AMBASSADOR COLLEGE UNITED KINGDOM

# Your Living Environment

Vol. I No. 10 1st October, 1970

## GRAIN -- A DANGER TO MAN!

Today the world agrees that the solution to its food crisis lies in grain production! Prodigious sums of money, talent and resources are devoted to producing more and more grain. Why don't nations and international organizations devote their time and money to increasing the world's production of animal protein? The way to achieve this is simple -- by expanding the total area of improved pastures and raising soil fertility!

Instead, world agriculture moves consistently in the opposite direction -- toward even greater dependence upon grain. Why? Because men make one simple false assumption -- that an acre of grain equals more food than the meat or milk from an acre of grass!

From this issue of Your Living Environment you will see that a starving world is producing too much grain and that such a policy is opposite to the way mankind should be going. We present evidence to show that basing world agriculture on grain production is a serious threat to man's food, health, environment and financial interests. In the past, the trend toward grain production may have been almost unintentional. But today it is foremost in the minds of the most influencial international food planners -- yet it endangers our very survival!

So what! Everything "endangers our very survival" today! True. This is just one more threat, but it is one that few people know about. And Ambassador Agricultural Research now brings you this information, we believe, for the first time ever!

### Food Value Per Acre -- Grain Or Grass?

If only man would get his priorities right he would believe that an acre of land produces more nutritional value under grass than under grain.

The following table and comments prepared by Dr. K.L. Blaxter, (Director of the world-renowned Rowett Research Institute, Aberdeen) proves this:

| Human food output per hectare (2.47 acres) | | Milk Production | Cereal Production |
|---|---|---|---|
| Dry matter | kg. | 1420 milk solids | 3557.5 flour |
| Calories | Mcal | 8512.5 | 14,585 |
| Protein | kg. | 397.5 | 460 |
| Lipid | kg. | 455 | 42.5 |
| Lysine | kg. | 31.5 | 10 |
| Threonine | kg. | 18.8 | 9.3 |
| Thiamin | g. | 4 | 2.8 |
| Riboflavin | g. | 17 | 2.5 |
| Nicotinic acid | g. | 6.8 | 30.3 |
| Calcium | kg. | 107.5 | 5 |
| Phosphorus | kg. | 85 | 35 |

The milk production figures are based on grassland yielding 11,045 lbs dry matter converted to 9512 lbs milk per acre. The cereal production is based on wheat yielding 40.5 cwt (75 bushels) per acre, with 15 percent moisture content.

"The results show that the calorific yield is much greater when good land is used to grow bread grains rather than to produce milk. At least 50% more biologically useful calories can be obtained from the cereal crop in terms of flour yield than from the milk produced. This is the only major nutrient however, in which the cereal crop excels. Intensive milk production and wheat growing produce similar amounts of protein. These proteins however, differ markedly in nutritive value for man. Direct experiment with man shows that the biological value of wheat flour proteins is 41, while that of milk proteins is 74. The difference stems from the deficiency of wheat proteins, and indeed all cereal grain proteins, in the amino acids lysine and to a lesser extent threonine. The yields per hectare from dairy production of lysine and threonine are three times and twice those from cereal production. With the exception of nicotinic acid, yields of vitamins of the B complex group are greater for dairy production than for cereal production and so, quite obviously are yields of calcium and phosphorus (vital for strong bones and health)." (Science Journal, May 1968, pages 55,56).

The table proves beyond a shadow of doubt that a hectare of grass, producing milk, yields far more of the proteins and minerals so badly needed by the hungry nations than does a hectare of grain!

Dr. Blaxter based his calculations on a wheat yield of 75 bushels per acre. He couldn't be accused of exaggeration. Had he used the average yields of major producers like Russia, the U.S.A. and Canada, his chart would have been different. Their yields are less than half the figure he used and that would have weighted the table even more heavily in favour of grassland food production as the best way to feed mankind a balanced diet!

## How Much Grain Does Man Produce?

You and I may accept Dr. Blaxter's table, but can a starving world take a chance and institute a massive swing to producing animal protein? Perhaps not, if we are short of grain! However, look at the latest figures:

The 1970 Statesman's Yearbook records that in 1967, the total world-wide production of rice, wheat, maize, oats and barley was just over 1,000 million metric tons. A figure like that does not mean anything unless we know how many people it will feed for a year.

## How Much Grain Does Man Need?

Nutrition books tell us that the average person in the Western world eats about 200 lbs. of grain annually. That means one metric ton (2,205 lbs.) would feed approximately eleven people per year.

Therefore 1,000 million metric tons would feed 11 billion people. World population is now said to be 3.5 billion, so in 1967 the world's farmers produced more than THREE times the total annual grain needs of mankind!

