steel and the working cycle is pneumatically controlled.

LINCO S.A.
PO Box 786, Fourways 2055, 187 Arbeid Ave., Strydom Park, Randburg. Telephone: (011) 793-1329, Telex: 4-21992 SA.
Why not use the ultimate brooder?

NOVA MK 3

- Manufactured in R.S.A. for local conditions.
- Low gas consumption.
- Rugged construction for long life.
- Easy & minimal maintenance
- Individually or remote controlled.

Contact us for all your equipment requirements

Maywick Africa (Pty) Limited
80 Fifth Street, Bocysens Reserve, Johannesburg 2091. Telephone 835-2161/2. Telex 8-7721 S.A.
P.O. Box 82131, Southdale 2135

TENDERS — VERKOOP VAN EIERGRADEERMASJIENE

Tenders word ingewag vir:

(A) 1 (een) Moba 9 gradeermasjiene met 'speedpack' en ekstra invoerbaan vir handlaal. Kapasiteit 13500 eiers per uur, en
(B) 2 (twee) Moba 5 masjiene. Kapasiteit 6000 eiers per uur.
Vir verdere besonderhede skakel: Die bestuurder by Kroonstad 01411 — 25932, gedurende werksure

VERKOOPVOORWAARDES

1. Goedere word voetstoots verkoop
2. Kontant of bankgewaarborgde tijks met dag van verwydering.
3. Sluitingsdatum 5 September 1984 om 12h00
4. Tenders sal oopgemaak word op 6 September 1984 om 10h00
5.Verseelde tenders gemerk 'Moba' moet gereg word aan:
   Die Bestuurder
   Eiko pluimveeplaas (Edms) beperk
   Postbus 685
   Kroonstad
   9500

6. Eiko pluimveeplaas is nie gebonde om die hoogste of enigste tender te aanvaar nie.
RESEARCH REVIEWS

Research studies generally uphold shallow cage advantages

From an examination of 25 studies on the effects of housing layers in either conventional deep cages or shallow cages, B.O. Hughes, Agricultural Research Council’s Poultry Research Center, Roslin, Midlothian, EH25 9PS, Scotland, has concluded that results generally support the thesis originally advanced by Donald Bell, University of California (Winds’s Poultry Sci J, 39:218-228, 1983).

Bell’s article, “Reverse cage demonstrates striking income advantage,” appeared on page 326 of Poultry Digest, July 1972.

“The movement towards shallow cages which is occurring in some countries on the grounds that gains in productivity can occur,” Hughes stated, “is unlikely to have any harmful effect on welfare, and may be beneficial.”

Studies examined indicated that hens in shallow cages produced a greater egg mass (generally because of higher egg numbers), ate more feed, added more body weight and sometimes showed a reduction in mortality than hens in conventional deep cages.

These results appear to be due to the fact that the shallow cage provides more feeding space per hen, so that all birds can eat at the same time. What it does, therefore, is to lessen the effects of crowding.

Hens in conventional deep cages have been observed to move around more because all birds cannot eat at the same time. A bird has to wait and push in, displacing another bird at the trough. In a shallow cage, on the other hand, a bird can stop eating and rest without having to find a new position.

The aggression level, as evidenced by pecking, is much less in the shallow cages.

Hughes notes that the trend toward shallow cages is more widespread in the United States and in Australia where hens in cages generally have less than 62 square inches per bird. In Europe, 70 square inches or more are allotted per bird.

If the objective is to ameliorate the harmful effects of crowding, he raises the question as to whether it would be more cost effective to move to shallow cages or to reduce the stocking density, thereby both increasing feeding space and providing a greater area per bird.

The E. tenella PS was significantly less pathogenic than the parent line after 30 embryo passages, but equal to the parent line in immunogenicity.

The E. necatrix PS 144 was also significantly less pathogenic after 30 embryo passages, but there was also some loss in immunogenicity. However, this loss of immunogenicity could be overcome by increasing the dose of oocysts.

Another strain of E. tenella, FS66, was just as pathogenic for chickens as the parent line after 29 embryo passages. Additional work is needed to determine the stability of attenuation and immunogenicity of these as well as other species of coccidia. — T.H. Eleazer, D.V.M.

Reoviruses play a role in malabsorption syndrome

Avian reoviruses (AR) have been isolated from broiler chickens affected with a disease condition characterized by osteoperosis, stunted growth, arthritis, lack of skin pigmentation, abnormal feathering and increased mortality, according to J.K. Rosenberger, University of Delaware, Newark, DE (Proc. Western Poultry Disease Conference, 1983).

The author feels that this malabsorption syndrome may be brought on in part by some of these AR viruses by adversely affecting digestion, intestinal absorption, metabolism, or by direct tissue damage in the gut.

Economic losses from this disease are not as much from increased mortality rates, but rather from poor feed conversion and decreases in marketability.

Laboratory procedures from checking for malabsorption of nutrients from the gut showed that some but not all of the AR viruses isolated were capable of causing malabsorption syndrome. — T.H. Eleazer, D.V.M.

Liquid form of methionine acceptable source for broilers

A liquid form of methionine described as methionine hydroxy analogue-free acid, or abbreviated to MHA-FA, was found to be an acceptable source of methionine for broiler chicks on corn-soybean meal diets from day-old to market weights, according to studies reported by Robert B. Eiken and Patricia Y. Hester, Purdue University, West Lafayette, IN 47907 (Poultry Sci 62:2030-2043, 1983).

MHA-FA supported 49-day weight gains comparable to those of chicks fed DL-methionine, and both sources were superior to L-methionine.

