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The illustrated machine is a 24-unit aut. evisceration machine operating at Gecombineerde Vleesverwerkings B.V. (G.P.B.) in Holland, and according to their managing director Mr. H. van de Vecht, the line is doing 6,000 b/h with a first class result.

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PO Box 786, Fourways 2055, 187 Arbeid Ave, Bromhof Ext 2, Strydom Park, Randburg. Tel: (011) 793-1329, Telex: 4-21992 SA.
The poultry industry was conspicuous by its absence. This attack was launched during a discussion programme on television. Representatives from the Meat and Dairy Boards took part in the discussion, which formed part of the activities of Heart Week.

In the programme various backbenchers were asked about egg products and egg producers. It was even suggested that such producers should not be allowed to advertise, or alternatively, that their advertising should mention the negative effects of cholesterol in the diet. The connection between diet and blood cholesterol, which in our opinion has never been proven unequivocally, was accepted without question as an absolute. There was talk of the need for balanced advertising as opposed to one-sided advertising...

Let’s apply the same criteria to the other participants in the programme. We are repeatedly being told that life style plays a decisive role in present-day health problems. Thus a physically inactive life style gives rise to the accumulation of fats in the arteries. A balanced approach would require that this aspect receive equal if not greater emphasis than attacks on specifically nutritious products. Furthermore, there are a whole range of products such as tobacco, sugar, alcohol, etc., which have a far more detrimental effect on health than nutritious products such as meat, eggs and dairy products. No attention was given to these products in this unsatisfactory approach due to the chosen theme for Heart Week this year, viz. Nutrition and the Heart? What about the fact that only a small percentage of South Africa’s population must shoulder the responsibility for the leadership and management expertise for the whole country? Is the increased stress that this brings about not a contributory factor to the high incidence of heart disease in South Africa? I ask these questions from the side-lines as a layman because the television presentation of the subject is not directed to me to be decidedly one-sided...

It may also be a mere coincidence, but one wonders to what extent a balanced view could emerge when an agricultural economist and a journalist were required to contest the medical and scientific validity of certain arguments with a medical scientist. Could the SABC not have provided a more balanced panel for such a discussion?

In addition one would have liked to have seen one of the experts of the SA egg industry participating in such a discussion. The industry was aware of Heart Week and had even undertaken to handle any liaison required in this regard.
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Possible Causes Of Avian Oedema

(Reprint by kind permission of Poultry International)

Over the years this disease has been called many different names: hydropneumonias; oedema disease; aspergillosis; water belly, toxic injuries, altitude disease, congestive heart failure, toxic heart disease, avian oedema. Equally, the suspected causes are various: sodium chloride intoxication, Crotalus antivenom complex, furazolidone intoxication, biphosphonate intoxication, dicyclomine hydrochloride, chloramphenicol, streptomycin, and vitamin E and selenium deficiencies, consumption of high-energy feeds, altitude syndrome or cold syndrome.

The symptoms of the disease are more often observed in chicks of more than 5 weeks old, but it has also been observed in younger birds. The lowest incidence percentage has been observed in birds one week old. The disease also affects turkeys and ducks.

The birds appear dyspneic at the most advanced stages, they seem to be sitting, their belly is elongated and they walk like ducks due to the interference of the belly full of fluid. The incidence varies, but in most of the cases observed it ranges from 10 to 20%. The mortality may reach 20%, particularly when there is no other disease in the flock which have been considered as predisposing agents.

**Effect of Pelleted Feed**

During more than five years of continuous avian observations, we have been able to verify that the oedema syndrome is controlled almost completely by utilizing mash feed. Logically there have been exceptions, and these have occurred twice: once, the disease appeared during the second week of age in 1976 and again during the fourth week of age in 1981. In both cases, aspergillosis was diagnosed in one-day-old animals.

This is in accordance with reports in the literature and similar results in the control of avian oedema have been obtained in Ecuador and Venezuela when utilizing mash feed.

Moreover, when animals receiving pelleted feeds showed the disease symptoms, the picture could be normalized simply by switching back to mash feeds, the disease symptoms thus disappearing within a few days.

When the birds receive reground, previously pelleted feeds, no oedema outbreaks are observed and the final behavior in all parameters is identical to the ones receiving mash feeds. This shows that the pelleting as such has no influence of the appearance of the disease.

**Causes of the Disease**

Various causes have been suggested as being responsible for the development of oedema.

Considering that beside the predisposing

Flumeve-Sutilex — November 1983

Left: Chicken suffering of Oedema Disease
Right: Healthy chicken

volume by an increase in the glomerular filtration rate (this would explain the wet liver), a strong decrease of the adrenal vitamin C levels, which will not be available for its subsequent function in the oxidation-reduction reactions, which reduces the levels of dissolved oxygen, impairing the cellular respiration, decreasing the resistance to infection, damaging the vascular endothelium resulting in increased capillary fragility, causing subcutaneous haemorrhages.

**Vitamin C and its Possible Effect in Reducing Avian Oedema Disease**

For over three years we have been studying the effect of vitamin C in the control of the avian oedema on one of the largest broiler producing farms in Colombia. Initially, we worked with levels of 500 g of vitamin C per ton of pelleted feeds and achieved a reduction of the incidence of the disease in all cases by more than 95%. When compound feed manufacturers tried to utilize the same level of vitamin was obtained in the control of the disease.

However, in another supplementation trial run in close collaboration with a poultry feed manufacturer, the initial preventive effect of vitamin C was again confirmed (Figure 2).

This led us to analyse the possibilities of interfering with the results. We found the following:

1. Relative instability of ascorbic acid: Crystalline ascorbic acid is stable in absence of moisture. However, in the presence of humidity oxidation of ascorbic acid takes place and is accelerated by metal ions.

2. Losses of ascorbic acid, therefore, depend mostly on the humidity content of feed mixtures. In dry mash feeds or vitamin concentrations losses are within 10.20% after many months of

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storage. Choline and trace minerals may cause losses of up to 70% in premises. Damp treatment during the pelleting process leads to losses of about 30-50%, while further degradation in pellets is much slower.

Salts of ascorbic acid and the available coated products do not show a consistent and definite improvement of the stability of ascorbic acid.

3. It is possible that under certain circumstances the vitamin form may have a marked effect on the consistency of the results. The vitamin is supplied in four different forms: Coated with ethyl cellulose, coated with silica crystals and sodium ascorbate.

3. It has been plainly demonstrated that there is an increase in the utilization of ascorbic acid for the recovery of protein in the intestinal tissue in animals affected with Eimeria acervulina. The experience indicates that this increase in the requirements is satisfied from the tissues stores and that it would be necessary to add up to 1000 g per ton in the ration of meals in order to cover the deficit.

4. From hatching until 30 days of age the concentration of ascorbic increases in the plasma and tissues, and so does the synthesis rate per gram of protein. From 31st day onwards these parameters decrease considerably until slaughter.

5. It is necessary to control the sodium levels in the feeds for broilers. Almost all samples of feeds analysed showed sodium contents above the requirements. It is very important to keep in mind that the sodium levels of the finisher ration have to be different from the starter ration.

6. It may be surmised that most probably there may be other factors which may not have received proper attention when formulating the final diet. It is not an exaggeration to state that the majority of the broiler feed manufacturers do not consider the levels of folic acid, biotin, thiamine, and pyridoxine, although they are aware of their great metabolic importance and large economic significance.

In order to counteract the possible interferences, we have increased the level of vitamin C to 500 g per ton of feeds, although we are aware of the fact that this represents an additional rather high cost. However, by this measure, we have been able to control the incidence of the oedema disease by 99% in a further recent experiment carried out in collaboration with another large feed manufacturer in Colombia. Eight thousand birds received pelleted feeds with the addition of 500 g of ascorbic acid per ton. Some 6000 animals receiving pelleted feeds without additional vitamin C. Sixteen thousand animals received mash feeds with no vitamin C addition. The total mortality rate and the one due to oedema at the age of 66 days for the different lots were respectively, 3.55% and 0.21%, 10.25% and 6.8%, 3.94% and 0.

It is interesting to observe how these birds receiving vitamin C addition in the pelleted feeds had improved haematological parameters compared to previous tests. (Figure 3).

We consider that after more than 20 years of continuous speculation about the causes of the avian oedema and its control, these observations may be a very interesting starting point for pathologists, physiologists, nutritionists and other scientists who wish to clarify this important aspect in the animal production — Luis Gonzalo Agudelo, Animal Nutrition District, Ltda. Bogota, Colombia. Photos kindly supplied by Hoffmann-La Roche & Co.
Chickens are not born equal. They’re born delicate and highly vulnerable to the threat of COCCIDIOSIS. But Elanco equips you to fight that persistent enemy with Coban – the product that offers you a consistent line of defence in the presence of COCCIDIOSIS. The benefits are well known – improved weights and feed conversion. 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.

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EIERBEHEERRAADNUUS

Die 147e vergadering van die Eierbeheerraad is onlangs gehou:

1. Besoek aan die Verre Ooste

Die voorzitter, dr. E. Brock, en die assistent hoofbeauftragde, mnr. Ons de Wit, het gedurende die laaste helfte van Oktober die Verre Ooste beëindig met die oog op die moontlike voorsiening van eierprodukte vir die volgende 6 tot 9 maande. Die prysverwagting in hierdie stadium is baie swak. Die Raad het die oog op soveel as moontlik eiers in dopvorm uit te voer vanweë die klein verliese in dopvorm as vir produkte. Die Raad het na verskeie geografiese gebiede, met name in die Asiatiske lugt, gereis. Hierdie reis het selfs as voluit bygedra na die ondersoek na die moontlike beheersprobleme. Die Raad het die volgende besluit genoem:

- Besluit om die moontlike beheersprobleme te ondersoek en die ondersoek om te voorkom dat die prysverwagting in die toekoms nie te swak is nie.

2. Uitbreiding by die Kraalfontein-fabriek

Die kraalfontein-fabriek het besluit neem om die oog op die ondersoek van sekere antibiotika uit eierwit op te voer. Die resormproses is afgehandel en daar word tersoore gedoen met volumes van 10 ton eierwit per week. Die Fabriek het besluit neem om die oog op die moontlike beheersprobleme te ondersoek en die prysverwagting in die toekoms nie te swak is nie.

