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FARMSTOCK

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MANAGING EDITOR

Abiodun Ojugbele

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NEW EQUIPMENT

MOBILE STORM-PROOF BUILDING NEEDS NO FOUNDATIONS

A NEW design of all-purpose building which requires no foundations, yet is claimed by its British manufacturer to be storm-proof, obtains its stability from an anchorage system originally developed for erecting fences without the need for concrete.

The design is based on an 8 ft. long section, supported at its four corners on concrete slabs laid on the ground. Each corner overlaps the slab and is secured to the ground by four pins, varying in length from 2 ft. 6 ins. to 6 ft. depending on the soil.

The method of fixing gives a high degree of stability and complies with British Standard Specification on general purpose farm buildings of frame construction. An indication of the strength of the fixing is given by the fencing system which carries eight wires, each with a breaking strain of 2,300 lbf. (10,433 kgf).

The system enables any length of building to be constructed quickly and taken down with equal speed. The sections are 26 ft. 6 ins. wide by 13 ft. from the ground to the highest point.

A building composed of four sections 32 ft. long can be erected by two unskilled workmen in 6 hours, starting from separate components each no longer than 8 ft. It weighs 3,360 lb. and can be transported on a Land-Rover or similar vehicle.

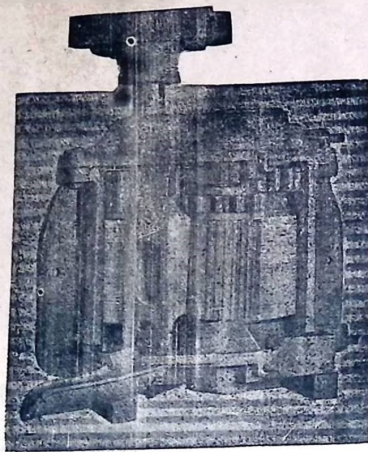
The building can be supplied without cladding, for covering with any locally available material, or alternatively, it can be supplied complete with a translucent, nylon re-inforced plastics material. The company is

shortly introducing a composite plastics material for use where insulation is important.

The plastics cladding, which has a built-in ventilation system, is held firmly over the frame, under tension, by springs.

PRE-FABRICATED MILKING PARLOUR NEEDS LITTLE SITE WORK

A pre-fabricated milking parlour developed by a British firm requires the minimum of site preparation and



THE KUMAR SUGAR-CANE CRUSHER

This versatile crusher is ideal for cottage or village industries. For more particulars please contact Messrs Debordan Commercial Enterprises P. O. Box 3494, Lagos.

The frame is manufactured from angle iron and the building can be divided into bays. Suggested uses are as a cover for animals, allowing the building to be moved each year to reduce the risk of infection, and in the horticultural and building industries.

(Goodall's Patents Ltd., Yoxall, Burton-on-Trent, Staffordshire, England; price, approximately 10s. per ft. (per 929 cm.) f.o.b.)

is quickly and easily erected.

Of unit-panel construction and requiring no framework, the building is available in 8, 10 and 12-stall versions.

The only preparatory work required is the laying of a concrete base with an excavation for the operator's pit. If excavation is impractical or inconvenient, the cattle standings can be arranged on raised platforms with the operator working at ground level.

Feeding stuffs are delivered from lofts above the stalls into metering hoppers controlled from the operator's

pit. Entry and exit gates—the standings and the sliding main doors are also remotely controlled.

The exterior panels of 16 gauge galvanised steel and the operator's gangway is covered with a translucent sheet to give adequate daylight.

The building has been designed to accommodate a firm's milking equipment and can be used with other types. The firm's milking plant features one-piece glass containers graduated to show the amount of milk taken and individual master valves at each milking point control the complete milking and washing sequence.

(Gascoignes (Reading) Ltd., Reading, Berkshire, England; building known as Clearwater Factory; price from £1,400 milking equipment extra.)

X X X

PORTABLE BUILDING ARE A BOON TO FARMERS

A BRITISH farmers' trading society is now marketing a range of portable buildings which can be erected in a few minutes.

Available in three sizes—10 ft. by 12 ft. with 6 ft. headroom; 20 ft. by 16 ft. with 8 ft. headroom; and 20 ft. by 30 ft. with 15 ft. headroom—they are supplied with or without door. The is a selection of canopies.

The buildings have a frame work of box-section steel with lattice members forming the arc, and removal tubular steel and section. The framework includes foot points for ground anchorage. Canopies can be clear coloured reinforced plastic or tarpaulin type.

Applications for the buildings include temporary produce and appliance storage, farm workers' shelter, stock holding and shelter.

(Lunesdale Farmers Ltd 17 Cable Street, Lancaster England.)



Thorner Brothers Ltd., of Mytholmroyd, Halifax, Yorkshire, England, one of the biggest British chick producing companies, has its own blood-typing laboratory. In this picture, blood is being collected from a chicken to be injected into another bird so as to produce antibodies.

HOW RESEARCH IS DEFEATING DISEASES IN POULTRY

FOR many years Britain's producers of livestock for the world have bred cattle, sheep, pigs, horses and poultry to the highest possible standards of performance and health.

But as the livestock industry has intensified so, too, has the incidence of disease. The sector which has undergone most intensification in recent years is the poultry industry and it is this which is threatened most by the risks and outbreaks of disease.

HIGH COST

In genetics, feeding, housing and general efficiency the

poultry industry leads the way, but it is estimated that disease within it probably costs £40 million a year.

Some experts have claimed that the costs of producing eggs and chickens in Britain could be cut by a fifth if poultry diseases could be effectively controlled. In fact, it is doubtful if improvements in any other aspect of poultry farming could produce comparable productivity gains.

It is obvious therefore that

by A. Rose Muir

solutions to disease problems must be sought, and many millions of pounds are spent each year on research both by the Government and by private organisations.

In recent years there have been remarkable changes in the pattern of disease. Newcastle disease (fowl pest), for instance, has virtually been wiped out through a successful vaccination policy.

In 1962, the last full year

of the British Government's compulsory slaughter policy there were 3,380 outbreaks of the disease which cost the public £8,700,000 in compensation. In 1966 and 1967, however, when a policy of vaccination was in operation only 194 and 198 outbreaks were recorded.

UNDER CONTROL

Despite certain disappointments in the early stages, the vaccine policy has been a success and Newcastle disease is now under control. Unfortunately, there has been a marked increase in the incidence of other respiratory infections, notably infectious bronchitis (I.B.) which has caused severe economic losses. The disease is being controlled, however, by vaccination but controversy is raging between the use of "live" "killed" vaccine.

One of the country's leading virologists has gone on record as saying that if eradication of diseases was to be the goal on British poultry farms then "killed" rather than "live" vaccines would always be favoured as a means of immunisation.

The attraction of "killed" I.B. vaccine is that it does not cause the serious side effects of "live" vaccine. A further advantage is that it may be used in growing birds on sites where there

Continue on page 6

- Live Chickens
- Oven - Ready
- Eggs (all sizes)

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REPRESENTATIVE OF

MITCHELL FARMS
AGEGE

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RESEARCH

are adult birds in lay—a situation where it is extremely dangerous to use “live” vaccine because of vaccine virus spreading to the laying birds.

Likewise “killed” vaccine is being used for reinforcing immunity of birds vaccinated as growers with “live” vaccine.

In short, the main attraction of “killed” vaccine is that although it requires individual handling of birds for administration the lack of side effects and its comparable efficacy makes it an extremely attractive alternative proposition to “live” vaccine.