Alimex® is the commercial name for MHA-FA.

Virginiamycin controls necrotic enteritis

Although not yet approved for treatment of necrotic enteritis by the Food and Drug Administration, virginiamycin has been shown by C.R. Miller, Smith-Kline Animal Health Products, West Chester, PA (Proc. of Western Poultry Disease Conference, 1983) to be effective in treating necrotic enteritis.

In battery and floor pen trials, levels of virginiamycin of 0.5, 1.0, 1.5, 2.0 and 4.0 grams per ton of ration were fed to broilers infected with necrotic enteritis.

Levels of treatment of 2.0 grams per ton or greater were effective in controlling mortality from the disease. However, it is felt the 20 grams per ton level is best if necrotic enteritis exposure on a farm is severe.

Body weight and feed conversion also improved the treatment when compared with untreated infected controls. — T.H. Eleazer, D.V.M.

Chickens show age resistance to infectious bursal disease

When chickens free of infectious bursal disease (IBD) maternal anti-body were inoculated with a virulent strain of IBD virus at 1, 5, or 11 weeks of age, those inoculated at five weeks developed severe clinical signs and had reduced levels of serum complement within two to four days after inoculation, according to A.M. Fadley and F. National, Regional Poultry Research Laboratory, East Lansing, Ml (Avian Dis 27:714-723, 1983).

The animals inoculated at 1 or 11 weeks did not. However, all groups developed microscopic lesions, and the detection of virus in the lymphoid organs was equal in the three groups.

These results indicate an age resistance to the clinical signs of IBD that is independent of viral infection and the ability to produce microscopic lesions. — T.H. Eleazer, D.V.M.

Embryo passage can attenuate coccidia for immunizing

One strain of Eimeria tenella (PS strain) and one of E. necatex (PS 144) were passed in chicken embryos to see if this would attenuate them for use as an immunizing agent in chickens by T.C. Gores, P.L. Long, M. Kogut and J. Johnson, University of Georgia, Athens GA (Avian Dis 27:569-576, 1983).
Tokai's answer to soaring feed costs

Every day that your pullets sit around waiting to start laying costs you money.

So there's a lot to be said for an egg that makes its appearance at eighteen weeks - instead of the usual twenty-one or even twenty-four weeks.

With feed costs as high as they are, a saving of three weeks' feed (say 60 cents per pullet) speaks for itself.

How do you get an eighteen-week (and saucy) egg? You buy a Tokai Pullet. The Tokaplush for tinted eggs. The Tokai Superbrown for brown eggs.

With its unique early sexual maturity, the Tokai pullet will give you a head start in the profitability stakes.

So if feed costs and a sluggish market are getting you down, think about the eighteen-week egg. It could keep you in business.

TOKAI BREEDING FARM (PTY) LTD, P.O. Box 4 Tokai 7966 Tel (021) 720274 P.O. Box 101 Hatfield House, 1685 Tel (011) 7383804
Die beste eiergradeermasjien ter wêreld
The ultimate in egg graders

Handpak-modelle wissel tussen 1 500 en 13 600 eiers per uur
Automatic packers range between 12 000 and 50 000 per hour
Die enigste Agent vir Suid-Afrika is:
The Sole Agent for South Africa is:

Steinbro Eggs Limited/Beperk
Postbus/P O Box 73042, Fairland 2030
Teleks/Telex: 4-25608 SA
Telefoon/Telephone: (011) 673-3020/1/2/3/4

U kontak: Your contact:
P P Jordan

Ook vir die voorsiening van onderdele, tegniese advies en diens
Also for spares, service and technical advice

You must have seen a MOBA

Insurance for:

THE POULTRY INDUSTRY
THE S.A. POULTRY ASSOCIATION'S
COCKSURE/VEERKRAAG SCHEME

Available at PFV branches throughout South Africa

Johannesburg – (011) 835-6211
Benoni – (011) 54-0161
Bloemfontein – (051) 842541
Cape Town – (021) 25-2568, 25-2563
Durban – (031) 31-9311
East London – (0431) 2-5947/8, 2-1828/7
George – (0441) 72450
Graaff-Reinet – (0491) 35531, 4127
Kimberley – (0531) 842213/2
Klerksdorp – (018) 2-9403, 2-9423, 2-9436
Middelburg – (011) 252555/67/8/9
Nelspruit – (034) 26158, 26190
Pietermaritzburg – (0331) 2-0731
Port Elizabeth – (041) 22-2041
Prinsloo – (012) 21-1621
Pretoria – (012) 21-6211
Stellenbosch – (021) 76500
Uitenhage – (0541) 5771
Witbank – (017) 2-8860/98/97, 2-5320
Windhoek – (061) 3-7100

Managed by PFV and underwritten by Mutual & Federal.
For quotations or cover, telephone your nearest PFV branch.

COCKSURE PROTECTION — More than just insurance.
SPARTAN GIVES THE FARMER MORE!

Houses and cages

Spartan the problem solvers
From a single cage to a package poultry deal, and every appliance to make your business more profitable. We can help solve all your housing, feeding and watering problems. It's our business to look after you!