3. Heffing

Die Raad het besluit om die heffing te verhoog na die volgende maande. Die raad het besluit neem om die prysverwagting in die toekoms nie te swak is nie.

4. Produktiekoos-ondersoek

Die produktyekostes is verhoog, maar die raad het besluit neem om die heffing te verhoog na die volgende maande. Die raad het besluit neem om die prysverwagting in die toekoms nie te swak is nie.

5. Agtertakboutelbing op 1982/83-surplus

Die Raad het besluit om in die volgende maande die surfakse te beheer om die moontlike beheersprobleme te ondersoek en die prysverwagting in die toekoms nie te swak is nie.

6. Surpluskwestie

Die Raad het besluit neem om die moontlike beheersprobleme te ondersoek en die prysverwagting in die toekoms nie te swak is nie.

EGG CONTROL BOARD NEWS

The 147th meeting of the Egg Control Boards was held recently.

1. Visit to the Far East

The Chairman, dr. E. Brock, and Assistant General Manager, Mr Ons de Wit, visited the Far East during the latter half of October with a view to arranging possible future sales of eggs products during the next six to nine months. At this stage the price expectations are very poor. The Board is therefore attempting to export as many eggs as possible in their shells owing to the somewhat smaller losses sustained when exporting eggs in shell rather than in the form of egg products. The Board has also attempted to limit exports still further by providing eggs to feeding schemes in drought-stricken areas at reduced prices.

2. Extentions Kraalfontein factory

Extentions have been completed to the factory at Kraalfontein, in order to extract certain antibiotics from egg white. The preliminary tests have been completed and at present full-scale experiments are being conducted, which involve volumes of 100,000 litres of egg white (cycle) and which yield approximately 10 kilograms of antibiotics. This yield should, however, increase as the process is refined further. The manufacture of these antibiotics should reduce the losses on the sale of white eggs considerably.

3. Levy

The Board is at present investigating the addition of further controlled areas. The question of chick levies has also been referred to a working group in order to assess the principle objectively, in the light of changing circumstances. The Board has resurrected its arrangement to investigate a system of interest on late payment of levies.

4. Investigation into production costs

The investigation into production costs has been completed but is being examined further with regard to information relating to feed costs. The industry will shortly be informed of the final results. This results of the cost survey, corresponds with the calculated costs as per the model which had been developed after the previous cost survey.

5. Deferred payment on 1982/83 surplus

The Board has decided to repay an amount of R371,000 in the form of a deferred payment to producers, who delivered a surplus in the months when the average price of surplus eggs was low as a result of exceeding the surplus quota for the months in question, because the full quota over the year as a whole was not fully utilized.

6. Surplus-quota system

The Board has considered changes to the

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Changes in Labour Legislation 1983:

by P. CARTWRIGHT

At a breakfast session at Millpark Holiday Inn held under the auspices of M.M.F. Prof. Nick Wielahn discussed changes in the Labour Legislation resulting from Bills presented in the present session of parliament. These were:

1. Basic Conditions of Employment Bill B99-83 now enacted in Gazette No 8558 dated 23 Feb 83.
2. Machinery & Occupational Safety Bill B3-83
3. Manpower Training Amendment Bill B1-83
4. Labour Relations Amendment Bill B2-83

In his preamble Prof Wielahn stated that some 98 changes have been made in the Labour Relations Act from 1977 to the end of 1982. The labour relations scene in South Africa is acknowledged to be one of the most dynamic in the world.

The Basic Conditions of Employment Act 3-83 repeals the existing Shops & Offices Act (from page 473)

present surplus-quotas system (such as the transfer of quotas from one month to another) but it has decided that it is too early as yet to determine the effectiveness of the present system. The Board will, however, continue to monitor the effectiveness of the system with a view to making the necessary changes.

3. The Board has also taken note of a letter from the SA Poultry Association regarding co-operation between the Board and the Association and it has decided to invite a delegation from the SAPA to attend a future meeting of the Board in order to clear up any possible misunderstanding.

4. Production Control Committee: Division of Orange Free State and Transvaal in two regions.

The Board has decided to divide the OFS and Transvaal into two regions for production control purposes. During the investigation the inspectorate seemed as extensively as possible with producers regarding the extent of over-border marketing.

5. Production Control Committee: Working committee.

The final report of the working committee which the Production Control Committee appointed to re-examine the whole concept of supply management will be considered on 9 and 10 November. It has also been decided changes in the guidelines should be dated so that no confusion can arise regarding its period of application, and also that these guidelines be made available to the industry on a more regular basis.

The working committee has once again made clear that these guidelines are not binding on the General Manager, that it can be adapted without prior notice, but that any necessary changes must be made prior to the handling of certain situations.

61946 and those provisions of the Factories machinery and Building Work Act, 1941 (Act 23-1941) which relate to conditions of employment:

The Act regulates certain matters relating to the conditions of employment of certain employees and provides for incidental matters.

The definition of “employee” is amended to cover all employees in every undertaking, industry, trade or occupation with the following exclusions, i.e. employees working in farming operations:

employees covered by an agreement, notice determination, order or award under the Labour Relations or determination under the Wage Act where hours of work, remuneration in respect of overtime, public holidays and work on Sundays & Public holidays are concerned, i.e. these Acts take precedence over this one.

The employees excluded were not covered by the Shops & Offices Act. Factories Act.

Clause 1(vii) “Emergency work” includes machinery and provides for overtime.

1 (viii) Office premises where work as defined in the Bill is performed but shall not include premises where such work is performed in or in connection with a factory (viii).

This separates office clerical & factory clerical employees.

Clause 1(xix) Shop is defined.

2 Exclusions — deemed not to be employees: (x) any person employed in or in connection with farming operations.

Clause 2 (1) Maximum weekly ordinary working hours:

(a) security guard or guards shall not work more than 60 hours in any week; (b) other employees not more than 48 hours (no change).

(Clause 3) Security guard 60 hours includes meal intervals.

*The prohibition on night work by women has been lifted.

Clause 4 (1) Maximum daily ordinary working hours in the case of day workers:

(a) Security guard or guards: (i) 5 days maximum 12 hours in any day; (ii) 6 days maximum 10 hours in any day; (b) casual employee 9 hours 15 mins; (c) other 5 day workers max 9hrs 15 mins.

Clause 8 Overtime

1 (1) Max 3 hours in any day and not exceeding 10 hours in any week, except where subsection (2) applies.

(2) a Inspector has approved in writing increase of maximum overtime; b engaged on emergency work.

Payment for overtime Minimum 1 1/3rd times ordinary rate.

Clause 13 Annual Leave

(1) Guard or security guard minimum 21 consecutive days.

(2) Other employees minimum 14 consecutive days.

(2c) Provides for an extra days leave on pay should public holiday coincide with employees leave period.

Clause 14 Sick Leave

(1a) 5-day working min of 30 working days in 36 consecutive month cycle.

(1b) Other employees not less than 36 working days in the 36-month cycle.

*Change in sick-leave cycle factory workers.

During first 12 months employment, entitlement one working day for each 6 weeks worked for 5-day week workers; others, one working day for each completed month of employment.

If payment is made for 2 days without certificate on 2 or more occasions within an eight-week period, the employer is not obliged to pay for sick leave in the next eight weeks unless a certificate is produced.

Termination of Contract

(a) During 1st 4 weeks' employment, one working day's notice.

(b) After 4 weeks' employment — one week's notice in the case of a weekly employee, two weeks for monthly

unless written contract of employment provides for longer notice period extended to cover factory employees.

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Clause 10 defines the duties of the safety representative (s).
(a) Such representative shall report any threat or potential threat to safety of any employee to the employer or safety committee.
(b) Such representative may report in writing to the safety committee or, if no committee exists, to an inspector of any incident leading to death, serious injury, or serious ill health.
(c) "Safety representative" shall not incur any civil liability by reason of the fact only that the failed to do what he is required to do in terms of the Act.

An employer shall take the prescribed steps to ensure that a safety representative performs the duties assigned to him by subsection (1)(a)(i) and (ii).

Clause 11 deals with employers responsibility for establishment of safety committees.

Clause 12 deals with the functions of the safety committees.

Clause 13 deals with the civil liability of safety committee members.

An employer shall take the prescribed steps to ensure that a safety committee complies with provisions 11(1)(a)(i) and (ii) and performs the duties assigned to it by sub-section (1)(a)(ii) of this section.

Clause 13 outlines General Prohibitions.

This Act does put a larger responsibility on the employer and employee for matters pertaining to safety, transferring some of the responsibility from official inspectors.

Clause 16 deals with locking of entrances and movements.

Clause 17 Sub-clause 1 deals with incidents which must be reported to an inspector.

Clause 17 (3) Traffic accidents on public roads are not included in incidents to be reported.

Clause 26 - covers appeal against decisions of inspectors and subclause (2) allows grievance to be taken to the Industrial Court.

Clause 30 Acts or omissions by employees agents or mandators. Lays down responsibilities of employer/employee user/representative or mandatory individually or jointly for acts or omissions which are offences.

Clause 35
This proposed Act is the legal instrument for the protection of the safety and health of people at work. It does not contain details of measures and consequent actions needed to give effect to its objectives.

Regulations must be promulgated in respect of this Act.

Clause 41:
This Bill is intended to replace the Factories Machinery and Building Works Act 1941 and amendments over the years.

Clause 42:
This proposed Act will come into operation on a date to be fixed by the State President in the Government Gazette.

Manpower Training Amendment Act 61-83
Amends section 31 of the manpower Training Act 1981 so as to provide for financial assistance to group training centres by levies. Amends section 49 of the Act to allow the registrar to disclose information on training centres to the Income Tax Authorities.

Labour Relations Amendment Bill 82-83
Amends the Labour Relations Act of 1956. The definition of "employee" re-defined. "Employee" means any person who is employed by or working for any employer and receiving or entitled to receive any remuneration thereon. — there are no exclusions. .