A polyvalent vaccine has also been introduced in Britain. This has come about through the discovery by research workers that although infectious bronchitis viruses in Britain are all of one strain there are minor variations within it.

SERIOUS PROBLEM

Probably the most serious problem for the British poultry farmer is Marek's disease—one that is being most intensively researched by Government and private workers. The isolation of the Marek's agent was a breakthrough in the control of the disease and it has led to what at present is probably the best practical solution—genetic selection;

Work by companies like F. and G. Sykes with pure lines of laying stock has shown these lines to achieve improvement in resistance to Marek's in comparatively few generations.

At present practical control is best approached in three ways: the development of resistant stock; improved husbandry and management methods; and rigid pro-

grammes of hygiene and disinfection.

Government researchers, however, claim that in the last year significant advances have been made in the development of laboratory techniques which will provide the much needed methods and tools to examine more precisely and more quickly the factors that are important in the spread of the disease. This information is vital for the development of better methods of control.

For the broiler industry PPLO (Pleuro-pneumonia-like-organisms) constitutes a continuous threat. However, the development of PPLO-free stock has changed the face of the problem and successful results by British poultrymen using the stock has convinced the pessimists of the benefits of a PPLO-free programme.

HYGIENE POLICY

Many important rules must be observed if the broilerman is to retain his “free” status, not least the establishment of a satisfactory hygiene policy for covering supply farms, hatcheries and broiler production units. The initial decision to go free must involve all sections of the organisation from the breeder to parent stock right through to the processing factory. In addition constant checks and inspections must be made if the PPLO-free status is to be maintained.

For the producer, however, who is not PPLO-free or cannot obtain PPLO-free stock, a British company has developed a programme of treatment to control the disease. In addition the programme includes control of E. coli infections.

The approach is based on the use of two antibiotics—Erythromycin and Chloramphenicol. The first phase of the programme is treatment at day-old with Erythromycin

because of the risk that PPLO is present when the chick is hatched. A resurgence of PPLO could occur at three weeks, but a low grade infection at this stage could allow a natural immunity to grow up.

After another 10 days, the PPLO infection could start to produce clinical disease, or inflammation in the lungs or bronchi could lead to respiratory or septicaemic infections with E. coli.

The second and final phase tackles both these problems by attacking the two diseases. The two antibiotics are administered at the same time on the 32nd day of treatment.

BETTER METHODS

As in other countries, there

are many diseases which can affect the profitability of the poultry industry. Diseases like coccidiosis, blackhead, contagious catarrh, aspergillosis and so on are always evidence to some extent to lead to improved methods of medication and treatment through research they are being mainly under control on British farms.

Hygiene and disinfection have a very significant place to play in the field of disease in that they are a means of prevention rather than cure. The British poultry farmer which instituting programmes are making considerable contributions to the maintenance of the industry's profitability through control of disease.

SEND US

NEWS AND PICTURES

ABOUT LIFE IN

YOUR FARM.

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FREE

ADDRESS YOUR LETTER TO

THE MANAGING EDITOR.

FARMSTOCK, P. O. BOX 79 E

LETTERS

SEEDS

Dear Sir,

It ought to have occurred to various Agricultural bodies that the time had

RABBITS

Dear Sir,

We shall be grateful if you will please give the information as to where we can buy rabbits for raising and the price each sells for.

We enclose a stamped reply envelope for your kind. We thank you and remain,
Yours faithfully,

J. E. Odiete.
The Odiete Industrial Estate
Orerokpe via Warri.

Editor's Note

Like many others, whom we have directed, please contact either Mr. Harry Atfield c/o. M. A. N. R. Farm Institute, Ilesha, Western State or the U. S. Peace Corps, P. M. B. 5199 Ibadan.

YOUR PAGE

IN every good newspaper or magazine, a special feature is the LETTER. The page carries the public view on a variety of matters. Letters may be on the quality of matters usually carried by the medium, a current matter in town or anything relative to the sphere that medium caters for.

Letters should bear the writer's name and address but a pen-name is allowed if such is used strictly to avoid publicity.

MANAGING EDITOR

come to open seeds shops all over the country.

Whenever one wishes to plant anything one often encounters a lot of difficulty before getting even the poorest of seeds; and an inadequate supply too. The seeming benefactor sells to

his own measure and the quality of the species can be anything.

I think the states can do something about this or an enterprising fellow can offer the service.

Ilorin

Iyanda Yesufu

Editor's Note:

Truly, we need a pioneer in this line. One cannot agree more with you.

Fortunately an Indian company has opened a shop in Kano.

new men's RAIN BOOTS

"CAPWELL"

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Blue or Green Sole

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Bata

THE SIGN OF
GOOD SHOES



PLANNING A LAYING UNIT (I)

ONE of the most important factors in successful poultry farming is good planning. This is true both for someone who is thinking about starting a poultry farm and for someone who has a farm already and is trying to make a success of it.

Planning should start from three points.

- (i) How many eggs can I sell, and at what times of year ?
- (ii) How much money should I invest in egg production ?
- (iii) What kind and size of poultry unit can I manage most successfully ?

The first of these three is the most important. To produce eggs is foolish unless they can be sold, so planning begins with making an estimate of how many eggs can be sold and in what ways.

If the demand for eggs varies according to the time of year, make allowance for that in planning the farm. For example if eggs sell better in the dry season plan to have more eggs at that time and less in the rainy season.

Perhaps the small eggs hens lay when they first come into lay are easier to sell at one time of year. Then most of the hens could come into lay at that time.

One of the most important objectives is to keep one's customers. If a farmer has no eggs for some time they will go somewhere else, and perhaps not come back. So it is important to be sure there are eggs when they want them.

Production also varies, naturally, according to breed, feeding, management and sales also vary, so we do not try to plan to the last egg, just to be as near to meeting our customers' needs as possible.

Planning is necessary to get new day old chicks to be reared and come into

lay when old birds are ready for replacement. From the time one orders day old chicks to the time they come into lay must be at least six months, so one has to think ahead.

To plan production to meet demand it is necessary to know how a bird will lay during its life. Breeders publish details for their own particular hybrids, but all birds follow a similar pattern, coming into lay when the birds are about 19 weeks old.

Production rises to a peak of over 80 eggs per 100 birds

Here are two examples of farm plans made to meet customers' demand for eggs.

PLAN A

This plan is to meet a steady demand for eggs all the year round. It is based on one rearing house supplying three laying houses in turn. Day old chicks are ordered sufficient for one laying house every 20 weeks. At 16-17 weeks the first lot

The plan gives a fairly level supply of eggs through the year. Egg size varies more than egg numbers, but is sufficiently well balanced not to make too much of a sales problem. The biggest disadvantage of this plan in Nigeria is that the old layers are for sales only three times a year, and so new customers have to be found every time.

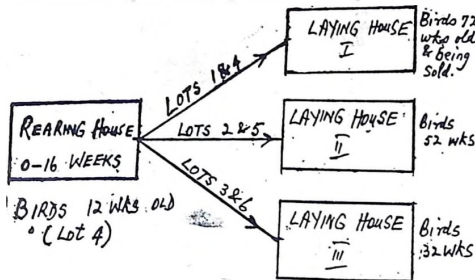
Also unless the birds happen to be sold at festival times it may be difficult to get a good price for them or to clear them quickly enough to make room for the next lot.