SPARTAN CAGES (PTY) LTD
P.O. Box 136 · Halfway House · South Africa
Telex 422509SA. Telephone (011) 805-2190/9

THE PLASSON CUP

The most advanced drinking system for battery hens.
Introducing the Plsson Cup

* No spills — the poultry house remains dry
* Easy to install
* Firmly positioned on the bars of the cage
* Resistant to all types of medicaments
* No cleaning required
Birds can get their heads wet beneficial in hot weather
As trouble free as the drinkers

PENINSULA POULTRY APPLIANCES (PTY) LTD.
P.O. Box 4, TOKAI 7966
(021) 72-0274
KRY MEDALJE

Daarom is dit 'n noodsaaklike vereiste dat landboubeleid met die algemene ekonomiese beleid van die land versoekbaar moet wees. Die wetskrif is dus geen dokument wat tgdgebonde is en wat onveranderlik in 'n bepaalde breek van goddeloos, maar is vooruitstrevend onderhewig aan hersiening.

Minister Wenzel sê die ernstige gevolge van die droogte en die geweldige omvang van die fynstabiliteit bystand deur die State, benadruk die noodsaaklikheid van 'n langtermynstrategie. Ondersteun deur gepaste aansprongsmaatregeld, om die boerdery te bewaar en die plattelandse gebiede, waar 47 persent van die bevolking woon en bykans 32 persent van die totale kleinhandelverkoop plaasvind, in stand te hou.

Landboubeleid moet dus daarop ingestel wees om die landbou 'n selfstandige en finansiële gesonde bedryf te maak en aldus as hoofmaatskappy tot die minimum te beperk.

Volgens die Minister is die produksieekonomiese taktiek van landboubeleid:

- Die naslawening van optimale beplanting van landbouprodukte. Die behoefte van landbougrond. Die naslawening van 'n maximum getal goed opgeleide en finansiële gesonde eenersbewoners boere. Die optimale benutting van arbeid. Die naslawening van ordelike bemanning met inskyning van die beginself van die vryemarktbeleid en die landbouw van bepaalde gehele- en gigantiese staande van Suid-Afrikaanse landbouprodukte. Die algemene taktiek van landboubeleid is volgens die wetskrif:

Selfversorgendheid ten opsigte van voedsel, vesel en drank en die voorziendheid van grondstowwe teen redelijke pryse aan die plaaslike rywerde. Optimaliseer deelname aan die internasionale handel in landbouprodukte. Die bystand van landbou tot streeksontwikkeling. Die bevordering van landbou-onderwyskwaliteit in Suid-Afrika en in Afrika in algemeen. 'n Vyse mededinging word gereguleer en aangemoedig, mits dit met landbou- lang versoekbaar is en rekening hou met die eiesoorte van die landbou.

Minister Wenzel sê ondervinding in die afgelope jaar het die fynstabiliseringsprobleme in die landbou sterk na vore gebring en die Regering gaan inspanning aangaan saam met hierdie vrae.

Hy sê voorts die landboubeleid en die maatregelle moet in die lig van die land se algemene ekonomiese ekonomiese taktiek deurlopend gevalleer word, en aanbevelings moet aan hom gedoen word om aanpassings met die doel op onder meer die verhoging van inkomste, 'n meer geërfke verspreiding van inkomste, die skakeling van werkplekheid, meer rasionele verdeler van landbou-aktiviteite tussen streke, voldoende beskerming van die landbou teen onbehoorlike maatregels van buite, 'n stabiler algemene peil van landbouproduktepryse en 'n toereikende openbare infrastruktuur en dienste.

Minister Wenzel sê bovendien die Departement van Landbou, wat se taak is om die beleids-instrumente te evaluer, kan die Suid-Afrikaanse Landbou-unie, waarby die koloniaslike beweging ingegrens is, in die opsig ook belangrike insigte lever.

WHITE PAPER: SAAU COMMENT

In its comment on the White Paper on Agricultural Policy, the Executive Committee of the South African Agricultural Union said that it is definitely necessary to pay tribute to the Minister of Agriculture who had the courage and could persuade his colleagues in the Cabinet to table a White Paper on Agricultural Policy. The Executive Committee met yesterday (1994-06-21) in Bloemfontein under the chairmanship of the President of the Union, Mr. Japie Wilkens.

Mr. Wilkens said after the meeting that the general view is that socio-political considerations such as constitutional development and interstate relations, which although they are very important and yet again emphasize the fusion of the various fields, weighed somewhat heavily among the compilers. "Aspects such as market-oriented production, the importance of price ratios, the future of food subsidies and the income stabilisation issue were only slightly touched on or even not at all." Mr. Wilkens also pointed out that in certain circles there is the opinion that the White Paper is too vague and does not show its teeth. "This can be concealed in certain aspects, but on the other hand the purpose of the White Paper was and still is not to clearly identify and then solve problems. It merely indicates the direction in which solutions should be sought and the basic principles that, according to the Government, would be used in the process. As such it provides a good basis for further dialogue and development." According to Mr. Wilkens the most important task now, and this was also confirmed by the Minister, is to launch a programme of action to first determine priorities and second to implement the principles as contained in the White Paper.

In this process the Minister of Agriculture and the South African Agricultural Union must work very closely together. Where it is the declared objective of the Union to negotiate the best possible social and economic position for the farmer within the national economy, it is the task and responsibility of each affiliated and commodity committee of the Union and all its members to fully participate in this process in the foreseeable future and to apply the principles in the White Paper to all facets of the South African agriculture. Detailed objectives, priorities and measures must also be formulated by each branch of industry." said Mr. Wilkens.

S A Poultry Bulletin — July 1984
WE CAN COOL YOU OFF

Atomizing Systems Evaporative Cooling Equipment

Big Dutchman
P.O. Box 279, Emdenthal, Transvaal, Republic of South Africa
Tel: (011) 609-2160
Fax: (021) 96-1660

Controlling heat is what our systems are all about. Moistening consistent temperatures with reliable non-fogging nozzles—
Polyster, polyethylene and material equipment. There is also the added value of superior Atomizing Systems' craftsmanship, design
Put the experts to work for you.