"Labour broker"
"Labour broker's office" are defined.
The labour broker is now regarded as the employer and the relationship between broker and worker is that of employer — employee. The broker rather than his clients has the employer's responsibilities to fulfill.

Section 63. Labour brokers are required to register.

Amendments to section 35 bring unregistered trade unions / employers organisations into the conciliation machinery, subject to qualifications relating to such unregistered organisations.

The Minister is also empowered to establish a Conciliation Board where no Industrial Council exists without consulting the parties when he is of the opinion that a dispute should be settled as soon as possible.

Questioned on points arising from these Bills, Professor Wiedohn replied as follows:
1. Machinery and Occupational Safety Bill is the requirement for a responsible person in the old Bill is replaced by requirement for a safety representative.
2. Drunkenness — Regulations to be promulgated should cover this problem in respect of the provisions of the old Factories Act.
3. Although farm workers are excluded from being members of a registered trade union, they cannot be prevented from being members of a common-law trade union — workers association which is not registrable.
4. Overtime which is not voluntary could be defined as an unfair labour practice.

FARMERS TABLE
Mr. Desmond Luce, Chairman of the County Fair Group of Companies, the largest supplier of fresh chicken to the Western Cape Market, has pleasure in announcing a new venture called FARMERS TABLE. The new company will process further processed poultry and other gourmet lines for the South African Market. This is in line with trends overseas and with County Fair's declared policy of leading the field in product innovation.

FARMERS TABLE will be managed by County Fair's partners in this venture, Geoff Stroeb (ex Woodeavers) and John Stocow (ex Table Top), both of whom have a wealth of knowledge in processed foods.

The new company will operate independently from premises in Ottery and will be responsible for its own administration and distribution. The initial product launch will be Western Cape, followed by the Transvaal and Natal.
REPORT ON SABBATICAL LEAVE—PROF. R.M. GOUS

Professor Gous recently returned from a six-month sabbatical leave from August 1982 to February 1983 at the Agricultural Research Council's Poultry Research Centre, Edinburgh, Scotland. During that time he worked with Dr Colin Fisher in the Department of Nutrition and Environmental Studies.

Here is a brief report by him of his research whilst in Scotland:

Any description of the growth and fatness of growing chickens must take into account food (energy) intake, energy deposition and heat loss. The only theory which incorporates all of these factors has been proposed by G.C. Emmans (East of Scotland College of Agriculture) and forms the basis of the Edinburgh Growth Model.

This proposes that birds only deposit fat, above a certain minimum level, when faced with a nutrient deficiency. As broilers are frequently more fat than the minimum levels predicted by the Model, the implication is that nutritional deficiency is a widely occurring phenomenon.

Three projects were undertaken in my work, with the help of the staff at the PRC in consultation with G.C. Emmans, that were designed to test various aspects of this theory.

Project 1: The maintenance requirement for lysine of adult male fowls.

The factorial approach to describing the intake of amino acids as a function of the maintenance requirement and the requirement for growth requires that estimates of requirements for maintenance be made in the absence of growth. Such estimates can therefore be most successfully made using adult male fowls. A modification of previous methods was used and was found to provide highly satisfactory results regarding the maintenance requirements for lysine of adult birds. Further refinements of the technique have been suggested prior to a full publication of these results. However, an interim report on the technique and the results thus far obtained was presented by Dr C. Fisher on my behalf at a recent meeting of the U.K. Branch of the World's Poultry Science Association.

Once the technique has been finalised, the maintenance requirements for all ten essential amino acids of the fowl can be determined. In addition, it is necessary to test whether a scaling factor should be applied to the maintenance requirements on the basis of body fat, or whether the requirement is a linear function of the body mass of the bird. This is the subject of a future joint project that will be undertaken at the PRC.

The results of these experiments will improve the accuracy of estimation of the nutrient requirements of growing birds, thereby reducing nutrient deficiencies, which result in unacceptability and, excesses, which are costly and uneconomical to the producer.

Project 2: Nutritional effects on the growth and fatness of broilers.

This experiment involved 3,000 commercial broilers (G.S. Marshall), as designed to provide a global test of the proposition that birds only deposit fat over a minimum level when faced with a nutrient deficiency. As a starting point, standard broiler growing feeds, known to support satisfactory levels of broiler performance, were used. To these basic feeds were added either additional protein, additional vitamins and trace elements, or both, in order to increase the concentration of the limiting nutrient(s) in the standard diet. In other treatments the diets were diluted with either starch or cellulose to determine the effect of imbalance and increased bulk on feed intake. The above-mentioned theory also proposes that birds on highcholesterol feeding will not fatten; this proposition was also tested.

The results were most useful in increasing our understanding of the mechanisms controlling feed intake. The growth model accurately predicted the intake by the birds of the various diets, but underestimated the minimum fat levels of broiler females. An adjustment to the method of fat metabolism and deposition will have to be made in the Model according to the results obtained in this and a forthcoming trial which will test further aspects of this subject.

Those birds receiving a choice between a standard broiler diet and a high-protein, high-vitamin and trace mineral balanced grew fastest, proved to be the most efficient converters of food to meat, and had the lowest carcass fat content of all broilers on the various dietary treatments. Choice feeding therefore appears to be a means by which the energy content can restore the amount of carcass fat in the broiler. There appears to be much scope for further experimentation on this subject.

Project 3: The effect of temperature in limiting the amount of food a bird will consume.

The Edinburgh Growth Model is based on the premise that a bird will attempt to eat sufficient of the available food to just meet its requirements for the first-limiting nutrient, which might be an amino acid, vitamin, or a carbohydrate or energy. There are three reasons why the bird is not always able to consume sufficient food to meet its requirements for the first-limiting nutrient: firstly, feed bulk may be excessive, thereby limiting intake; secondly, the food may contain a toxic substance which would effectively reduce intake; and thirdly, there is an upper limit to the amount of heat that a bird can lose in a particular environment. Where energy is not the limiting resource in a diet, and where the broiler is over-consuming energy to meet its requirement for some other nutrient, the bird can either store the excess energy as fat or lose it as heat. There is an upper limit both to the amount of fat that a bird can deposit and to the amount of heat that it can lose to the environment, this latter being dependent on the degree of maturity of the bird, its feather cover (possibility) and the environmental temperature.

To obtain more accurate parameters for predicting the amount of heat the bird can lose (the environmental heat demand), two experiments were conducted in small temperature rooms in which birds were individually caged and reared from two to twelve weeks of age. Two rooms were used in each experiment, the temperature being recorded hourly at six points in each room. Weekly measurements of growth and food intake were made. Each week a predetermined number of birds was killed in order to determine the feather growth and the energy retention to that age. The carcass analyses on these birds have not yet been completed. Preliminary information emanating from these two studies was presented on my behalf by G.C. Emmans at a recent meeting of the U.K. branch of the World's Poultry Science Association.

British Poultry Science Symposium on Reproductive Physiology in birds, University of Reading, September 1982.
Nutrition Conference for feed manufacturers, Nottingham, January 1983.
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Pullmee-Bulletin — November 1983
APPLICATION AND EVALUATION OF FLY-CONTROL MEASURES IN THE EGG-LAYING INDUSTRY

L. Cooke

Resistance among arthropods to modern insecticides has resulted in a search for alternative methods, especially biological control of pests. The application of an integrated fly-control programme provided the most effective, practical and economical system for the cage layer system used in egg production. The programme combines managemental, biological and chemical methods.

The managemental steps included specialised production techniques to ensure natural dehydration of manure accumulations. No chemicals were applied on the manure and natural colonisation by various fly species established within one year on farms studied in the Transvaal. These included Muscididae raptors, Spilangega cameroni and S. endius. The fly species composition found on these farms consists of Musca domestica castanea, Pannina fasciata; a few specimens of Musca stabulans and other families, e.g. Sepsidae, Sphaeroceridae were found.

When laying houses were depopulated, a 35 cm manure pad was left under the cages to facilitate continued biological control during the following production cycle. No manure heaps were allowed outside laying houses. Chemical control was confined to adult flies by aerial and surface treatments whenever undesired increases of fly numbers occurred. The system of integrated control was successful and caused a significant reduction in the cost of chemicals and the elimination of nuisance problems.

Under certain extreme conditions, where biological control could not be established and excessive fly breeding constituted major problems, effective control was achieved with Dimilin (diflubenzuron). Weekly spraying of manure surfaces at a concentration of 500 mg per square metre eliminated fly breeding within 3 weeks. However, this method was considered only as part of an emergency programme, mainly because of high costs.

The biggest single problem encountered in the successful application of fly-control measures was the maintenance of drinking-water supply systems to avoid leaking and wetting of manure.
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STRIKE OR WORK STOPPAGE CONTINGENCY ACTION PLAN

Peter Harvey

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As circumstances differ from company to company and plant to plant, it is impossible to anticipate and plan for all eventualities, so the following is really a broad plan of action intended as a guide in the event of an illegal strike or work stoppage. This model can be used as a basis from which to prepare a more detailed and relevant contingency action plan to cater for your own particular circumstances.

It is suggested that every organisation should prepare its contingency action plan immediately by appropriate discussion with all involved sectors of the establishment so that it can be finalised and be available when needed.

It is suggested that management keep available at all times a copy of the plan so that they clearly know their role in the structure.

1. PREPARATION

1.1 Communications

Make a list of the private telephone numbers of all key personnel within the establishment, as well as those of affected organisations outside the establishment, so that these persons may be informed immediately a stoppage occurs, e.g. factory manager, chief engineer, engineer, production manager, safety/security officer, managing director, general manager, personnel manager, industrial relations manager. SA Police, Dept. of Manpower Utilisation, the Industrial Council if one exists for your industry, the local Fire Brigade, etc.

1.2 Strike Action Team

Appoint a 'strike action' team to comprise most of, if not all, the following persons: managing director, general manager, factory manager, personnel manager, industrial relations manager, security adviser and public relations manager.

1.3 Protection of Property

Survey and prepare a schedule of key areas and arrange to have them manned and adequately protected. Take adequate precautions against deliberate fire-raising of buildings, vehicles, petrol bowser, etc. Investigate the possible need for walkie-talkie communication. Note that it is probably essential that suitable staff should be trained to undertake security duties in the event of security staff joining the strikers.