Doubling this system to make two rearing houses taking birds in turn at ten week intervals, and six laying house makes egg size and

by **L. J. Elmslie M. A. (Cantab)**

Specializing in Agriculture

Technical Director, Ejinaka & Thornber Ltd.



are moved to the first laying house, the rearing house is cleaned and got ready for the second lot.

When they in turn reach 16 weeks they move to the second house, and the same happens for the third lot. A fourth lot of chickens is started in the rearing house, and the first lot now at the end of their lay are sold off to make room for them.

bird sales more level through the year, but it also makes the system too complicated for convenience.

Plan B

This plan is to take advantage of higher prices for eggs and old layers at one time of year, but allows for some

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REARING
HOUSE I

REARING
HOUSE II

LAYING
HOUSE I

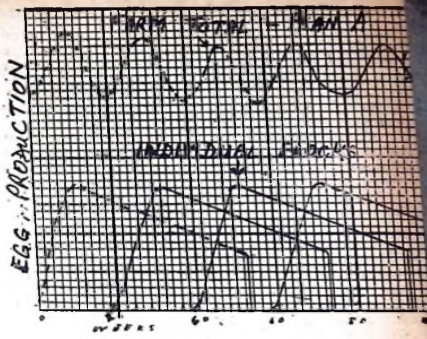
LAYING
HOUSE II

eggs at all times to keep regular customers happy.

There are two laying flocks in plan B. They are hatched at the early part of the rainy season, one two to three months earlier than the other. The first lot comes into lay in the late rainy, or early dry, season. The second lot comes into lay about New Year. The old birds from the first lot may be sold at harvest

festival time, and those from the second lot for Christmas or New Year celebrations. Birds housed on this plan should get bigger prices for their eggs and as old layers.

Continue on page 22



BE LIKE HER

NOT FOR THE WANT of what to do but for its ignorance many young girls, ladies and women who should find gainful employment on the farm personally owned by them, a private or government sponsored venture are waiting, waiting and waiting for a job that is not forthcoming.

Why not be like charming Marian Okulaja seen here in an English farm feeding three-day-old chickens?

Now studying for a Diploma in Poultry Husbandry at Harper Adams Agricultural College in the English Midlands, pretty Miss Okulaja will soon return to the country to be admired and perhaps envied by the waiters.

You may not go overseas before starting; there are many experienced poultry keepers in the country from whom you can learn. Start today to prominence.



CONQUEST OF MOSQUITO IN SIGHT

Entomologists in the United States are edging closer to control of the mosquitoes. The U. S. Department of Agriculture recently cited new progress in the campaign against these insects which thrive in many parts of the world.

After testing 249 experimental repellents, Agricultural Research Service scientists have found 12 that are effective for more than 100 days. One of these 12 compounds, an acetamide, repelled yellow-fever mosquitoes for 266 days.

The new repellents differ from the older repellent (Dettol) which is used directly on the skin. They are considered ideal for use on hat visors, collars or mosquito netting.

X X X

U. S. HELPING ENRICH FOOD PRODUCTS.

U. S. efforts to help meet the need for protein-rich foods in the developing countries were outlined to the United Nations Economic and Social Council by Ambassador Arthur Goldschmidt.

About 300 million children in the developing world suffer from a lack of proteins, which are important to their growth.

Ambassador Goldschmidt said the United States is trying to improve the protein quality of existing cereals and sponsoring research to develop new foods rich in proteins.

"We are working with private industry to produce and market nutritionally rich foods and we are actively encouraging and assisting the developing countries

Department of Agriculture scientists have also learned that fungus disease of mosquitoes, though not wide spread, are effective killers of these pests in certain areas of the United States.

"Fungus disease can kill at least 18 kinds of mosquitoes," the entomologists said.

"The most important fungus disease attacks mosquitoes in the larva stage, usually killing them before they mature."

Nematodes, microscopic roundworms, also have been found to be natural enemies of the salt-marsh mosquito. The nematodes can kill their insect hosts when the parasites burst out of the mosquitoes' bodies to mate and lay eggs. Nematodes attack at least 30 kinds of mosquitoes' bodies to mate and

X X X

themselves to expand their production and use of such foods," the U. S. official said.

Council members sampled some of the new protein products being produced and marketed in developing countries as a result of American initiatives. Mr. Goldschmidt noted that all the materials used in the foods came from the countries in which they were marketed. "Nothing but the techniques are imported to produce them," he said.

The U. S. Agency for International Development has provided grants to private companies to study potential demand for protein-enriched products in areas where they are needed, Ambassador Goldschmidt said. In 1967, for example, five companies were given contracts to develop protein beverages and other food products from soy beans and fortified wheat and maize in developing countries.

lay eggs. Nematodes attack at least 30 kinds of mosquitoes. Infected female mosquitoes do not produce eggs. One nematode kills mosquitoes in the larva stage.

Additional research is needed to determine the potential for producing large quantities of nematodes in laboratories, and spreading them to various mosquito breeding areas.

FARMING BRIEFS

KAINJI FISH

NO less a personality than that of Licut. Col. David Bamigboye, Military Governor of Kwara State, has prophesied that the Kainji Pond may supply half Nigeria's need in fish on the completion of a research now being carried out by U. N. experts.

The announcement was made recently during the installation of the Emir of Borgu, Alhaji Musa Muhammadu Kigera III.

X X X

KANO AT WAR WITH LOCUSTS

KANO State has fully prepared to combat a possible attack of locusts said to be approaching from the north east by way of Katagan.

The State's Ministry of Agriculture is directing operations and fumigants, sprayers, insecticides and personnel have been supplied to cope with the infestation.

The insects are reported to be eating tree leaves, shrubs and grasses but crops in comparatively small areas.

However, it is feared that they may pounce on crops when they have nothing else to eat.

COMMISSIONER STUDIES U. S. AGRIC.

THE Benue State Commissioner for Agriculture and Natural Resources, Mr. I. N. Shaahu has been visiting U. S. Agricultural Centres to familiarize himself with modern systems.

His tour took him to Illinois, and Arkansas among other places.

The commissioner hoped to apply the techniques he had seen to improve agriculture in his State.

"ORGANISE COOP" APPEAL TO KWARA STATE.

THE Emir of Ilorin, Alhaji Sulu Gambari, at a presentation of certificates ceremony recently has appealed to the people of Kwara State to organise themselves into Cooperative bodies.

The Emir enjoined the recipients to uphold chastity and selfless service.

KABBA FARMERS WANT BANK

THE Kabba Progressive Farmers' Association have appealed strongly to the Commissioner for Trade and Industry, Mr. E. D. Bandle, to explore the possibility of opening a bank for them in Kabba.

THE FLY PROBLEM (I)

AND ITS CONTROL

FLIES have been known as very deadly human parasites by early man. Much of human and animal suffering—loss of health and fall in livestock and harvest—are traceable to flies the commonest of which is *Musca domestica*; young school children know them as disease carriers, people with uncovered sores often in a bid to kill the offending fly that has just given them a prickly bite, have so spanked their sores hoping to kill the fly but thereby set their wounds bleeding; they go on causing the offending fly.

For dairymen, maintaining a low bacterial count is of prime importance in milk production. They must see to it that flies are eliminated around their operation.

In cattle pens around pig raising operations, and wherever livestock are kept, farmers have found through long experience that flies not only carry disease but reduce livestock health and cut into farm profits to the tune of several thousands of pounds a year.

by Our Sanitary Correspondent

vegetable refuse heaps and other similar places.