- All nozzles equipped with fibers
- No more maintenance costs
- No water pumps—less parts
- Easy water regulation
- High performance
- Stainless steel nozzle
- High water output mean
- Easy maintenance
- No leaks
- Stainless steel nozzles
- Easy water regulation
- Only available locally

Voice: 011 609-2160
Fax: 021 96-1660
CONSIDERABLE ADVANTAGES FOR CONSUMERS IN INTERNATIONAL DEALS FINANCED IN GULDERS BY BIG DUTCHMAN

Big Dutchman's link with a Netherlands-based multinational offers considerable advantages for customers needing to finance international deals.

The company's South African managing director, Pat Russell, pointed out that international deals financed by Big Dutchman were concluded in Dutch guilders — a strong, stable currency.

"There are constant fluctuations in various currencies against the rand, but the Dutch guilder has varied less than most. The biggest movement of the guilder against the rand was 21.7 per cent — that was in 1981," Mr Russell noted.

"In 1979 and 1980, the fluctuations in the strength of the guilder worked in favour of the rand — at an average rate of about 20 per cent.

"The dollar, on the other hand, fluctuated wildly against the rand — recently, it has varied by 42 per cent.

"In the case of overseas deals financed by us, even assuming a 30 per cent fluctuation of the guilder against the rand — something which has not happened during the last seven years — the customer would have to pay an additional 36 per cent, based on 10 per cent interest over 12 months.

"If he had raised the money at 20 per cent on the local market, he would end up paying 2.5 per cent more than in the case I have just mentioned.

"The lesson is simple — you are much less likely to get an unpleasant surprise if you finance your import orders through us and you might well gain substantially," Mr Russell commented.

SA'S MICROMIST AGENTS

Spartan Cages (Pty) Limited of Halfway House — which is bidding to clarify possible confusion among breeders — has stressed that it is the sole South African agent for Baumaar's Micromist cooling systems.

The company, according to Spartan Cages' managing director, Mr Martin Krantz, was the first in South Africa to introduce this specialized equipment to the local poultry industry.

With regard to Spartan Cages' exclusive Micromist agency, he said the company has officially signed agency documents, available for inspection at its head office at 12 South Street, Halfway House, in Midrand.

"We would not like South Africa's poultry producers to jeopardize their operations by having Micromist' cooling systems supplied and installed by an unrecognised 'agent'. Micromist warranties are only valid if the equipment has been supplied and installed by Spartan Cages or one of its two associate companies, Hi-Lay of Pietermaritzburg and R Barlow Equipment of Cape Town," said Mr Krantz.

Spartan Cages' engineering team has had official technical training from Baumaar International in the United States and is assured of continued technological support from American associates in circumstances.

Mr Krantz stressed, Spartan Cages carries a full range of approved Micromist spares ex-stock.

AFLATOXINS IN FOOD — WHAT'S IT ALL ABOUT?

REPRINT WITH KIND PERMISSION OF SA FOOD REVIEW

There has been much publicity recently on aflatoxin occurrence in foodstuffs and, as a service to readers of FOOD REVIEW, the SA Association for Food Science & Technology (SAAFoSt) has furnished the following information on the subject.

A toxin is a substance that can cause harmful effects (become a hazard) in animals (including man) associated in circumstances. It will only become a hazard if the circumstances are suitable and one of the most important relevant circumstances is the quantity which enters the body.

What are mycotoxins?

Mycotoxins are toxins produced by mould (or fungus) growth and aflatoxin is a mycotoxin produced by the mould Aspergillus flavus.

Until recently, mycotoxins received scant attention as they were relatively unknown. The best known mycotoxin was produced by the ergot fungus which grows on cereals.

Interest focused on mycotoxins in 1960, however, when 100 000 turkey poults died in Britain and microscopic examination of their feed revealed fungus growing on groundnut particles in the feed. Samples of the whole groundnut used in the feed were obtained and, with the aid of the latest methods of analysis, a toxin was extracted which was shown to be produced by the mould. The material was named after the mould Aspergillus flavus 10XH (hence A FLATOXIN) and since then, mycotoxins have been intensively studied.

Aflatoxin fluoresces intensely under ultraviolet light, providing an easy means of testing food for its presence. Originally two toxins were identified — one fluoresced blue and was called aflatoxin B1 and the other fluoresced green and was called aflatoxin G, but then it was found that both B1 and G comprised two isomeric types, each called B1 and B2, G1 and G2. Later, other two further types were found in milk from cows which had eaten feed containing aflatoxin and these were called aflatoxin M1 and M2. Since then, further types have been found and the total to date is 12.

The occurrence of aflatoxins in food products is not new but it is only in the last 25 years or so that analytical methods have improved to the extent of allowing very small quantities, as little as one thousand-millionth of a gram (one thousandth of a microgram) to be determined.

Since the turkey episode in Britain in 1960, foods have been extensively studied for aflatoxin content in that country. Out of 159 samples of groundnuts tested, 64 were found to contain aflatoxin. Out of 19 samples of roasted cocoa beans tested, seven contained aflatoxin. Out of 143 samples of cheese tested, 86 contained aflatoxin. Out of 42 samples of maize and corn flour tested, 24 contained aflatoxin. But nearly all quantities found were very small, being less than five micrograms/kilogram.