1.4 Protection of Plant

Prepare a detailed shut-down procedure for plant and power and/or continued operation of key plant i.e. closing down of boilers, generators, etc.

1.5 Protection of Personnel

1.5.1 Plan for the possible evacuation of female personnel, including their transportation.

1.5.2 It is essential that emergency exit routes be pre-planned and detailed and that these are known to personnel before the trouble occurs.

1.6 Operations Headquarters

A suitable room, capable of accommodating approximately 12 persons, e.g. a board room, with direct external and internal telephone links in the event of a switchboard not being manned for use by the strike action team, should be provided. A map of the factory premises should be available in this room and it is probably essential to provide for walkie-talkie communication in the operations headquarters to obviate difficulties in the event of a telephone breakdown.

1.7 Lighting

Ensure adequate lighting in all areas, especially hostels as well as the availability of powerful portable spotlights for use in unit areas if necessary.

1.8 Payment

Make arrangements for the speedy calculation and payment of wages of all employees in the event of their termination of employment. Ensure that:

- sufficient personnel are available;
- sufficient funds are obtainable at short notice (it must be noted that some banks have experienced difficulty in securing funds from banks because of lack of pre-planning);
- there is adequate security for the paymaster;
- operation can be completed in less than 8 hours;
- alternative arrangements are made for wage completion;
- payment takes place outside the immediate factory area, if possible.

1.9 Transport

In the event that employees are housed on company premises, establish whether sufficient transport (buses) can be hired at short notice to transport employees from the premises. Should that be necessary.

1.10 Advising other Plants

Employees of other plants of the company should be informed of the facts of the strike so as to avoid rumours and possible misleading accounts of the event which could lead to further unrest at these plants.

1.11 Checklist

Prepare a step-by-step checklist for easy reference. It must be noted that a detailed plan is essential and that the checklist is simply a point-for-point summary which will facilitate an assessment as to whether or not the machinery of the plan is being adequately implemented at any given time.

2. GUIDELINES FOR HANDLING THE STRIKE

2.1 Establish the Nature and Cause(s)

2.1.1 Endeavour to identify the true leaders or representatives of the strikers and establish the nature of the issue/dispute e.g. is it a wage issue, a grievance, the recognition of a trade union, etc.

2.1.2 Establish the scope area of the stoppage and the real cause(s). Note that the apparent cause is not always the real cause as this may be difficult to articulate.

2.1.3 At this stage one's objective is to gather data, therefore one should not react to statements/demands or make any early concessions.

2.1.4 Show concern for employees' grievances and undertake to investigate their complaints and to discuss them if possible on resumption of work by the employees.

2.2 Advise key Managers and the Authorities

2.2.1 Advise key managers as listed under 1.2 to assemble as soon as possible to co-ordinate, direct and control the strategy.

2.2.2 Advise the Department of Manpower Utilisation of the situation but ask the officials to refrain from intervention as management has the situation under control and can resolve the problem without their assistance. (This is a legal requirement).

2.2.3 Advise the Employers' Association and the Industrial Council if there is one for your industry/area.

2.2.4 Advise the SA Police but request them to be on standby and not to put in an appearance at the premises unless specifically requested. It is important to avoid police intervention if the strikers are orderly and peaceful and you are satisfied that there is little or no risk of damage to property or to personnel as police intervention frequently causes an unfavourable reaction. Strikers tend to become incensed and united against the common enemy. In addition the calling of the police could result in adverse publicity for the company. On the other hand, if strikers are militant and stick welding.

(To page 486)
and their behaviour is riotous, the police should be requested to provide immediate protection to personnel and property, but without intimidating or provoking the strikers.

2.2.5 Record all events as they occur but separate the facts from personnel interpretations.

2.3 Open dialogue with representatives of strikers

2.3.1 Whenever possible maintain the recognised channels of communication i.e. elected employee representative committees. Call a meeting of the committee and if it is apparent that the real leaders of the strikers are not committee members, augment the Committee with a few nominees to be appointed by the strikers. If, as is often the case, strikers reject the employee representative committee they should be asked to elect four or five spokesmen. Every effort should be made to open a channel of communication with the strikers. However, avoid communication with the mob and with unrecognised trade union officials unless there is no other avenue of communication.

2.4 Take precautions

2.4.1 Put into effect your plan for the manning of 'key areas' including buildings, plant, vehicles, petrol stations etc.

2.4.2 Begin the shut-down procedures for plant, steam and electricity and the continued operation of key plant. Advise suppliers to discontinue deliveries.

2.4.3 In the event of militancy or rioting, evacuate female personnel. Avoid racial conflict or confrontation.

2.4.4 Endeavour to provide protection against intimidation of employees who do not wish to support the strike and where possible provide food and accommodation for them.

2.4.5 It is in the company's best interests to cooperate fully with the Press and to provide them with factual information to ensure that factually reporting and to avoid adverse publicity. All enquiries should be referred to the responsible manager and should be instructed to refrain from passing an opinion even if requested to do so by a reporter.

2.5 Select Strategy

2.5.1 Reduce the dispute to one clear and concrete issue and identify the real cause.

2.5.2 Consider making a small concession and appeal to reason.

2.5.3 Advise strikers that their not being at work means they will not be paid for that time.

2.5.4 Consider the possibility of laying off the strikers in order to allow a cooling-off period.

2.5.5 Keep your options open and be flexible at this stage. Endeavour to preserve relationships. TALK, TALK, TALK AND KEEP TALKING.

2.6 Take action

2.6.1 Management's actions throughout the strike must be positive and definite and the strikers must be left in no doubt that what management says it will do, it will do.

2.6.2 Under no circumstances should strikers be given the impression of panic by management. Act calmly but firmly at all times. Keep it low-key and avoid a confrontation.

2.6.3 Communicate your decision to the representatives of the strikers and allow a short time for strikers to reach a decision. If at all possible allow for 'face saving'.

POSSIBLE OPTIONS — SIT IT OUT OR TERMINATE OR CONCEDE
(Note — Other options or combination of options may exist — management judgement here is very important.)

2.7 Sit it out

2.7.1 This allows a cooling-off period and an opportunity for management to take stock. Is a principle at stake, how important is that principle?

2.7.2 Increase the pressure on the strikers, e.g. by emphasising possible loss of service benefits. Repeat your offer and allow time for them to consider.

2.7.3 Assess the strikers' ability to hold out and consider the possibility and effects of consumer action.

2.7.4 Is the real issue an inter-union dispute or a politically motivated issue? Is the solution within your power? If not, one can only sit it out.

2.8 Terminate Strikers

2.8.1 The termination of workers should only be a last resort. Remember that when workers strike they are not saying that they wish to terminate their contracts with the company. It is an endeavour to draw attention to a perceived serious grievance and to have it resolved. Termination of employees does not resolve their grievances and it invariably engenders public and media and possibly consumer support for the strikers.

2.8.2 Termination changes the nature of the dispute for the 'issue' then becomes one of the re-employment of the workers. It also leads to a confrontation situation which seldom does either party any good.

2.8.3 Termination should not be resorted to too early in the process of resolving the dispute, nor should such a decision be conveyed when strikers are emotionally charged as is sometimes the case.

2.8.4 If it is decided to give strikers an ultimatum either to return to work or face dismissal, this should be done in such a way that the workers dismiss themselves. Example say: 'Should you not return to work by the appointed time, I will have no option but to assume that you wish to give me notice of your desire to terminate your employment.' The ultimatum should be issued in writing, stating:

(a) That their grievances will be thoroughly investigated and discussed through the recognised channels, i.e. the employee representative committee;

(b) That management will not be coerced into anything — their demands will therefore not be considered until they return to work;

(c) That they are to return to work by a particular time, failing which you will assume that they wish to terminate their employment.

Such an ultimatum may provoke violence so the police should be forewarned of your intention so as to afford them sufficient time to get reinforcements should they consider it necessary.

2.9 Concede

2.9.1 Consider the long term consequences and the costs of conceding. Will it cost more to agree or to disagree?

2.9.2 Is the grievance legitimate and justified and was management at fault? If so, it would probably be in the Company's interest to concede rather than to try to blunt one's way out of the situation.

2.9.3 If the issue is one of recognition of a trade union and the union is able to prove representativity, it would be advisable to agree in principle to the recognition of the union and to agree to negotiate the terms of such recognition on condition strikers return to work.

3. AFTER-STRIKE ACTION

3.1 Undertaking

Ensure that whatever action management propose is implemented in every detail and with a minimum delay. If a full investigation was agreed to — the findings thereof, together with the management's proposed action should be communicated to all employees through the usual channels and the communication should be reinforced by using, for example, notices on walls.

3.2 Work relationships

Work should be resumed as soon as possible and if possible supervision should be asked to visit considerable tact and diplomacy to achieve normal work relationships. Bearing in mind that employees will be disheartened, resentful, antagonistic and unco-operative for a while. Care should be taken to avoid incidents which would spark off a recurrence of disturbances.
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Plumtree-Bulletin — November 1983
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AMBER-LINK leëhene produseer deurgaans meer as 264 (22 dosyn) eiers per hen behuis gedurende 1 jaar lûsklus. Eiergetalle is steeds die sleutel tot winsgewendheid.

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Voeromsetting van 2,8 kilogram voer per kilogram eiers kom algemeen voor. Dit beteken die produksie van 1 gemiddelde AMBER-LINK eier vir die verbruik van slegs 156 gram voer.

3. EIERGROOTTE
Teen huidige Suid-Afrikaanse bemarkingsprye verhoog die AMBER-LINK se eiergrootte winsgewendheid.

4. LEEFBAARHEID
Jaarlikse trop mortaliteite van slegs 4-6% kom algemeen voor. Voor die verskyning van die AMBER-LINK was wrekte in Suid-Afrika gemiddeld 12% en meer.

5. UITSKOTGEWIG EN VERING
Die AMBER-LINK produseer onder Suid-Afrikaanse kondisies goed geveerde uitskothenne van die hoogste kwaliteit.