And it takes only 6 to 12 hours for eggs to hatch into dirty white larvae (maggots). After feeding on the substance on which eggs were

There is no simple solution to all fly problems. In order to know what to do about flies it is necessary to understand something about the life cycle and activities of flies—what materials produce flies, which kinds of flies bother people, how to eliminate fly sources, and how to destroy flies.

Why worry about flies?

It has been known for many years that domestic flies are able to carry various diseases. One of the most important fly-borne diseases today are the bacterial dysenteries. Flies feed and defecate minutely on human and animal excrement, garbage, or the food on your table.

Their hairy bodies and legs as well as feeding habits, make them ideal carriers of germs.

When flies occur in large numbers their presence alone may be very annoying. Damage to homes may result from continued depositing of fly specks. Fly presence or repeated fly-specking may cause decreased property values.

In the next instalment, the life history of a fly is discussed.



The House Fly Cycle

Houseflies are natural carriers of bacteria because of their structure and habits. Their bodies, legs and mouth parts are covered with hairs; their feet have a sticky fluid and their mouth parts are damp.

The females deposit eggs on the surface of animal manure, waste around feed troughs, refuse in garbage piles, leaking septic tanks,

deposited, the larvae will mature in 4 to 7 days in warm weather and somewhat longer in cold weather. Full-grown larvae usually migrate to the drier outer surface of the media to pupate.

Adults emerge from the pupal case in 4 days to several weeks depending on temperature and weather. They generally live from 30 to 60 days during warmer months. Some live through the wet season.

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**FIGHT
FLIES
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INSECTICIDES**

HEIGHTENED INTEREST AT 1968 ROYAL DAIRY SHOW

AGRICULTURAL SHOWS IN THE UNITED KINGDOM HAVE, OVER A PERIOD OF SOME 160 YEARS, MADE AN IMMENSE CONTRIBUTION TOWARDS AGRICULTURAL PROGRESS, BUT TO THE DELIGHT OF MANY AND THE REGRET OF FEW THE CHARACTER OF SHOWS IS CHANGING RAPIDLY.

The days when the annual Show was mainly a social occasion are rapidly disappearing as were events staged purely as public entertainment. The trend is now towards shows of a more permanent kind with demonstrations and features designed to educate and assist the commercial farmer in his constant efforts towards attaining greater economic production.

Planned use of capital, maximum use of existing buildings and equipment, the use of suitable machinery leading to a reduction in labour, the performance of livestock by adoption of improved husbandry—these are the more important standards of the modern agricultural Show.

Farming Economics

The Royal International Dairy Show is typical of this development. This year's Show, held at Olympia in London recently concentrated more than ever before on that

most important of all factors, the economics of dairy farming.

At that unique Show occupying 14 acres under one roof, the Royal Association of British Dairy Farmers provided a number of features leading to improved management and greater productivity—vital to the future stability and success of British's greater dairy industry.

The following four features were of particular interest:

1. Planning for Parlour Milking

The increase in the size of dairy herds continues demanding even more skills from milkers and a new approach by management. Unless considerable forethought is given to the planning of the routine work each milking can be a strain for both cows and milkers.

Practical ways of simplifying work in any parlour was demonstrated. They included an electric dog, a

backing gate, herringbone parlour designs, management charts and aids to udder washing.

2. Disposal of Farm Effluent

With the continuing intensification of livestock units, the disposal of farm effluents, particularly cattle slurry, has become the most acute problem of many farms today. Far too often the disposal of farm waste received little or no consideration when it should demand the highest possible priority.

The exhibit aims to help livestock farmers to decide the best method of handling in relation to farm type, method of housing and quantity to be handled. A range of equipment for dealing with liquid, slurry and solid manure was shown and basic information on costs, working rates and other economic factors were presented.

3. Beef from the Dairy Herds: The Economics of Calf Rearing for Home Produce Beef.

The annual slaughter of nearly 750,000 calves is a waste which neither the nation nor the farming industry can afford. In many other countries there is still

lar waste and the problem is therefore of international importance.

This demonstration staged to encourage changes and improvements by dairy farmers who are in a position



Sir Richard Treharne, President of the Royal Association of British Dairy Farmers, and Chairman of the Milk Marketing Board.

to make a major contribution to the national meat supplies.

In the rearing of calves from the dairy for both veal and emphasis would be placed on the avoidance of mortality at and after birth, nutrition and the economic different systems of feeding and costing different breeds.

NATIONAL DAIRY SHOW

Pigs from Sheep

The Sheep industry has been facing a difficult period as many old traditional methods are becoming unprofitable. There are several factors governing the profitability of sheep. At the 1968 Show low-cost housing and indoor feeding, heavy stocking of grassland and systems of economic management were exhibited as essential parts of policies designed to achieve fast growth rates and well fleshed carcasses to suit the consumer.

Apart from these important demonstrations there were many other sides to the Royal International Dairy Show.

This year was the second occasion it had been staged as an international event.

Several new trade exhibitors from the European mainland, also from the Province of Quebec and from Eire exhibited for the first time. The number of enquiries received from overseas visitors who attended this year was higher than ever before.

Cheese And Butter

This year the Royal Association has introduced classes for hard and blue cheese, butter and milk powder in which manufacturers from any country could enter. They have attracted satisfactory entries and

it was believed that, once established, they would become popular and important features at future Shows.

The possibility of extending "open" classes to other sections of the Show is under serious consideration by the Royal Association's Council, also in the produce section two classes, open to manufacturers in Britain, were introduced for yoghurt—one with a milk fat content of not more than 1.5 per cent, the other containing not less than 3 per cent. milk fat. This was the first time that classes for yoghurt have been staged in Britain.

The Show was of course renowned for its dairy cows and heifers. All the important dairy breeds for which Britain is renowned - Dairy Shorthorn, Ayrshire, British Friesian, Jersey, Guernsey Red Poll and Red and White Friesian - were represented.

The overall entry was 459 compared with 544 in 1967. This drop of about 20 per cent. was anticipated and was due to two causes:

- (a) The Ministry of Agriculture's Brucellosis (Accredited Herds) Scheme and

- (b) Last winter's tragic outbreak of foot and mouth disease.

Because of the Brucellosis scheme the Royal Association provided three separate sections of stalling at the 1968 Shows:-

- (1) accredited; (2) controlled and supervised and (3) non-designate. Under the scheme accredited cattle returning from the Show have to be isolated.

This has meant that several regular exhibitors have decided against showing until such time as the Show is open to cattle from accredited herds only, when the isolation requirement would no longer apply.

The Royal Association hoped that this would be in 1969. Several other herds which have been represented at Olympia for many years regrettably, were missing on this occasion. This was because they were destroyed during last year's foot and mouth epidemic.

Beef Hall

The opening of the Beef Hall has added immense interest to the Show and well over 100 head of beef cattle were exhibited. All beef cattle were judged as meat

animals to suit marketing requirements.

Following the judging in the beef classes the cattle were sold by auction on the Wednesday.

Pigs (heavy, bacon, pork and cutter) made up an important part of the Show. This section was regarded by leading breeders as the finest pig show staged in Britain today. The same could be said of the bacon where several hundred sides were hung.

Veal was introduced to the Show several years back and the number of entries had increased annually. This year two classes (each in sections) were provided in each of carcasses could be accepted.