The effect of aflatoxin on man and animals has been, and continues to be, extensively studied. Heat has little effect on aflatoxin, so cooked food does not destroy it. Toxicity of aflatoxin depends on many things, such as species of animal, type of aflatoxin (aflatoxin B1 being the most potent), age, sex, dosage, method of administration, etc., and the exact effects are also dependent on these factors.

Cancer of the liver has been caused in animals to date, all living things tested have reacted unfavourably to administration of aflatoxin. Poultry, particularly ducklings, are very reactive to oral ingestion of aflatoxin and as little as 2.5 micrograms of aflatoxin B1 can kill a one-day-old duckling.

There is a pronounced difference in sensitivity which wards aflatoxin between animal species but in all cases tested sensitivity decreased with age. Farm animals have been shown to suffer growth inhibition and their liver and kidney masses have increased. Most ingested aflatoxin is excreted in the urine and feces but lactating cows convert aflatoxin B1 into aflatoxin M1 and M2 which are then found in their milk.

In January 1976 the South African Department of Health made a regulation under the Foods, Cosmetics and Disinfectants Act laying down a maximum of 10 micrograms of aflatoxin per kilogram of food of which not more than five micrograms/kilogram may be aflatoxin B1. The occurrence of aflatoxins in food is almost certainly nothing new, but modern analytical techniques now enable them to be detected. There are many species of mould and only a few have been found to produce toxins. The safest way for the public to guard against possible harmful effects from ingesting aflatoxins is not to eat food contaminated with mould.
SYSTEME
RUNS AHEAD

When there are chickens on the moon.
You can be sure Systeme will be first to process them!

Why?
Because Systeme make it their business to always be one step ahead.
Our policy ensures that you — the customer — get the best and the most modern
equipment available.
Our designers are continually updating and perfecting each piece of equipment.
We keep you supplied with the latest processing machinery technology can offer.
If you don't know what we do, you are not up to date with what is happening,
Let us provide you with the proof.
Write, telephone or telex for full information to:

SPARTAN

Spartan Cages (Pty) Ltd.
P.O. Box 136, Halfway House 1885, Tvl., R.S.A.
Tel. (Code 011) 865-2151/2/3
Telex 4-22509
THE SPICE SPECIALISTS

SPECIALISING in supplying spices to the food production industry in the Cape is a family-owned business — Hot Spice Products.

Dubbed 'The Spice Specialists', this company import and export spices from all around the world — notably from the Far East, Guatemala, Morocco, and Spain — grinds them, blends samples to customers' varying requirements, packs and supplies them.

Hot Spice Products has recently completed an extension to its two-year-old plant in Athlone Industrial Estate.

From small beginnings

Although the company has been situated in the Athlone district for the past decade, the business was originally founded by Moses Adams some 15 years ago, working from a small room in Woodstock, where every process at that time was carried out manually — from grinding to weighing and packing.

Today in the new Athlone factory, modern process equipment does most of the work automatically.

Questioned about the factors leading to the noteworthy growth of Hot Spice Products, managing director, Hamid Adams (son of the founder, Moses Adams), notes that one very important factor has been the high level of staff loyalty that the company has enjoyed over the years since it moved to Athlone. 'We have almost the same staff as we had ten years ago,' he said.

In fact, Adams, recalls, the company had no sooner moved to Athlone than it started on its growth phase and the premises were too small. He claims that the company hardly needed to canvass new customers since it has acquired a significant measure of customer loyalty due to the high quality of the goods supplied.

Added to the quality factor is the competitive

Keep your livestock content with Spartan’s automatic curtains

Spartan’s electric driven Auto-Curtain system takes the guesswork out of ventilating your agricultural buildings by automatically keeping the curtains open just enough to maintain the right temperature climate.

The Auto-Curtain — controlled by a thermostat and timer switch — automatically opens or closes the flexible wide curtains, windows, or louvres in your house. When the temperature rises, the curtains open in stages until the desired temperature is reached. When it goes colder, they close slowly again — so more time is kept to within three or four degrees of Fahrenheit within in natural or artificially ventilated houses.

Any conventional type farm building which has a valve or regulating system for its windows or flexible curtains can use Auto-Curtain. The Auto-Curtain machine can be used on a house up to 120 metres in length and can operate both sides at one time.

Auto-Curtain works around the clock — all year round. Whenever the temperature in your house changes, Auto-Curtain happens to change it back to what it should be — keeping materially down and making poultry, eggs and even plants happier and healthier.

Auto-Curtain has been successfully designed and engineered to provide many years of easy, trouble-free, economical controlled ventilation.

It’s built to last — and to make more profits for you!
Ons kompersyfers is AKKURAAT*
*(nagegaan deur 'n ouditeur)

Hierdie syfers bewys dat ISA en Tokai jonghennne wat deur Homara grootgemaak is, die grootste winste toon

<table>
<thead>
<tr>
<th>VK Doelwit</th>
<th>ISA Beste syfer</th>
<th>Gemiddeld*</th>
<th>Tokai Beste syfer</th>
<th>Gemiddeld*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,5</td>
<td>2,28</td>
<td>2,48</td>
<td>Voeromset</td>
<td>2,34</td>
</tr>
<tr>
<td>115</td>
<td>95,97</td>
<td>109,81</td>
<td>20 - 60 weke</td>
<td>103,93</td>
</tr>
<tr>
<td>209</td>
<td>212,88</td>
<td>205,31</td>
<td>Voerinnome</td>
<td>109,94</td>
</tr>
<tr>
<td>182</td>
<td>168</td>
<td>178</td>
<td>20 - 60 weke</td>
<td></td>
</tr>
<tr>
<td>5 %</td>
<td>2,74</td>
<td>4,9</td>
<td>Eiergetalle tot op</td>
<td></td>
</tr>
<tr>
<td>62 gm</td>
<td>64,07</td>
<td>59,86</td>
<td>60 weke ouderdom</td>
<td></td>
</tr>
<tr>
<td>272,64</td>
<td>266,8</td>
<td>263,09</td>
<td>Gm voer/dos eiers</td>
<td></td>
</tr>
</tbody>
</table>