6. BRUIN EIERS VAN UITSTEKENDE KWALITEIT
Feitlik elke eier geproduseer gedurende en tot 52 weke van leë is bemarkbaar en is dit die kleur waaraan die huisvrou al hoe meer voorkeur gee.

7. TEMPERAMENT
Beide bestuur en werkers geniet dit om met die AMBER-LINK hens te werk; ook is sy dié hens met uitsonderlike vergewende kwaliteite.

8. NAVORSING
Die AMBER-LINK word gerugsteun deur Suid-Afrika se mees suksesvolle tegniese span.

9. GENETIKA
Beduidende verbeterings word deuroplopend ingebou. Môre se hen is vandag tot u beskûking.

10. DIENS
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3.3 Communication

If it was agreed to negotiate with employees, it is advisable to allow a 'cooling-off' period before commencing discussions with either nominated spokesman or the representative committee. But this will be dependent to a large extent on objective judgement of the situation at any particular time, and management must not be seen to be 'dragging its heels' on this aspect of agreement. If the consultative committee was rejected during the strike endeavours to re-establish the committee as the official channel of communication as soon as possible. Meet with representatives of other employees not involved in the strike to put them fully in the picture regarding management's actions and proposed actions.

KEY FACTORS

- Identify the true representatives/leaders
- Establish nature of dispute, e.g. wages, grievances, recognition
- Establish real cause(s) of stoppage
- Establish scope/areas
- Gather data — don't react
- Don't make early concessions
- Show concern for their grievance(s)
- Undertake to investigate and discuss on resumption

- Advice key management
- Assemble strike action team
- Advice Department of Manpower Utilisation
- Advice Industrial Council and SA Police
- Record/chronicle events as they occur
- Keep all management and supervision fully informed

- Maintain recognised channels of communication
- Hold meeting and augment committee if necessary
- Avoid communication with the mob
- Request resumption of work (first hour critical)
- No work, no negotiation (if possible)
- Prevent spreading of strike
- Avoid threats, retaliation of ultimatum
- Don't change nature or widen scope of dispute

- Shut down plant
- Protect personnel and property
- Protect workers against intimidation
- Provide food and accommodation
- Handle the press
- Advise suppliers
- Ensure that essential services continue

- Reduce to one clear issue
- Identify real cause(s)
- Appeal to reason
- Consider small concessions
- No work, no pay!
- Be positive and definite
- Avoid hasty action/panic
- Avoid confrontation
- Keep low key
- Consider lay-off
- Keep options open — be flexible
- Preserve relationships
- Talk, talk, talk and keep talking

- Allow cooling-off period
- Possible principle at stake?
- Increase pressure e.g. loss of benefits
- Repeat offer and allow time to consider
- Assess strikers' ability to hold out
- Consider possible consumer action
- Inter-union dispute?
- Politically motivated?
- Creates confrontation
- Not too early in the process
- Not when strikers emotionally charged
- Give ultimatum — fire themselves

- Consider consequences
  (a) Company image
  (b) Public and consumer support
  (c) Will grievance(s) disappear?
  (d) Changes nature of dispute
- Justifiable grievance(s)
- Recognition — proven representivity

- Consider long term consequences
- Consider costs
- Management at fault
- Ensure undertakings are implemented
- Exercise tact in work relationships
- Maintain ongoing communications with representatives of employees (not part of strike)
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The inherent characteristic of egg marketing

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- Discrepancies in supply and demand for eggs.
- Excess daily production.
- Short-term fluctuations in demand (holidays, weekends).
- Festivals, etc.
- Perezible nature of eggs, etc.

Viewed against this background, it can be said that the basis of this exercise is to devise appropriate statistical machinery to forecast the always present excess supply of eggs.

Forecasting needs in different environments

The economic environment within which egg producers operate varies from totally free enterprise to completely controlled systems, with variations in supply control, supply price control, marketing, price control, etc. The crucial factor which demands attention is the management or non-management of supply. Because in a free environment the aim is to determine the extent of surplus supply while in a supply-controlled environment it boils down to a mere calculation of what the extent of future supply should be.

For the sake of illustration, I would like to compare the forecasting needs in a free environment, with those in a supply-controlled environment.

Free environment

Each producer can be described as an entity on a micro-level. The sum total of the production of all these entities equals the total supply on a micro-level. Each entity is independent of the other or the total in its decision-making. On the other hand, the extent of total supply is dependent on individual decisions on the micro-level. While the micro-level outcome results in no control over the micro-level decisions, it can only attempt to anticipate the outcome of these decisions. To plan future production each entity will have to acquire knowledge of -

- his own production and total production, etc.
- The rule of the matter is thus to forecast future total production. Quite a few high proportion risk factors will have to be taken into account to determine this, such as:
  - Attractiveness of the industry to new investors (in view of profitability forecast).
  - Reaction of other micro-level entities on demand prospects, future product process, past outcomes, prices of competing producers, etc.
  - Export markets.

Demand forecasting is the primary input in this forecasting process. Only after demand has been forecast can total supply be anticipated in view of, inter alia, the above-mentioned factors.

To suffice it to say that a comprehensive study of the above would require consideration all the relevant implications are beyond the practical capabilities of the average producer.

However, a central organisation on the micro-level could analyse all these to project the possibility and extent of over- or under-supply. Considerable thought should be given as to how this information should be applied to serve the industry as a whole. Until we open up to correction it will still remain the prerogative of the micro-level (individual) to decide whether he is going to accept micro-level projections, as applicable to his own circumstances.

Controlled environment

I would like to define a controlled environment as one where production is centrally planned (by means of quotas). While marketing and price fixing are free for all.

A central statistical body exercises control over micro-level supply by manipulating priority allocations on the micro-level. Demand forecasting is then the true crux of the forecasting process in this instance. Once this has been achieved, maximum output on the micro-level is fixed in terms of quotas. Limited risk factors such as day production, seasonal adjustments, surplus hatching eggs, etc. are applied in this process.

From the above it is clear that there is a difference in approach between the two systems and this is of cardinal importance in compiling forecasting techniques.

To summarise:

In any environment, demand forecasting forms the basis of the forecasting process. Once this has been done, each environment applies it according to its own needs.

The free environment process primarily entails an assessment of micro-level outputs with the aim of projecting micro-level supply and adjusting the difference between total output.
supply and demand. In the controlled environment, the demand is projected while supply is adjusted accordingly. Strictly speaking, therefore, demand forecasting is one of the inputs in the process of production forecasting in the free environment, while in the controlled environment demand forecasting is the ultimate. Once this has been achieved, production is calculated as consumption plus a certain limited amount of overproduction in terms of prescribed goals, which is then subdivided to individual quota holders in individual farms.

In other words, based on an anticipated demand (as the primary input in any forecasting process) the free enterprise forecaster attempts to forecast what future production will be, whereas his colleague in the controlled environment adjusts future production to meet anticipated demand. The hub around which the forecasting wheel turns is certainly that of demand forecasting. I would like to emphasize a few points regarding the South African approach to demand forecasting.

DEMAND

Demand trends should be analysed in two phases, namely long-term trends and medium-term fluctuations. The long-term trend defines the goal not only for the egg industry but also for various secondary industries (cage manufacturers, feed millers, packaging manufacturers, etc). Once this has been established, half the battle is won. All that remains is to identify causes of fluctuations in this trend on a year-to-year basis.

Long-term trend

The long-term trend in demand (5 - 10 years) dictates the infra-structural planning in the producing industry. This trend is strongly correlated with the socio-economic status of a given population group. This basically entails an accelerating growth phase in demand during the early stages of socio-economic development, followed by stagnation and finally a physical drop in demand during the later stages of socio-economic development. For instance the South African population is at present in the phase where demand is growing in accordance with increases in socio-economic development. According to various parameters South Africa's status is at present between the first and third world. The infra-structure of a given industry should be geared to cope with changes in the long-term demand trend.

Further, the level of sophistication of the producing industry is another important determinant in structuring the producing industry over the long term. For instance, South African egg demand over the past 30 years has doubled every decade and indications are that it will double again during the '80s. Productivity, on the other hand, improved from 190 eggs/hen/year during the early '70s to 270 eggs during the early '80s. A growth of a further 10 - 15 eggs/hen/year is foreseen through the '90s. Assuming linear growth rates, the following picture could be drawn.

<table>
<thead>
<tr>
<th>Year</th>
<th>Layers and productivity</th>
<th>Average growth per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>70</td>
<td>170 eggs/hen/year</td>
</tr>
<tr>
<td>1980</td>
<td>180</td>
<td>270 eggs/hen/year</td>
</tr>
<tr>
<td>1990</td>
<td>280</td>
<td>385 eggs/hen/year</td>
</tr>
</tbody>
</table>

The impact of this kind of changes on the structural planning of, for instance, the breeding sector of the poultry industry is clear. Various other aspects, such as feed ingredients, selling capacity, veterinary, cage manufacturers, etc. could be discussed to illustrate the importance of long-term demand forecasting and its bearing on the infra-structure of the industry.

Medium-short term fluctuations

These fluctuations are broadly defined as deviations from the long-term trend (assumed to be linear) over a period of 4 - 18 months. These deviations could be caused by a variety of factors but I would like to highlight briefly only a few points pertaining to the South African scene:

- Egg demand is price-inelastic at least over the medium/short term. The coefficient of elasticity for SA egg demand over the past two years was 0.44 (A coefficient of below 1 is regarded as inelastic in statistical terms). Egg demand is income-elastic. Egg demand does not follow economic (business) cycles per se very closely. This probably results from the status of the South African egg demand on the socio-economic curve. Stronger relationships appear to exist between egg demand and:
  - consumer disposable income (measured by the GNP), and
  - unemployment (measured by size of labour force).

Without disregarding the importance of identification (and quantification) of these and other causes of medium/short-term fluctuations, it can be said that the South African philosophy centres around accommodation of short-term fluctuations in a secondary system, rather than attempting to adjust supply primarily (by means of short-term forecasts) to follow these fluctuations closely.

PRODUCTION FORECASTING

Perhaps I introduced the subject of production forecasting almost tautologically but I wanted to motivate these aspects very clearly.