Few shows could be such interest to progressive dairy, beef and farmers, also to all engaged in the producing and distributive of the dairy industry. But there was also for the townsman. There were several thousand poultry, pigeons, and rabbit

There was also a delightful horticultural section and overall floral arrangements always a great attraction to the general

WHAT IS BREAD? (I)

NIGERIANS seldom think of what type of bread to buy. Bread is an imported food. It was brought in by early trading vessels from which the coastline of

opinion is that she is giving them a tasty and nourishing stuff.

Since she does not know how to bake bread, she

lact amino acid-lysine, so very necessary for the body, is destroyed and so one loses one of the many valuable proteins in the grain.

Sugar by itself has no vitamins and minerals which are essential in any food. The more sugar that is added to any food, the more is the loss thus caused in the heat giving, properties of other valuable materials in the food.

It has been noted that our saliva changes automatically with whatever we eat, in other words, our salivary glands produce different kinds of saliva according to the

The starch which in the greater percentage grain, is swallowed chewing without being broken down into the form that can be absorbed by the body, that's why one usually feels heavy after taking sweet bread. On account of experts on food conc that sugar in bread hinders the body from absorbing nourishment in bread.

It should also be noted that white bread is made from 'refined flour'. Refined flour is flour that has been rid of much of its nutriment. In the process

An analysis of BREAD by Our Dietician

West Africa acquired the skill of making it and gradually the relish for bread spread inland.

The colonial masters used to dress in white suitings, they kept their house clean and anything that went near the colour white was made spotlessly white. So gradually the colour of white became attached to good things. The stewards who served Europeans also must have noticed that the foreigners' soup was invariably white.

The colonial master himself was not a dietician and must have wrongly thought that white as a colour should always take precedence in food.

The Nigerian businessmen who jump into bread-baking have the opinion that good bread must be white inside. The average Nigerian does not have a choice because he does not know of any other type of bread. He knows only white bread.

Thus when one goes into most shops, bakeries, confectioner's shops, a cafes, restaurant or snack bars, though there may be a variety of baked food, the assortment usually has only one type of bread-WHITE. The question that often confronts the housewife is: What shall I give my family today or precisely, this morning, in the afternoon or at dinner. If she chooses bread, her

confides in the baker to give her just what is good for her family.

Because of this common

ignorance about bread, it will be worthwhile to discuss bread in toto.

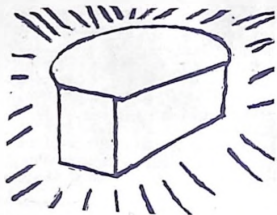
The quality of bread

Questions have revealed that shop keepers stock the bread people ask for. The popular bread is determined not by its nutritional value but by its taste (sugar) and wrapper. "The more colourful the wrapper, the better the bread must be" so most people think.

But baking standards notwithstanding all breads are not equally nourishing. Most bread loaves offered for sale in this country are not nourishing at all. They only fill the stomach.

As mentioned earlier, taste is the most important factor to the Nigerian bread buyer. Little does he realize that it is the sugar in the bread that actually robs the bread of its food value. When sugar is mixed with bread, an impor-

ARE YOU BUYING THE RIGHT TYPE OF BREAD?



food in our mouth. Thus, when one eats a sugary bread, the sugar stimulates the saliva that can break down sugar.

This happens because the taste of sugar is first felt but since two types of saliva cannot come out of the glands at the same time, the starch in the bread is left untouched by the gland.

'refining' flour two harmful things result. One is the removal of the outer part of the grain which is usually brown.

Closely laid on the outer

part of the grain is a layer which is highly nutritious. As the grain is milled the germ which is most protein and oil, is removed.

In short, refined flour which is usually white has neither the aleuronic layer nor germ. Since these two are absent in refined flour, it follows then that refined flour has less proteins and vitamins than unrefined flour. In effect, refined flour loses its nutritive value but gains whiteness.

Continue on page

WHAT IS MILK ? (2)

HOW DOES IT HELP YOU?

CHEMICAL COMPOSITION OF MILK

THE essential chemical constituents of human milk and the milk of some other species are set out in Table below. The figures for human milk are mostly derived from the thorough study carried out in Great Britain by Loh and Mawson (1950).

But studies in the U.S.A. (Macy, 1949), Johannesburg (Walker et al., 1954), Nigeria (Jelliffe, 1952) and in India (Gopalan, 1958) all show that although there may be wide variations in the nutrient content of individual samples of human milk, the general picture is the same throughout the world. Except for its vitamin content, the composition of human milk appears to be largely independent of the state of nutrition of the mother.

Even after prolonged lactation for 2 years or more, the quality of African women's milk appears to be well maintained, though the quan-

tity produced may be small. Severely undernourished women in times of famine often manage to feed their babies surprisingly well.

The proteins are perhaps the most important nutrients in milk. The principal protein is caseinogen; but lactalbumin is also important; in human milk it provides about half the protein, though only about one-fifth of the protein in cow's milk.

Milk also contains about 40 to 80 mg./100 ml. of non-protein nitrogen (Hytten, 1954). The biological value of milk protein is very high. It will be observed in Table below that human milk usually contains less than half as much protein as cow's milk.

For this reason cow's milk should be diluted before feeding it to every young infants. About 20 percent of the caloric value of cow's milk is provided by protein, as compared with only 6 to 7

percent in human milk.

As judged by the approved standards human milk is thus a poor source of protein. The small quantity of protein in human milk is evidently most efficiently utilised.

It has been shown that human milk contains an essential nutrient for bacterium *Lactobacillus bifidus*.

This nutrient is not found in cow's milk. It is a nitrogen-containing polysaccharide with a high hexosamine content. The biological significance of this substance for the young infant is not known, but it is interesting that the prevailing micro-organism in the faeces of normal breast-fed infants is *Lactobacillus bifidus*.

By contrast, the faeces of infants-fed on cow's milk contain a great variety of organisms. The faeces breast-fed infants are acid, whereas the faeces of infants-fed on cow's milk are usually alkaline or neutral.

Perhaps the intestinal flora favoured by human breast milk aids the efficient utilisation of its protein.

The fact in freshly secreted milk is present in fine globules, many of which are very small indeed in diameter. Fat in this form is particularly easily digested. When milk is left to stand these globules run together to form cream. The fat content of human milk varies greatly, as does that of cows.

In some mammals the fat in this form is particularly

In the first instalment to the food value of milk both young and old was discussed.

In this instalment, the ingredients of milk are analysed.

easily digested. When milk is left to stand these globules run together to form cream. The content of human milk varies greatly, as does that of cows.

In some mammals the fat content of the milk is very high. The milk of whales and sea lions, for instance, contains over 40 percent of fat. In these, lactation lasts for a very short period, during which the mothers cannot feed.

The milk transfers an enormous quantity of fat from the mother to the young in the course of a few days. Elephant's milk contains 20 percent fat and reindeer milk 17 percent.

The carbohydrate in all milks is lactose. This sugar is much less sweet than cane sugar. Human milk contains more lactose than cow's milk. Cow's milk is frequently 'humanised' by diluting and then adding cane sugar or glucose. The young infant thus becomes accustomed to an unnaturally sweet food at an early age.

Calcium is present in all milks in good quantities. Human milk usually contains between 25 and 35 mg./100 ml. Cow's milk contains about 120 mg./100 ml. The calcium is present chiefly in combination with caseinogen.

For some unknown reason milk also contains significant

Continue on page 16

Typical analyses of milk from various species
(All values in g./100 ml.)