(*Gemiddelde gebaseer op syfers van alle trope wat ouderdom 60 weke bereik vanaf MAART 1983 d.i. 66669 ISA, 43321 T+*)

NA URE:

- Neil Malan (Homara) (012)611754
- S Preiner (012)612993
- Cedric Bolleurs (012)65740
- Hugo Cilliers (011)742-2087

HOMARA
TELEKS: 420044
POSBUS 95
IRENE
1675

Tel. (012)612144/5
(012)612216
(011)612150
(011)611090
nature of the business which Adams adds has been another reason for the company’s considerable expansion.

In charge of sales in the Cape area is Salim Bray, sales manager, whose team sells processed spices to chained stores, corner shops, wholesalers and food processors.

So far as food processors are concerned (and the company deals mostly with the meat and poultry industries), Hot Spice Products supplies prepacked spices from seven gram packs right up to 500 gram packs.

The company has improved its capacity to deliver at short notice with the recent commissioning of additional warehousing space. Here large stocks of all types of spices can be held in readiness for customers’ orders.

‘My mother was the architect of this business, declares Hamid Adams, explaining that she particularly brought her personal touch to new-product development. Although she has now retired, Mrs Adams still gives the company the benefit of her years of experience by continuing to keep an eye on matters such as quality control.

Critical assessment

Because of the rapid expansion of the business, the directors (all family members) have continually been obliged to assess the company’s performance in a critical manner.

This — coupled to the quality spices offered — has led to an increased market penetration. Critical assessment has also led to internal staff promotions and a more specialised approach to job descriptions. For instance, Adams himself has progressed from an integrated function — a sort of “jack of all trades” — to being more specifically involved in customer relations, while those who started their careers with the company as hand packers now find themselves controlling complex machinery.

Computerised control

Computerised production processing, milling and distribution is another feature of the business. The computer also facilitates stock control.

‘Because of our management ability, we can compete on quality, productivity, efficiency and meeting deadlines,’ says Hamid Adams. ‘It is a medium-sized business with a minimum of red tape. Because of our flexible outlook, we can come to quick decisions and this makes us highly competitive on prices compared to our competitors,’ he adds.

It is Hamid Adams’ opinion that the company is only poised at the beginning of an even more phenomenal growth period than the company has enjoyed so far. He mainly attributes this to the good relationship between management, staff and customers, and the guaranteed quality of the products offered.

‘Whatever spice you’re looking for, you can find it at Hot Spice Products,’ claim the owners.

NEW POUlTRY DRINKER GUARANTEED NOT TO LEAK FOR 10 YEARS

The sand-ballasted drinkers can be either floor-mounted or suspended, and are ideal for all floor-raised birds. They have the features which have made Monotipo’s Mark 1 to 5 drinkers popular with poultry operators world-wide, plus some entirely new innovations. These include hanging straps welded to the valves for greater reliability, plus a new valve pin for more sensitive activation of the water supply.

Between 5 and 10 drinkers will be needed for every 1000 broilers, rising to 10 to 14 for the same number of breeders.

The Mark 7 drinker measures 38 cm across the base and is approximately 50 cm high. They cost R10 each, with discounts for large quantities by arrangement. GST is excluded.

The drinkers are available locally only from Big Dutchman (South Africa) (Pty) Ltd. Big Dutchman is part of the $1,1-billion a year US Industries Incorporated Group.

(Van M. 306)

Act (Act No. 13 of 1966) with its attendant amendments and regulations. The regulations make provision for compensation to be paid in the event of such slaughter. It would appear that the US decision to slaughter only cases of virulent AI, permitted the disease to spread for 6 months before slaughter-out was instituted, resulting in an estimated 30 million dollar loss to the industry, and a similar delay in eradication policy in a recent outbreak of Aspergillus’s Disease in pigs in the U K cost the industry 23 million pounds. Clearly it would be wiser to slaughter-out (eradicate the disease) first, and ask questions afterwards!

Finally it must be stressed that this article is not designed to create panic but merely to create awareness of a potentially serious disease. By total and all-out the dangers of the disease, we should be very careful to observe grass-roots, basic hygiene practices on our farms at all times, especially those who tend to travel frequently both locally and overseas. A prospect is relevant: ignorance creates apathy — awareness creates a sense of urgency.
Can you brood at a house heating cost of less than 1¢ per bird through winter?

If your answer is no – contact Hamworthy for a complete coal fired heating system – From design to after sales service – Systems which are proven by many large producers throughout the Republic.
McNUGGETS

McNuggets, the chicken snack of McDonald's Corporation, USA, has been the cause of a significant increase in poultry consumption in the United States. Their unique convenience has created a virtually new market for chicken meat. Already 3,000,000 broilers per week are going into McNuggets.

Because this has come about so suddenly, overseas processors have been directing many inquiries to Simon-Johnson in Kansas City. The following material has been compiled in an effort to explain the most frequently asked questions.