Production forecasting is applicable in a free environment only. Demand forecasting is the key issue and one can hardly discuss production forecasting in isolation.

In a controlled environment it entails a simplistic calculation of targeted production based on projected demand. Dissemination and application of production forecasting information in a free environment is of cardinal importance and should perhaps be defined before forecasting techniques are devised because it could have an important bearing on the approach. For instance, is the goal to project prices with demand and supply forecasts as input data, or to project production with demand and prices as input data? I would suggest that prices be projected to stimulate or curb intentions to produce, but once again I feel that this should be referred to discussion groups for clarification.

All that remains, therefore, is to illustrate briefly how production and hence the number of layers required, can be calculated in a controlled environment (assuming that demand is given.)

Calculation of production in S.A. requires the following input data: projected demand, determination of a buffer reserve, adjustments and non-day production.

A consumption forecast over medium-term is assumed as given.

In the South African circumstances a certain buffer quantity is added to consumption to allow for the following: sufficient supply of all sizes, stock rolling for short peak demand, internal demand for "sophisticated" egg products, and import of fresh eggs into South Africa is impractical.

In practice an own-production of 5 to 6% is adequate to allow for these.

Adjustments

Adjustments are made for certain factors which influence supply either on a cyclical or a constant basis. The most important of these are:

- Surplus purchases by the S.A. Egg Board, which are a very typical pattern within years — high volumes during August — November, low volumes during mid-February to Christmas (stock rolling by producers). January is again characterised by high volumes owing to carryovers from the hatching season. From February onwards to June surplus volumes are low, with extreme lows during March, April and May.

Surplus hatching eggs

The breeding industry in South Africa consists of 1.5 million hens of which 1.2 million are broiler breeders. A small but consistent surplus of 8% hatching eggs are being sold on the commercial egg market. Owing to its consistency, total supply is adjusted on a quarterly basis to allow for supply from this source.

Backyard production

Although everybody acknowledges the existence of this source of supply, the extent to it is almost completely unknown. However, data has been taken to assemble information on these small producers. In the meantime it is assumed that these layers are completely ignored.

(To page 506)
DON'T BE FOOLLED BY FANCY GRAPHS

Our computer has shown us that:

FEED CONVERSION
FEED CONSUMPTION
EGG SIZE
TOTAL EGG MASS
LOW MORTALITY
AGE AT POINT OF LAY

are all individually just as important as egg-numbers when determining profits

LOOK AT THE TOTAL PROFIT IE THE BOTTOM LINE!

THEREFORE BUY TOKAI PLUS AND ISA BROWN PULLETS
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Spartan Cages has a wide range of incubator, brooder, maximum and minimum thermometers for every farmer — as well as domestic varieties for farmers' wives' kitchens! The attractively-priced thermometers and humidity meters can be seen at Spartan's showroom in South Street, Halfway House (opposite the hotel), or telephone (011) 805-2151/9 or write to Box 136, Halfway House 1685 for details.

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With Chore-Time, you virtually eliminate feed waste. Because Chore-Time's programmed system delivers fresh, unpacked-over feed at predetermined intervals - and allows the birds to clean up feed between cycles.

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INTERNATIONAL POULTRY PRODUCTION SEMINAR

The British Council representative at the British Embassy in Pretoria informed us of a Poultry Production International Seminar which is to be held between 8 and 20 July 1984 in Newport, Shropshire.

The aims of the seminar is to increase members' knowledge of modern poultry production methods and provide a forum for in-depth discussion of current technical developments. Particular attention will be focused on the potential contribution of current research and development to commercial practice in poultry production.

The Director of Studies will be Mr. R.G. Wells, Head of the National Institute of Poultry Husbandry at Harper Adams Agricultural College, Newport, Shropshire, where the seminar will be held.

New techniques and thinking will be introduced and discussed in group tutorials. These will be integrated with visits to commercial poultry farms, related industries and research centres. There will also be practical demonstrations on a wide range of production units at the National Institute of Poultry Husbandry and the adjoining Harper Adams Poultry Husbandry Experimental Unit. Participants will be given the opportunity to discuss developments in their own country of origin.

Topics to be covered include:

Introduction:
- Structure and organisation of modern poultry industries
- Breeding
  - Genetic improvement
  - Evaluation of stocks for egg and meat production
  - Operation of large-scale breeding programmes
- Hatching
  - Physical requirements of incubation
  - Modern hatchery practice
  - Incubation fault diagnosis and hatchery hygiene
- Nutrition
  - Nutrient requirements of poultry
  - Ingredients for poultry diets and feeding programmes
  - Developments in feeding stuffs concerning industry

Environment:
- Temperature and ventilation requirements of poultry
- Lighting requirements of poultry
- Mechanical systems in poultry production
- Health and welfare
  - Developments in disease control
  - Relationship of disease to husbandry
  - Welfare of stock under intensive systems of production

Product quality and marketing
- Egg quality and developments in egg grading and packing
- Poultry meat quality and developments in poultry processing
- Economics and production systems
  - Economic efficiency of the modern poultry industry
  - Modern systems of egg production
  - Modern systems of poultry meat production
- Potential contributions to the programme will include:
  - Dr. C.G. Belshaw, Egg quality specialist, Harper Adams Poultry Husbandry Experimental Unit
  - Mr. D.A. Burton, Agricultural economist, University of Manchester
  - Dr. D.R. Charles, Environment specialist, Agricultural Development and Advisory
  - Dr. C. Fisher, Service Nutritionist, Poultry Research Centre, Edinburgh
  - Mr. P.W. Lang, Practising veterinary surgeon
  - Dr. D.L. Pollock, Geneticist, Ross Breeder Ltd.
  - Staff from the National Institute of Poultry Husbandry

Qualifications of members. The seminar is designed to interest qualified agricultural and poultry production specialists who are actively involved in large-scale commercial enterprises, advisory and extension services, lecturing or research and development projects in the poultry industry.

Numbers. There are vacancies for 20 members.

Fee. £735 (see note opposite).

Accommodation. This is a residential seminar. Members will be accommodated at Harper Adams Agricultural College.

Applications. Applicants are advised to apply before 20 March 1984.

The British Council has been developing its successful programme of short specialist courses over the 30 years as part of its role of encouraging cultural exchanges between Britain and other countries. Distinguished British specialists, many with world-wide reputations, are invited to direct these courses and are responsible for their professional content.

The aim of each course is to enable a small selected number of academic and professional people to learn about recent developments relating to their work both in Britain and abroad and to participate in international discussion at a high level. If you are interested contact the British Embassy.

ISRAELI APPROACH TO ORGANIC FERTILISING MORE SCIENTIFIC

Organic fertilising is gaining new momentum in Israel and is now being approached in a more scientific manner, according to Mr. Haim Venster, deputy-director of the Fertiliser Society of South Africa.

Mr. Venster acted as tour leader for a group of about 150 South African farmers who recently returned from Israel after a visit arranged by Groekrags Organic Fertilisers of Meyerton, Transvaal. After their visit to Agrotech '83 in Tel Aviv, the third largest Agricultural Show in the world, the farmers went to the Schacharim plant in the city where all the pioneer work on the fertilising of manure was done. Visits were also paid to various kibbutz farms where organic fertilisers have been used for years on different crops.

Mr. Venster said he was impressed with the way in which the Israeli farmers totally utilised their natural resources. Organic waste obtained from diluted sewage is used for irrigation purposes, and kraft and chicken manure for fertilisation.

"A new technique is the pelleting of kraft and chicken manure in various proportions," said Mr. Venster. The pioneers of this aspect, at the Schacharim factory in Tel Aviv — the largest in Israel for the manufacturing of organic fertilisers — were Mr. Eliasha Kalai and his father, Mr. Kalai recently visited South Africa.

According to Mr. Venster the Vincar Research Institute in Israel recently completed a research programme relating to the use of organic fertilisers and its value to agriculture. A report on the results will soon be released, and this will have an important effect on agriculture in the future.

Mr. Benny Larr, economic and trade counsellor at the Israeli Embassy in Pretoria and director of the Israeli government's Trade Centre in South Africa, made the arrangements for the South Africans' visit to Agrotech '82. He said that nearly 430 South Africans registered at the show. This was the largest number of South Africans ever to visit the show.

Some of the members of the tour group were caught here (some napping) by our photographer just after their arrival at Jan Smuts after a tour of Israel. They are from the left: Messrs. Johan Potgieter, national sales director of Groekrag Organic Fertilisers who arranged the tour to Israel, Johan Mulder of Douglas in Northern Cape, Haim Venster, Deputy Director of the Fertiliser Society of South Africa who acted as tour leader, Danie Harmse of Intertrans travel agency who organised the tour, Saskie Smith of Milnerton and Sandy Ngcobo of Transnet.
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Spartan will get your complete poultry or pig project off the ground — from designing it to seeing it in operation.
And to start it off, we can now get a quick decision on Barclays backed finance at highly competitive rates.

Spartan does it all for you
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The Staalkat range consists of:
- Graders with handpacking: 3,000, 6,000, 9,000 and 14,400 eggs/hour.
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Ask our experts to advise you in your specific case.

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Reg Schütte, Columbit (Pty) Limited, P.O. Box 25759, DENVER 2027 or 437 Main Reef Road, Denver Johannesburg Telephone 615-7890 (011)
EPS CHALLENGES THE PULP EGG CARTON

In 1972 it is estimated that over 95% of all retail egg packs sold in the United States were of the pulp variety. By 1982, polystyrene egg cartons represented over 75% of retail packs — and their market share is still growing.

The national marketing manager for the largest division of Bakke Packaging, surveyed perishables pre-packaging in Europe, the United States and Australia during last year. Though it was not part of the study, it was noticed that whereas in most aspects of super-marketing, South Africa is ahead of the best, egg merchandising was an obvious anomaly.

After surveying the opinion of major egg producers in South Africa, it was solidly confirmed that there is a real need for better variety, quality and graphic display.

Various market tests have been undertaken with EPS (expanded polystyrene) egg cartons in South Africa as far back as 1976. However, the major problem has been poor market competitiveness and quality due to the market size not justifying a fully dedicated egg carton plant.