	Carbohydrate	Protein	Fat	Calories
Human	6.8 (6.2-7.6)	1.5 (0.6-2.0)	4.0 (2.0-6.2)	68
Cow	5.0 (4.2-6.8)	3.5 (2.5-4.0)	3.5 (3-6)	66
Buffalo	4.5	4.3	7.5	103
Goat	4.5	3.7	4.8	76
Ewe	4.9	6.5	6.9	109
Mare	5.7	1.3	1.2	29

Continued from page 15

MILK

amount of citric-ud to 0.23 mg./100 ml.—which must reduce the ionisation of a small part of the calcium.

Nevertheless the calcium in milk is generally more readily absorbed than that in other foods, probably because of its combination with amino acids. *Milk is thus a most valuable food for the formation of bone.*

Phosphorus is found in human milk in concentrations of 10 to 20 mg./100 ml. Cow's milk may contain 100 mg./100 ml.

Iron.—Milk contains very little iron. All milks provide 0.1 to 0.2 mg./100 ml. Young mammals depend for their initial supply of iron on stores accumulated during intra-uterine life.

In the human infant these stores are sufficient for only 4 to 6 months, and if iron is not then provided in the diet anaemia is likely to follow.

Vitamins.—The vitamin content of milk often reflects the vitamin content of the mother's diet. This is important in the case of thiamine.

Thiamine.—Infantile beriberi is liable to occur in breast-fed infants when the maternal diet is deficient in this vitamin. The thiamine content of mother's milk in Europe and North America falls within the range of 10 to 20 ug./100 ml. Once lactation is fully established, though in the first 14 days of lactation it may be less. Cow's milk contains about 45 ug./100 ml.

It has been established that the thiamine content of the milk of Eastern women with healthy babies also falls within this range. But the milk of some women whose infants were believed to be

thiamine-0 to 6 ug./100 ml.

To raise the thiamine content of the milk of these women to a level safe for the children (15 ug./100 ml.) a supplementary supply to thiamine was necessary.

The Riboflavin content of human milk in early lactation about 20 ug./100 ml. Cow's milk may contain 200 ug./100 ml. The riboflavin content of milk seems to be very much dependent on the dietary intake of the pregnant woman or animal.

The Nicotinic Acid content of milk has been little studied. It was detected that European women in Johannesburg gave milk with a nicotinic acid content between 110-300 ug./100 ml. but Bantu women's milk contained 15 to 140 ug./100 ml. Cow's milk contains about 100 ug./100 ml.

Provided the mother's diet is not grossly deficient, human milk is a satisfactory source of the B group of vitamins, as also is cow's milk which, in small quantities, will usually cure angular stomatitis, glossitis and other conditions associated with riboflavin and nicotinic acid deficiency.

Ascorbic Acid is usually present in the milk of British mothers in amounts between 2 and 5 mg./100 ml., so that their infants may receive up to 50 mg. daily, which would appear to be more than adequate. Cow's milk contains much less—only about 1 to 2 mg./100 ml.

This small amount is easily destroyed by pasteurisation and boiling of milk or allowing it to stand in sunlight. Poor's milk is thus a relatively poor source of ascorbic acid,

and infants fed solely on cow's milk must be given a supplementary source of this vitamin.

Vitamin A.—British mother's milk usually contains 25 to 45 i.u. of vitamin A/g. of fat and in addition a small amount of carotene. Unless the mother's diet is grossly deficient breast-fed infants appear to receive a sufficiency of this vitamin.

Keratomalacia is very rare in breast-fed infants. Cow's milk has a vitamin A content which varies from 70 to 150 i.u./100 ml. It is higher when the cows are out in good pastures than when they are stall-fed.

The Vitamin D content of human milk has been little studied. A recent report reckons it to be between 0.13 and 0.41 i.u./g of milk fat.

Continued from page 14

BREAD

Because of the attraction of white some flour producers even often go to the extent of bleaching the flour. Acids such as chlorine, nitrosyl chloride or benzoyl peroxide are added. These further whiten flour. In place of the losses—vitamins and proteins—they add iron, calcium and some trace vitamins. In all, the flour is affected by about fifteen different drugs before it is ready for baking.

A recent report on this practice says it is questionable to remove something and later try to put it back. Although these properties may be returned, their mixture can never be the same as a natural blend.

As many as have come to know the different kinds of flour so many have wondered why so much unenriching

vision controls taste and taste in turn controls value. In many cases, when vision is eliminated as in tobacco, taste controls value. Thus, the colour which appeals to many as being clean overrides other properties.

HEALTH GIVING BREAD

Leading dietitians say that bread that is baked from whole grain, without addition of sweeteners and preservatives, is the best bread. It should be eaten together with other suitable foods, such as certain vegetables that help the body make use of all the nutrients of the full-grain bread.

Interestingly, bread that was baked in many places during the second world war, when a shortage of raw materials forced many to grind the whole grain, was more healthful than much of the bread that is baked today. The reason is that

the necessary vital substances and minerals than ordinary white bread."

SOURDOUGH BREAD THE BEST

As many often do, one may wish to know the most nutritional bread. Bread has an ancient ancestry. The origin is from leavened or sourdough bread baked according to a recipe that is so old that no one knows exactly when it began.

Historians know that it was used by the ancient Egyptians, Jews and Romans. The Bible also speaks a lot about leaven and leavened bread. Leaven was the fermenting agent used by ancient peoples, and nutrition researchers can guarantee that for thousands of years sour bread had good reason to be called the 'staff of life.'

This is because of its very high nutritional value. By way, smell the delicious aroma of the rich, flavoured bread in this...

MILK IS

GOOD FOR

YOUNG PIGS

A regular dose of milk given to young pigs has proved beneficial. These pictures show how to help the young animals.

X X X X X

In picture on the right milk warmed to body temperature is drawn through a small tube into a syringe.



● THE pig is held vertically, the mouth forced open by squeezing with thumb and finger. The tube is lightly forced about 3 inches down the throat. Most pigs swallow as the tube reaches the back of the mouth.

● MILK is forced into the stomach by pushing the plunger of the syringe.

Placing the syringe in the holder allows one handle the feeding unaided.



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PASTURE is the cheapest feed for sheep, so make full use of it. Sheep eat a wide variety of grasses, but prefer those that are short and fine.

Native grass mixed with other grasses, such as clover, fescue, and orchardgrass, is excellent pasture for sheep.

A top dressing of nitrogen on grass will insure extra early growth. One acre of well-established grass, properly managed and fertilized, is enough to graze five or six ewes. If pasture is unimproved, 1 acre may carry only two or three ewes.

Start grazing grass when the new growth is 3 to 6 inches high. No other feed is necessary when grass is young and abundant.

Do not rely on grass alone for pasture. When it begins to dry up, put your sheep on temporary pasture.

Good-quality legume hay, preferably alfalfa, is the best in-door feed for sheep. It contains the needed proteins, vitamins, and minerals. If you feed mixed or grass hay, you should include protein supplement (linseed or soybean meal) daily with the hay to balance the ration.

Three to four pounds of alfalfa or other hay a day is enough for a ewe weighing 140 pounds or less. Start to feed hay as soon as ewes are taken off pasture in the fall and continue to feed it until ewes are back on pasture after lambing.

Hay is usually fed for about 5 months, but the length of time will vary with the season and kind and amount of pasture available.

Most of a sheep's living comes from pasture and hay. Grain is fed only at certain times during the year. Ewes generally need grain about 100 days. They should have grain 30 days before lambing. If ewes nurse lambs after lambing, continue grain

daily until spring pasture is available.