There are two different kinds of McNuggets: (white (breast) meat and dark (thigh) meat). These are randomly mixed in the cooking process in the ratio of 70% breast meat units and 30% thigh meat units. (Since the natural proportion between these meats in most broilers is 60/40, McDonald's requires breast meat from more broilers than they do thigh meat.)

The meat is purchased from a variety of processors. All this immense quantity of meat is manually deboned (by operators with knives) in core systems. That is, neither breast-deboning nor thigh-deboner machines are used.

The reason for using core-deboning is that the combination of yield and labour makes it work out most economically on cores. Even after recent trials, the use of deboning machines has not been accepted because: (1) either the yield is too low or (2) the trimming labour to remove cartilage and bone fragments becomes excessive

Various poultry processors are now producing boxed poultry products, similar to McNuggets, which are being sold through supermarkets. These products are known by their generic name, "nuggets".

To produce nuggets once the deboning is completed, the meat is given a coarse grind in a ribbon-type mixer blender. In this operation, the processor can add his other ingredients: moisture, salt, spices, and flavouring. Phosphates are added as these help the meat retain its moisture through the cooking process. Some processors mix white and dark meat together at this point.

For some products, small amounts of comminuted meat are blended in to improve adhesion. Larger proportions of this meat will cheapen the product. McDonald's uses no comminuted meat whatsoever.

(Vervolg op bl. 335)
"LETTER HERE FROM MY AUNT IN 3A—THEIR MANAGER HASN'T DISCOVERED TOTAL GAS HEATING YET."

With Totalgas, your young chicks are assured of all the warming heat they need, without risk of power failure or over-dried air. Totalgas is dependable and clean-burning, with low maintenance costs, too.

But best of all, Totalgas offers you the best back-up service, including reliable deliveries. Call your nearest Totalgas depot now.

TOTAL TOTALGAS
DERDE WETENSKAPLIKE DAG

25 Oktober 1984 is die geskiede datum vir die 3de Wetenskaplike Dag van die Suid-Afrikaanse Tak van die Wêreld Pluimveewetenskapvereniging. Hierdie Wetenskapdag vind weer eens by die H F BONSMAT AUDITORIUM te die NAVORSINGSINSTITUUT VIR VEE- EN SUIWEKLUNDNE, IRENE plaas.

Die program is as volg:

REGISTRASIE | 08h30 — 09h00
OPENING | 09h00 — 09h15
LESINGS | 09h15 — 12h45
MIDDAGETE | 12h45 — 13h30
LESINGS | 13h30 — 17h00
BRAAILLES | 17h00

DIE FINALE PROGRAM SAL GEPOS EN GEPUBLISEER WORD TE GELEGENHEDEN.

THIRD SCIENTIFIC DAY

25th October 1984 is the scheduled date for the 3rd Scientific Day of the South African Branch of the World Poultry Scientific Society. This scientific day once again will take place in the H.F. BONSMAT AUDITORIUM at the RESEARCH INSTITUTE FOR LIVESTOCK AND DAIRY FARMING, IRENE.

The programme is as follows:

REGISTRATION | 08h30 — 09h00
OPENING | 09h00 — 09h15
LECTURES | 09h15 — 12h45
LUNCH | 12h45 — 13h30
LECTURES: | 13h30 — 17h00
BRAAI | 17h00

THE FINAL PROGRAMME WILL BE POSTED AND PUBLISHED IN DUE COURSE.
HOW TO MAKE PROFITS OUT OF LOSS GENERATING CARCASSES AND OFF-CUTS

Further processing of White Meat

Until now, you have probably been selling small carcasses and off-cuts at a loss. Happily, you can now turn those losses into profits! With innovative technology and equipment from Crown Mills.

Further processing of chicken is neither expensive nor complicated. From the start, you make profits with chicken polonies, patties, sausages and many other comminuted chicken products.

We can also supply you with herbs, spices, seasonings, sauces, flavourings, coatings, collagen and natural and synthetic sausage casings. And because a small deviation in weight could lose you thousands of rand at a time, we market a wide range of accurate, upgradable digital scales for use in all areas of the chicken processing plant. In short, if it is profits you’re after, Crown Mills will keep you cackling all the way to the bank. So contact us today.

Supplied by the Meat Division.

Member of the Crown Mills Group.
Incorporating Crown Mills (Pty) Ltd and Vulcan Food Service Equipment (Pty) Ltd.
THE JAMESWAY INCUBATION SYSTEM.

SIMPLY SUPERIOR.

If you really want the best in hatchery systems, meaning absolutely the best combination of installation and running costs, related to hatchability and chick quality, look no further. The BIG J. Improved by the people who know Jamesway. Thicker walls, better joints, higher capacity without loss of hatch, energy saver fans, microprocessor control, improved sanitation and easier cleaning with top mounted controls. Eliminates the need to open the doors except during transfer. Up to date hatchery plans and specifications. Continual innovations. Choice of warp free FRP or Aluminium panels. Super accurate RTD probes. All with the design that has proved itself worldwide, utilizing the Chicks own body heat and oxygen/CO₂ requirements. At each stage, try the worst eggs and you'll see for yourself. Having read this far, let african turn key show how Jamesway can work for you too. AGAIN. AND AGAIN. AND AGAIN.