Recently, a detailed study on egg packaging was conducted in the United States. There the market is dominated by the EPS one dozen pack. Available in pink, blue, green, yellow and white, the packs are most printed on two colours on the top only, although side and inside printing is becoming more common and four colour printing on the top is possible.

Protection performance comparison undertaken by the United States Department of Agriculture was reported in the May 1983 edition of poultry tribute. They concluded that individual pack design and choice of master container are both more important than whether the egg carton is made from pulp or EPS.

Bakke are in the process of commissioning a full scale EPS egg carton plant, including the most sophisticated egg carton printer available. The printer alone represents an investment of over R250,000. The plant is scheduled for trials during December 1983 and full production from January 1984.

COLUMBIT GETS STAALKAT AGENCY

The following news was received from Staalkat b.v.

"We are happy to announce the appointment of Columbit (Pty) Ltd, one of South Africa’s leading companies in the food and beverage industry as sole agents for Staalkat in your country.

Columbit are also agents for Stark PMT Poultry Processing Equipment and pass reform incubators and it is therefore an advantage for both, us and for them, to have Staalkat included in their range to supply the poultry industry with egg grading and packing machines.

Contact Addresses:
Cape Town:
Columbit (Pty) Ltd, Mr R. Churchyard, PO Box 3777 Cape Town 8000, Tel: 511461 (321), 100 Voorthekker Road, Salt River, Cape Town, Johannesburg:
Columbit (Pty) Ltd, Mr R. Churchyard, PO Box 3777 Cape Town 8000, Tel: 511461 (321), 100 Voorthekker Road, Salt River, Cape Town, Johannesburg
Yours faithfully,

STAAKAT B.V."
Both are 35 days old. The one on the right has a head start, thanks to protection from Gumboro Disease conferred by Maternal Emulsion Vaccine given to the breeder hen.

Gumboro (Infectious Bursal) Disease is recognised as a serious threat to broiler flocks. The disease affects the performance of growing birds and predisposes them to bacterial and viral infections. It exerts this effect by impairing the birds' natural immune mechanism; this also adversely affects their ability to respond to vaccination against other diseases.

Vaccination with Maternal in at point of lay of parent stock which has been previously “primed” with live vaccine can protect chicks and show an improvement in performance of up to 8% (Wyeth P.J., O'Brien J.D.P., Cullen G.A. Av. Dis. 25.1.228).

This programme produces a uniformly high level of passive immunity in the chicks. Research has shown protection from clinical disease can persist until the chicks are at least 42 days old. As the disease is normally only a serious problem during the first four weeks of life, immunity induced in this way may, in many broiler units, be sufficient to render vaccination of the chicks themselves unnecessary. Maternal is presented in sachets of 250ml and bottles of 100ml for easy storage and handling.

Better Performance with Maternal Emulsion

Another quality vaccine from Evans Animal Health
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Spartan's cooling solution

- High efficiency fogging by atomizing moisture into billions of aerosol-size particles
- Eliminates heat stress mortality and production losses, improves feed conversion
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- Expert construction of complete fully automatic houses for squares, brooders, incubators, etc.
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- Professional advice and genuine after-sales service

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Efficient planting machine

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Quality bulk feed bin

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Natali Hi Lay Products. Tel: (031) 72-4541
Cape: R. Barlow Equipment Co. Tel: (021) 96-3067
Who's who in the SA Poultry Industry

WHO'S WHO IN THE POULTRY INDUSTRY

In a previous edition we tested the reaction of industry members regarding either the inclusion of a column in this magazine WHO’S WHO IN THE POULTRY INDUSTRY or alternatively the publication of this information as a loose insert in this magazine.

From the reaction received, it became clear that the information required must be structured better. Readers are kindly requested to complete the following form and send it, along with a recent photograph, to The Editor, Poultry Bulletin, P.O. Box 1132, HONEYDEW, 2045, as soon as possible.

NAME (Individual) \nADDRESS \nAGE \nTEL

COMPANY (Name and field of activity --- the latter in very brief telegraph style)

POSITION

(IF a producer, what sized unit?)

(WHAT produced --- eggs, day-old chicks, broiler, contract hatching egg producers?)

PREVIOUS POSITIONS HELD IN POULTRY INDUSTRY

---

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FOR SALE

BROODER EQUIPMENT

4 LINES CHORETIME FEEDERS, 56 METRES LONG, 3 LINES CHORETIME FEEDERS, 32 METRES LONG, PLASTIC TUBE FEEDERS, PLASTIC DRINKERS, GAS BROODERS.

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SMALL LAYING UNIT REQUIRED TO BUY IN PIETERMARITZBURG/ HOWIC VICINITY WITH 8 000 X 10 000 BIRD PERMIT. PURCHASE OFFERED ALONE WILL BE CONSIDERED. ANSWERS PLEASE TO

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---

Justin Hookins.
Managing Director of African Turn Key, a hatchery maintenance turn key equipment installation company, which distributes Jamesway incubation systems in Southern and East Africa.

Denis McQuoid.
Technical Representative for African Turn Key responsible for Jamesway installations and general hatchery trouble-shooting and maintenance.

Plumtree-Bulletin — November 1983

---
What makes our pad cooling system so special?

The Big Dutchman pad cooling system provides a healthy and comfortable environment for achieving optimum bird performance in hot and dry areas. The system is based on evaporative cooling.

Outside air flows through wetted pads into the poultry house. Cooling takes place as a result of intensive contact between air and water. So far, nothing special. However:

- the sliding baffle
- for selection of the "summer" and "winter" ventilation position
- the high level air inlets with controllable baffles
- which enable a controlled airflow to pass freely over the multiple-tier cages
- which eliminate the need for additional fan jet systems
- the pad location
- inside a prefabricated corridor protecting the pads against direct sunlight, dust and sand
- the easy installation
- against new and existing concrete walls or prefabricated poultry houses.

All these make the Big Dutchman Pad Cooling System so special.

Big Dutchman

Big Dutchman (South Africa) (Pty)Ltd., P.O. Box 276, Edenvale 1610, Tel. 609-2160, Telex 4-20890 sa
NEW FINANCE COMPANY AWARDS MORE THAN R3,3-MILLION

Spartan Cages Finance (Pty) Limited, the first company in South Africa specialising in providing money for agricultural purposes, has already granted its customers loans worth more than R3,3-million.

The company, which was founded as recently as the end of May, is a joint venture between a major supplier to the poultry industry, the Spartan Cages Group, Barclays National Industrial Bank (Pty) Limited and the Southern Life Association.

It was formed to award loans in the agricultural sphere especially in the fields of poultry, pig and greenhouse produce.

Martin Krawitz, joint managing-director of the Spartan Cages Group and Spartan's representative on the finance company's board said that besides its understanding of the special needs of the agricultural sector, the new company's major advantage was that it could process applications much more quickly than other institutions.

"Besides this we are able to offer our customers more attractive rates. Offshore financing is another speciality of ours," Mr. Krawitz said.

Mr. KEN RUDD MOVES TO U.S.A.

Mr. Ken Rudd, Manager of Salisbury S.A. Veterinary (Pty) Ltd., Veterinary Division, has been promoted to a new position in Salisbury Head Office in Charlestown, Iowa, U.S.A. The position is Product Manager for all Salisbury's poultry products in the U.S.A. and world-wide. He will also base with DuPuy, Salisbury's sister company in Holland and with the parent company, Solvay, in Brussels.

One of the main objectives in forming the new product group is to link Salisbury's Research, Production, Marketing Promotion and Technical Services into a cohesive unit. This will ensure that the latest trends from the industry reach the research area faster and allow work to be carried out on new products not only in the U.S.A. but in other advanced countries such as South Africa.

Mr. Dave Saayman, General Manager of Salisbury S.A., said: "The technical services of Salisbury's South Africa Company will be helped by the move as it is the intention that Mr. Rudd will re-visit customers in South Africa on a regular basis." Selected experts will be brought from the U.S.A. and Europe to visit the local industry and, besides giving the latest information from abroad, will be able to feed the South African needs into head quarters. Mr. Rudd will make his first return visit to South Africa in December 1983.

TITLES OF ABSTRACTS RECEIVED FOR PRESENTATION AT WPSCA World Congress
Helsinki

Dr J.J. Joubert — A COMPARISON OF SLAUGHTER CHARACTERISTICS OF DIFFERENT BROILER BREEDS

Prof. A. Hayes — TRUE LYSINE DIGESTIBILITY AND AVAILABILITY OF NORMAL AND HEAT DAMAGED FISH MEAL BY COLOSTOMIZED AND DECOLOSTOMIZED ROOSTERS

Robert Gous — ENVIRONMENTAL HEAT DEMAND OF CHICKENS GROWN AT HIGH TEMPERATURE

Robert Gous — THE MEASUREMENT OF THE AMINO ACID REQUIREMENT FOR MAINTENANCE OF ADULT COCKERELS

Michael Oliver — THE EFFECTS OF QUANTITATIVE FEED RESTRICTION ON THE PRODUCTIVITY OF PEKIN DUCKS

Michael Oliver — RICE BRAN AS AN ALTERNATIVE TO MAIZE MEAL IN DUCKLING DIETS
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 live-weight of 2.37 kg. (5.23 lb.) at 51.7 days with a feed conversion of 2.36 : 1 and livability of 97.36%.

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.

Broiler Performance

<table>
<thead>
<tr>
<th>Days</th>
<th>Males</th>
<th>lb</th>
<th>Females</th>
<th>kg</th>
<th>lb</th>
<th>As Hatched</th>
<th>kg</th>
<th>lb</th>
<th>FCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>1.32</td>
<td>2.90</td>
<td>1.10</td>
<td>2.43</td>
<td>1.21</td>
<td>2.66</td>
<td>1.80</td>
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</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.

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Staalkat offers you a complete range of reliable, accurate and up-to-date egg handling equipment. Top quality machines equipped with proven mechanical and electronic technology. The specific cost saving Staalkat features in each phase of the egg processing are a guarantee for a maximum profit on eggs.