One-half to three quarters of a pounds of grain a day per ewe is enough. Feed the grain that is most economical for you. Ground shelled corn is an excellent feed for sheep, especially, if you want them to gain weight. Ground oats and barley also are satisfactory.

If you buy a ram to breed your ewes, get him well in advance of breeding

hand shears. This make it easy for newborn lambs to nurse.

Separate every ewe about to lamb from the rest of the flock, and make sure that she does not lamb outside in cold weather.

Just before or shortly after she lambs, put her in a dry, well-bedded lambing pen. Set the pen up in the warmest part of the shed or barn. See that there are

lambs get the ewe's first milk (colostrum).

Keep the ewe and lamb in the lambing pen for 12 to 24 hours. This allows a "mothering up" period and saves lambs that might be disowned or trampled.

After lambing, add grain gradually to the ewe's feed. By the time her lamb is 10 days or 2 weeks old, she should be getting a full ration of grain or concentrate along with hay.

KEEPING SHEEP HEALTHY

Watch sheep for signs of disease. Some diseases can be helped by home treatment, but most of them need the attention of a veterinarian.

You can help prevent disease by—

- Starting with, and adding, only healthy sheep from healthy flocks.

- Housing sheep in clean, dry, well-ventilated quarters.
- Feeding properly and providing clean water.

- Sheep are attacked by many parasites. Prevention of these parasites is better than cure. Ask your local officer for information on parasites and on the diseases that parasites cause in sheep.

You can help control parasites by—

- Treating (drenching) at least once a year for internal worms.

- Keeping medicated salt available at all times.

- Dipping for lice, mange, mites, and other external parasites if necessary.

- Weaning early.

- Changing pasture whenever possible. Pasture rotation is important in parasite control.

LAMB FOR YOUR TABLE

Generally a lamb can be slaughtered for home use any time after it reaches 100 pounds liveweight. Most ewe lambs are kept for the flock.

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LET'S

RAISE A SMALL FLOCK OF SHEEP (2)

by Herdsman

time so he can get used to his new home. Give him a little grain to get him in good condition.

When your flock is small and you only use one ram, you need a way of knowing when each ewe has been bred so you can figure out when she will lamb. Pigment smeared on the ram's brisket every day or two shows which ewes he has mated.

Any commercial colouring (yellow, red, or ordinary lamp black) can be used. Mix the colour with castor, linseed, or old crankcase oil.

After 2 weeks change the pigment colour and watch.

LAMBING

A good sheepman prepares for lambing time. Extra care at this time saves lambs and keeps ewes in good condition.

As lambing time nears, observe the ewes closely. At least 2 to 4 weeks before lambing, clip wool and tags around the udder and hind-quarters of the ewes with

no drafts.

A well-fed ewe seldom has trouble in lambing.

However, if a ewe strains strongly and does not deliver within 30 minutes, get help from a person who has had experience delivering lambs. If such a person is not available, call a veterinarian. Make sure ahead of time that you can get help quickly if you need it.

Shortly after the lamb is born, dip its navel cord in a 4 percent solution of iodine. This helps prevent navel infections. Make sure that the lamb is dried promptly and does not chill.

Be sure that the ewe has "taken" to her lamb and that the lamb nurses within 30 minutes. Most lambs stand on their feet and nurse without help shortly after birth.

If the lamb is weak, help it to nurse. If the lamb is cold, get it warm as soon as you can.

After the lamb has gained a little strength, it usually gets up by itself. If it does not, repeat the feeding. It is especially important that

Continue from page 19

SHEEP

100-pound lamb usually yields a 50-pound carcass and about 35 pounds of meat.

Lambs reach 100 pounds in 110 to 140 days. A lamb more than 1 year old does not put on enough weight to pay for its feed.

Extra feed can be made available to any healthy male lamb you want to slaughter, for home use. You can either see that he gets more concentrate on pasture, or you can confine him and give him extra concentrate.

The day before slaughter pen the lamb so he can be caught easily. Give him plenty of water, but withhold all feed for 24 hours before slaughtering. This marked dressing simpler.

Keep granular iodized salt before sheep and lambs throughout the year. If there is a shortage of certain minerals in your area, it may be desirable to use traced mineralized salt. Locate the salt box where it is protected from the weather, near the water supply, and in a shaded spot when possible.

Equal parts of ground limestone or steamed bone meal can be mixed with the salt.

As an aid in controlling internal parasites, phenothiazine may be mixed with the salt. Your Vet. Officer or sheep supply store can give you information on amounts to mix.

See that fresh, clean water is available to the flock at all times. Pregnant ewes and nursing ewes require large amounts of water in winter if water is warmed,

Continue from page 16

BREAD

It is to the credit of some Nigerian bakers that palm wine has been used occasion-

ally to cause quick fermentation. The correctness of this experiment needs approval however from a certified analyst.

How is a good bread made? Rich bread has a very stimulating aroma. Varied opinion say that sourdough once came into existence simply because someone in ancient times left a mixture of flour and water to stand for a while.

Later it was found that the baked from the dough became porous and had a delicious tartness. Besides possessing yeast spores, sourdough contains bacteria that produce lactic and acetic acid, which give the bread its agreeable tangy taste.

CAN ANYONE MAKE A GOOD AND RICH BREAD?

Yes, that is possible, but it isn't always easy to get a bread with a fine aroma. This is because there is an endless variety of sourdough bacteria, depending on the stiffness of the dough, its temperature and the time that the dough is allowed to stand, the aroma, develops in many different ways.

Therefore, making a really good sodourough bread is recognised as one of the most difficult achievements of a baker.

"When a wife in ancient times succeeded in making a good sourdough bread, a bread the family members relished, she was wise enough to save a bit of the dough.

This was then mixed with enough flour to form a hard ball, and was used the next time she would bake. The ball was then dissolved in warm water. Of course, she was unaware of what happened to the doughball.

Now we know that the bacteria are awakened to life by the heat, and that they quickly multiply in the new

dough and secrete lactic and acetic acid until the whole dough is permeated.

ADVANTAGES

"What advantages does sourdough bread have?", anyone may bother to ask.

The housewife of ancient times noticed that her family members thrived extremely well on sourdough bread. She couldn't explain why, but a modern nutritionist can. He says that sourdough bacteria build up protein of the same nutritional value as beef protein, and that the yeast spores and bacteria work together to widen the protein value of the bread.

But sourdough bacteria accomplish a very good work in another way. When the dough becomes more acid, the heat-sensitive vitamin B, is preserved much better, and that means that the bread will be richer in vitamins.

The ancient housewife had still another advantage with her flour. She ground only the day's supply of flour, so that she always had newly ground flour when she baked. That was important for both taste and nourishment, since the quality of flour deteriorates through storage.

The outer shell of the kernel, the bran, was included in the flour. This is important, for the bran contains valuable mineral salts iron for the blood, phosphorus for the nerves and skeleton, and many other vital substances. A venturesome housewife can make good bread if she cares but.....

There are many fine recipes for sourdough bread. Very important in its preparation is the making of the sour. This may, for example, be made of 21 percent rye flour, 21 percent clear wheat flour, 33 percent cultured or plain buttermilk (milk with the highest possible acidity are best), 23 percent water, about

1 or 1½ percent each of powder and salt.

The milk powder and first are dissolved in water, and then mixed the buttermilk. Afterward flour is mixed in by 1. This sour should be allowed to set for a day or two room temperature.

Then use about one pound of this sour for every pounds of flour in the mix of your bread, varying proportion slightly depending on the degree of sour desired.