JAMESWAY

THE BETTER INCUBATOR. FROM AFRICAN TURN KEY
P.O. BOX 1088 WANDSBECK 3631, 14 HENWOOD ROAD, PINETOWN, NATAL, SOUTH AFRICA. PH. (031) 727-241
SOLE DISTRIBUTORS FOR SOUTH AND EAST AFRICA. TLX 6-24628 SA.
Choose what you need from the complete Spartan poultry package

- Expand operation of complete fully automatic houses for layers, brooders, incubators, etc.
- Anything from a complete poultry farm to a single egg tray.
- Highest quality equipment at best possible prices.
- Professional advice and genuine after-sales service.

Visit our showrooms. Write for catalogue. Spartan Cages Pty Ltd.
P.O. Box 166, Halfway House, 1805. Tel: Opposite Root. Phone: 2021786
Telex: 42-2509 SA. Here is just a small sample of our range.

S.P.A.R.T.A.N.

LYON ELECTRIC COMPANY, INC.

Debeaker System

The Pow-R-Pak Power unit and attachments for 6 to 10 day debeaking.
New Dual Debeaker.
Super V Debeaker for 16 wks old.
Full range blades & spares

For more information contact
P.P.A., P.O. Box 4, Tokai 7966
Phone (021) 720274
STRUCTABORD keeps your workers happy and comfortable (and profitable!)

STRUCTABORD roof insulation is heat-cold-fire resistant insulated panels consisting of a foam core with self-bonded facing on each side.

STRESS Insulation relieves stress by reducing temperatures.

FUEL Reduces heating requirement by retaining generated heat. Reduces lighting requirements due to high reflectivity of product. Reduces ventilation requirements due to lower solar radiation.

FEED Better conversion factor achieved for both cold and heat extremes. Feed represents almost 70% of production costs.

MORTALITY Better ambient temperatures results in lower mortality.

CONDENSATION Correctly installed, the insulation eliminates condensation and resultant damp and unhealthy litter.

FUNGUS & Does not provide sustenance for fungus.

RODENT Rodents or birds.

HYGIENE Can be washed down as it does not absorb water and withstands high pressure hosing.

LONG Is not affected by petroleum based adhesives or lasting detergents. Insulation properties do not deteriorate noticeably with age.

ECONOMICAL Correctly tailored to the application, the installed product will lead to better yields and greater productivity. In many cases the pay back period has been as low as 2 years.

INSTALLED IN OVER 150 POULTRY AND PIG HOUSES TO DATE IN SOUTH AFRICA.

Natal — Hi-Lay
P.O. Box 2548, Pietermaritzburg 3200
Tel: (033) 722992

Cape Town — Bartow Equipment Co.
P.O. Box 298, Durbanville 7500
Tel: (021) 96-3667

S.A. Poultry Bulletin — July 1964
'N MIDDEL VIR DIE BEHEER VAN KOKSIDIOSE IN BRAAIKUIKENS

SACOX®
verleen uitstekende beskerming teen koksídiose
SACOX®
leer tot optimale prestasie wat verbeterde massatoenames en voermeset tot gevolg het
SACOX®
werk vroeg in die siklus van die koksídia spesie en daar is dus minimale beskadiging aan intestinale selle

SACOX®
het geen newe-effek op die voersmaak nie, of die smaak en reuk van hoendervleis teen die aanbevolie vlak nie. Velkleur en ververing is ook normaal.
SACOX®
word gebruik teen een geriewe aanbevolie vlak van 60 dpm.
SACOX®
is stabiel in voormengsel asook meel en pil vorms

SACOX®
is veilig, effektief, ekonomies

Hoechst Farmaceutika (Edema) Beperk
Cheston Street 3, Industria
Postbus 8697, Johannesburg 2000
Veeartsenafdeling
THE ROSS BROWN by Bergvlei Chicks TAKES YOU INTO THE FUTURE WITH FEED EFFICIENCY

COMMERCIAL STOCK PERFORMANCE
Hen Housed Production:
64 weeks 243 eggs
68 weeks 260 eggs
72 weeks 276 eggs
First egg at 19-21 weeks
Peak production at 26-28 weeks

Feed Consumption:
0-18 weeks 6,75 kg
20-72 weeks 110-120g/H.D.
Average egg weight 59-60 g

AVAILABLE AT DAY OLD OR AT POINT OF LAY

Removal & O.F.S. BERGVLEI CHICK (PTY) LTD
P.O. Box 76225, Windywood, 2144. Tel: 702-1072/1636

Western Cape & Eastern Cape. FARM FAIR (PTY) LTD
P.O. Box 473, Belville, 7930. Tel: 981/229.
AMBER-LINK
BROWN EGG LAYER

that's performance

More marketable eggs plus a lot of other important economic traits. That's what it takes to make a HIGH-EFFICIENCY layer.

The Amber-Link has built a reputation for high egg numbers. She is bred for consistent production, adaptability and persistency. That's performance!

Combine that performance with her ability to overcome stress, convert feed efficiently and live well and you have a superior brown egg layer... The Amber-Link.

MAKE YOUR NEXT BATCH AMBER-LINK:

the chick that pays for itself

FOR FURTHER INFORMATION, PLEASE CALL —

TRANSVAAL AND O.F.S. AREA MANAGERS
Andre Coetsee, Farm More.
Jan Twiss
AMBER-LINK CHICK SALES
P.O. Box 272, Tarlton, 1700.
Tel: 011-699-1100

NATAL MANAGER
Kim Buttrick
AMBER-LINK CHICK SALES
P.O. Box 10943, Scottsville 3328.
Tel: 03351-24740

Rennie Thomas
GOLDEN LAY FARMS (PTY) LTD
P.O. Box 193, Brackenfell
Tel: 021-56-1181

Dekalb