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- Automatic graders and packers: 15,200, 21,600, 28,800 and 50,400 eggs/hour.
- Farmpackers: 21,600 and 43,200 eggs/hour.

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WORD OF MOUTH says HISEX BROWN

As a poultry Manager today you have to make more than just the right decision – you need to make the BEST decision. That's why you consider all the facts carefully when selecting stock – and then choose the HISEX BROWN.

Bred and developed by the Dutch breeding company Easibrain, the HISEX BROWN is now being marketed in Southern Africa.

HISEX BROWN has what it takes for unrivalled success in the brown egg market. However, promises aren't a recipe for success. That's something you can only achieve in practise, which explains why we remain active once the sale has been made. So even after you buy HISEX BROWN, you're not on your own, for you get sound, practical guidance and advice whenever it's required.

After all, results count – and you can count on HISEX BROWN for the BEST results.
Thus a fairly accurate average hen-day percentage production calculated each month for regions as well as countrywide. Three-month average also enables one to identify seasonal fluctuations in rate of lay.

Commercial hens required

The last step comprises a process of subtraction and addition to determine the required commercial supply and division to determine the number of layers required. Existing hen quotas are then adjusted accordingly or new quotas issued.

SUMMARY

From what I have said I hope it is clear that:

- we agree that the egg industry, world-wide, is burdened by over-production almost continuously;
- we are together to discuss ways and means to remove this burden from our shoulders;
- forecasting needs depend on the nature of the economic environment. However, regardless of whether the environment is free or controlled, consumption forecasting or the basic input.

Egg demand is price-inelastic but income-elastic. The last-mentioned relationship was illustrated with the correspondence in trend between egg demand on the one hand, and the size of the farm force and gross national product (consumer disposable income) on the other hand.

* Calculation of layer requirements, once demand has been projected, is relatively easy and reliable in a controlled environment.
* Depending on the environment, it is debatable whether production forecasts per se could solve the problem. Dissemination and application of forecasting information should be discussed further, especially in a free environment.
* With regard to a controlled environment, discussion of the need for short-term forecasting as against the application of normal market forces to fine tune supply/demand over short-term would also be beneficial.

---

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.

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Hi Lay Products
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R Barlow Equipment
P.O. BOX 256, DURBAN 7200, TELEPHONE 0212, TELEX 222222
New Incubator

The newly launched Pearl 22 incubator has been hailed by its distributor as a major breakthrough in the poultry industry because of its labour and cost-saving advantages.

The Pearl 22 incubator is marketed by E.C. Hookins Pty Ltd, leading distributors of specialised agricultural equipment for the past 25 years.

It will be available throughout Southern Africa at an unbeatable price. The distributors claim a saving of more than R5 000 per unit compared with similar capacity units previously available.

"The Pearl 22 incorporates all the proven advantages of the most popular units. One of the incubator's most noticeable features is the ease with which it can be cleaned, which enables the user to sanitise the inside of the incubator without having to shut down," says Mr. Eugene Hookins, managing director of E.C. Hookins Pty Ltd.

The robust, high quality racks in the incubator are removable to facilitate the loading and transfer of eggs. Once in the unit the eggs are turned every hour automatically.

"Each unit has its own control and information panel. Each unit also has an indicator light which registers if even a single rack has malfunctioned and failed to turn," says Mr. Hookins.

These electronic controls are of high quality and simple to maintain.

The Pearl 22 Incubator is capable of producing between 22 000 and 25 000 healthy chicks per week.

BIG DUTCHMAN TO MARKET FOODCRAFT INTERNATIONAL PROCESSING EQUIPMENT

Big Dutchman SA (Pty) Ltd announced that their holding company, US Industries Inc, has gained an important acquisition viz Foodcraft International Ltd. As a result the Foodcraft line of cut-up and processing equipment has been introduced into the South African Market.

Mr. J. Mallett, managing director of Big Dutchman SA, pointed out that in recent years the buying habits of the poultry consumer have changed. No longer is whole bird marketing the universal way to merchandise poultry products.

"In South Africa packs of chicken portions are priced individually by type and put on to the supermarket shelf. People who want only drumsticks, wings or breasts can obtain these portions without being required to purchase necks or backs."

"The Foodcraft line of cut-up equipment allows the processor to do this to the best advantage with large savings in labour and great consistency. By unique and patented cut-up procedures, yields are greatly increased, labour is reduced and portions produced which far exceed the accuracy and consistency of hand cut-up. Foodcraft brings these advantages with the automatic slicing machine, the leg processor and the breast processor. The leg and breast machines utilise hydraulic drive and provide considerable savings in manpower as well as substantial increases in yield."

"In addition to the already available breast deboner, we hope shortly to market machines for deboning legs and thighs."

"The South African market has already achieved a high degree of efficiency for manual cut-up and further processed products. By introducing this range of equipment we will enable the producer to further improve his efficiency and product quality."

EGG-DISPENSER — DISPLAY SHELF

Egg producers trading in the black market agree that the potential of this market is still largely untapped. In the rural areas particularly, egg sales are far below an optimum level and even in the urban black areas sales from black shops contribute an insignificant percentage to total egg purchases. Part of the problem obviously lies in the merchandising of eggs in these stores. Our product is not displayed; shopkeepers often run out of stock and eggs are mainly sold in half-dozen units or singly and at

(To page 309)
SYSTEMEATE RUNS AHEAD

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

Why?
Because Systemate 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.

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Telex 4-22509
POULTRY SCENE

BREAKTHROUGH IN BREEDING LEANER BROILER CHICKENS

Broiler chickens have been getting fatter, probably as a result of selection over many generations, for greater appetite and growth rate. Most of the fat is in the bird's abdomen and represents losses to broiler growers and processors. The housewife too sees it dripping away into the roasting tin without improving the quality of her meat.

Breeders have been unable to select against fat because of the lack of suitable methods of measuring it in live birds. Now, scientists at the ARC's Poultry Research Centre in Roslin, Midlothian have developed a technique based on a simple blood test which allows the fat content of live chickens to be assessed.

Speaking at an International Poultry Science Symposium in Edinburgh, Dr Colin C. Whittinghead described how he and Dr Harry G. Goffin had used the technique to breed leaner chickens. They had carried out a demonstration breeding programme to produce a line of broilers that was substantially leaner than those currently available commercially. After three generations of selecting using their new technique, the lean birds were as heavy as fat birds but contained 29% less fat than those which had been bred conventionally. The difference in weight was made up by more protein.

If this simple technique is applied on a commercial scale, growers of broiler chickens would benefit because lean broilers are more efficient in their use of feed. (Feed represents 80% of the cost of production.) The scientists described how their lean birds ate 4% less feed to reach the same weight and were 5% more efficient at converting protein in the feed into meat. It is estimated that these improvements would be equivalent to a saving of £1.5 million in the annual broiler feed bill for the UK. The housewife would also benefit by getting less fat and more meat for her money.

Even greater benefits in terms of consumer value and industrial efficiency could be achieved by reducing fat contents to still lower levels as a result of continued selection.

NEW MARKET FOR POULTRY MANURE

Poultry farmers can now for the first time dispose of wet poultry manure at a profit, following an announcement by a leading manufacturer of organic fertilisers.

Mr Rene Lion-Cachet, general manager of Groeikrug Organic Fertilisers with head office at Meyepton, Transvaal, announced recently that his company can now process wet manure into a useful organic fertiliser with the use of the company's unique machine which was custom-built in the USA. This machine, called the Scavenger, is mobile and can be used all over the country.

Mr Lion-Cachet said dry poultry manure had never been a problem because it did not deteriorate, had little or no smell, and there was always a high demand for it. The wet manure had always been and still is a problem. It is runny, smelly, and has no market, he said.

"With the Scavenger" all that is something of the past. With the help of this machine, Groeikrug has developed a process to make a useful organic fertiliser out of wet poultry manure which may include carcasses of rotten eggs, dead birds and other waste materials," he added.

Mr Lion-Cachet said his company now buys this from poultry farmers, loads it on the farm and transports it back to Groeikrug's three plants at Tongaat in Natal, Kroonstad in the Free State, or Oostkampen in Transvaal, for processing.

Where there are several farms in the same vicinity, the company would consider taking the Scavenger to the area if the farmers discharged the wet manure and other waste in windrows and if there were enough materials to make the visit profitable, Mr Lion-Cachet said.

On behalf of Groeikrug Organic Fertilisers, Mr Lion-Cachet said: "People are not realising the potential of this manure. It is high in nitrogen and can be sold as an organic fertiliser which is not harmful to the soil or the environment."

For further details, Hans Lombard FR Consultants Tel (211) 23 5826/7/8.

POULTRY MANURE

The Scavenger in action.
Smart Chick

Only minutes old, and already operating his Plasson Drinker Mk.II — all by himself. As he grows, the Mk.II grows with him: height and water level are fully adjustable. And because of Mk.II's exclusive automatic design, even day-old chicks keep the water clean and replenished as they drink.

For perfect stability, Mk.II has an independent ballast bottle that does not affect the efficient valve system. In a few short years, Mk.II has become the standard of the industry — preferred by smart growers, too.

PENINSULA POULTRY APPLIANCES (PTY) LTD.
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Poultry Bulletin — November 1983
Vir al u veevoere
Ons dek 'n wye spektrum van rantsoene vir alle plaasdier-spesies en boerteldiere. Alle rantsoene word deur deskundiges volgens internasionale standarde geformuleer, om u resultate te verseker. Daarom bly Senwesco Veevoere die toebasseer.
Nader ons en wees verseker van kwaliteit en diere.
Laat Senwesco Veevoere dus 'n deel van u sukses word.

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Hi-Sex Brown Facts:

1. Bred by the finest breeding company — Eversed, Holland.
2. The most economic brown egg layer in the world, 102 million in production.
3. Very manageable — you'll love her.
4. First eggs at 19 weeks.
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6. Call Koos Kooy at Ora-Es-Labora, Telephone 01411-2577/23216.

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KROONSTAD, Eastern
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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 55-60 g

AVAILABLE AT
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BROWN EGG LAYER

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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.

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the chick that pays for itself

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