There are, of course, a ways of preparing the Unpasteurized milk sour: different temperatures over varying lengths of will produce different flav in the finished bread.

Also cider vinegar, saw raut juice and souring from pickle manufacture be used in making the so

Why is it that commercial bakeries do not make a sourdough bread tod

"Sourdough baking process that takes much and requires know how order to be good taste. The baking must always adjusted to the grain and the daily weather. In for countries, a lot of sourdo bread is still baked, especi of rye.

But one must become accustomed to the new taste and the stomach must be accustomed to the acid

IT
PAYS
TO
ADVERTISE
IN
FARMSTOCK

ELECTRICITY BRINGS CHANGES TO FARMING METHODS (3)

by
J. A. C. WEIR

Agricultural and Horticultural
Section, The Electricity
Council, London.

THE MOST significant change which has taken place over the past few years in both cereals and hay-drying techniques had been the reduction in heat requirement to the point with some system where it is no longer required.

Where heat is still needed, the reduced requirement tends to favour the use of electricity as a heat source in preference to other fuels.

DRYING CHOPPED HAY

The most recent development in crop-drying has been the adoption of the low-cost Dutch hay-drying technique for the drying of chopped hay. This is basically a system by which the stack of chopped hay, brought in from the field at a moisture content of between 30-40 percent., is radially ventilated from a central vertical duct with unheated air.

Although still at a development stage, it is hoped that chopped hay will be more suitable than bales for use in a fully mechanised system, showing a major reduction in labour requirements.

Increasing interest is being shown in the conditioning and storage of root-crop vegetables by ventilating the stored crop with warmed or cool ambient air. Onions can be successfully ripened, in a bulk store, by ventilating with warmed air at a high humidity, thus avoiding the spoilage so often experienced with field ripening. Cured onions, carrots and potatoes can be stored, in bulk, well into the Spring by selective ventilation, using cool ambient air.

Such selective ventilation can be effected automatically

In this final instalment, modern applications of the power of electricity are discussed-

by means of thermostat control which allows ventilation to take place only when the temperature of the ambient air is lower than that of the stored crop.

A relatively new development in crop conservation has been in the techniques of chilled-air conditioning. By conditioning moist grain with chilled air so as to reduce its temperature within the range of 4-10 degrees Centigrade (39.2-50 degrees Fahrenheit) and maintaining it at this level, the grain can be stored in bulk, without deterioration, for several months.

This technique has been quickly and successfully adopted by farmers and special chilling units for this purpose are now on the market.

Chilled-air conditioning as a means of conservation has certainly not been confined to cereal crops as trials now suggest standard shilling units could also be used for conditioning vegetable crops such as carrots and potatoes for long-term storage, and crops such as celery, lettuce and soft fruits for short-term storage.

FUTURE CHALLENGE FOR ELECTRICITY

Although electricity is already having a considerable impact on agriculture and horticulture, this can still

only be regarded as a beginning.

By the turn of this century we shall not only have seen the last of livestock in the field but fundamental changes will have taken place in arable and forage cropping, glasshouses, as we know them now, may well have all but disappeared. Livestock and horticultural holdings will, more than likely, consist of groups of specialist controlled environment, windowless buildings with little or no adjoining land.

Manual supervision in all production units will have been effectively minimised by the use of programmed, automated mechanical processes with secondary monitoring systems controlled from a central point by means of closed-circuit television scanning devices.

Certain arable and forage crops will no longer be traditionally produced in the field; they too will be subjected to production-line growing within a controlled environment.

Most significant of all, the computer will then have become as much a part of the farming scene as the combine harvester is today.

YOU MAY NOT HAVE NOTICED THIS IN OUR LAST ISSUE UNDER NEW EQUIPMENT:-

RUSSIAN PORTABLE ELECTRIC STATION

KIRGHIZIAN shepherds have received an excellent present. Engineers of a branch of the Frunze Electro-mechanical Research Institute constructed a tiny power station.

It weighs a little over 20 kilograms and can be carried in an ordinary suitcase. All that is needed to put it into operation is a mountain rivulet or even a brook.

Water, supplied with the aid of a flexible nylon pipe, revolves the miniature turbine. The energy thus produced is sufficient for lighting the shepherd's house and the sheep-yard pens.

Several hundreds of these popular micro-hydropower stations had been purchased by collective and state farms recently.

For further particulars on landing cost in Nigeria please contact: The Commercial Attache; Embassy of U. S. S. R.; 28 Kofe Abayomi Road, P. O. Box 3229; Lagos.

LAUGH !!!

"Laugh and the whole world laughs with you, frown and you wrinkle your face alone."

AT the end of a long journey, three friends arrived in a hotel feeling beastly hungry and ordered for lunch. The waiter understood and hurriedly returned with three large akara balls while the main menu was being prepared. Two of them were about to pounce on their share of the akara balls when the other piously said, "Brethren, let us pray."

They immediately closed their eyes, but one of them grew suspicious and merely covered his face with his hands and was watching. The chap who offered to pray then said slowly and reverently "Thanks be to father," and as he said this, he took one of the balls and ate it. Then he said "and to the Son" and took another akara and ate. As he opened his mouth to say anything else, the man who was watching said furiously "if you touch the Holy Ghost, I'll stab you."

x x x

A teacher was trying to give her class of minors an idea of population of China. She told them that for every two persons in the world, one was a Chinese. She went further to bring home the idea. Said, she "every time you breathe in and breathe out, a

Chinaman dies" A five-year-old named Sankey sitting in a corner of the class became thoughtful and then suddenly started breathing in and out rather vigorously. The teacher turned to him and asked, "Sankey what are you doing?" "Killing Chinamen," replied Sankey panting for breath.

x x x

A conductor in a Lagos bus was reproving a passenger sternly for smoking in his crowded public transport. "I expect you can read and understand", said the conductor in the bus, "don't you see that notice which clearly states '9 standing, no smoking?'" "But I am sitting," replied the passenger, "the notice is intended for 9 passengers standing."

x x x

TWO school boys were on pedestrian side of Carter bridge watching fishermen making their catches. Then Olu remembered an arithmetic problem and put it to his friend, "A kin" he said, "A herring and a half cost three half pence what is the cost of 12?"

Akin looked up and then down, took out a piece of chalk from his pocket and was trying

to work out the answer until all the available space on the bridge where they stood was covered with figures. Then he looked up suddenly and, asked "Olu what is the problem again?" Olu said "A herring and....."

"My goodness!" exclaimed Akin "No wonder I cannot get at the answer, I was reckoning with 1bru fish instead of herrings."

x x x

A parson was reproaching a member of his congregation for being habitually drunk. He said "Kente, you know that drink is your enemy why don't you try to avoid it?" "But, parson!" replied Kente, "you have told us often enough that we should love our enemies," "Oh yes, Kente!" said the parson, "love your enemies indeed, but do not swallow them."

x x x

A man in a booze managed to get to the door of his flat and for some time was fumbling with his key. It soon became obvious to the passers-by that he was having difficulty in opening the door.

One of them came to him and asked if he could be of help. "Yeah guy!" he said, "just hold the door to keep

it steady, while I slip the key into the hole."

x x x

Continue from page 9

PLANNING A LAYING UNIT (1)

The biggest disadvantage the plan is that the rear houses stand idle for most of the year, from Christmas until the early rainy season and during that time they are earning no money. Big profits per bird are necessary to compensate for this disadvantage.

Next month: Planning Laying Unit Part 2

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