Rough figures perhaps, but they leave plenty of margin for error. And more important, they bring into perspective man's frantic efforts to breed new grain varieties, to build more fertilizer factories, to manufacture more and bigger farm machinery and to bring more pasture-land under the plough!

## Man On A High Grain Diet

Every nutrition expert has said at some time or other that lack of protein is mankind's most acute food problem. And many admit that they really mean -- animal protein! (Those who don't, need only refer to Lev.11).

Grain does not satisfy man's real need for high quality protein. Only meat, milk, cheese and eggs can do that! The high grain diet of the world's masses provides only vegetable protein. It is a protein of poor quality too where you have the usual combination of low soil fertility and artificial fertilizers!

## Where Does All The Grain Go?

If man could not and should not eat more than one third of today's total grain production, where is all the rest going? The following grain consumption figures for the year 1969/1970 are supplied by The Ministry of Agriculture. They provide an interesting answer:

Total consumption of all grain in the U.K... 22,250,000 tons
" " " " " by humans.... 7,950,000 "
" " by animals in the U.K..... 13,350,000 "
Grain for export, seeds, etc..... 950,000 "
(Farmer & Stockbreeder, December 9, 1969, page 85).

So! Two-thirds of Britain's grain is consumed by animals!! The same pattern of grain usage exists in most other developed countries that are themselves large producers of grain. Britain even feeds two-thirds of its grain to animals in spite of the fact that she has to spend around £200 million annually on wheat imports!

Millions of livestock around the world are not fed GRASS, or HAY, which are the materials their digestive tract is designed to handle. Instead much of our animal protein is today produced by feeding large quantities of low-quality grain. With present farming methods there is no shortage of this kind of grain! In fact we wonder if North American and U.K. cattle are raised to produce beef, or to consume embarrassing surplus, cheap, low-quality grain!!

## Grain-fed Animals -- Why?

The fact that cattle can be successfully brought to suitable slaughter condition without grain-feeding is regarded by American Agriculture as a recent discovery. Even today, few people over there know about it!

Hi. W. Staten, in his book Grasses & Grassland has shocked a lot of people. He writes: "Cattle fed on good pastures will produce milk or beef at about one fourth to one fifth of the cost of dry-feeding (through the use of grain plus a certain amount of hay or straw)." (p.19).

Elsewhere he continues: "Total digestible nutrients produced by green pastures cost about one fifth as much as those produced by general grain crops. Kansas reports that the cost of producing corn and oats to be six to seven times that of producing pastures, and other states find comparable feeding costs."

"Cows turned onto good pastures from the best dry-lot feeding maintain or increase their milk flow." (p.63,73)

Sufficient evidence here to make any of us wonder if our modern ideas on the production of animal protein need rivising! It is a pity that Professor Staten does not go on and show the other side of this "dud" coin -- a high grain diet tears up the digestive tract of ruminants by pH levels 100 times more acid than in those eating grass. Livers become abscessed and are condemned as unfit for human consumption, but if the bodies they service can walk into the slaughterhouse, then they are sure to make-it onto your dinner-plate!!

## Excess Grain Production Effects Soil Too!

Today these misguided world-wide demands for grain have stimulated the conversion of millions of acres from grassland and forest to crop production. As the following comment testifies, it is these grainfields that are largely responsible for the world's biggest agricultural curse -- soil erosion:

"Data from the Soil Conservation Experimental Station at Bethany, Missouri, show that corn (maize) growing continuously would allow 50.93 tons of soil to leave the field annually, but a good Kentucky bluegrass sod would lose only 0.16 tons of soil." (Ibid, p.8).

Another unhappy result from excessive grain production is now rearing its head in England -- yes, even in England -- the total breakdown of SOIL STRUCTURE! The seriousness of this situation was the subject of an alarming report presented recently to The British Ministry of Agriculture by one of its own chief advisors. Thousands of acres of land in England have been so abused by over-cultivation, heavy machinery and continuous arable farming that not even grass can be profitably grown on them for years to come!

## How Much Grain-land For One Man?

Have you ever wondered how much land it takes to grow enough grain for one man? Would you guess -- 50 acres, or perhaps 10, or 5, or maybe even 1 little acre? One acre of land of average fertility will produce 2,000 lbs. of grain. We assumed earlier that 200 lbs. of grain per year would take care of a man's needs in this direction. Therefore one acre would feed TEN people with 200 lbs. each!

Calculated at the rate of England's average wheat yield per acre, the College Gymnasium floor area would provide the grain needs of a family of FOUR people!! In other worlds a family would easily supply its own needs from a large garden. Imagine the fantastic change in man's environment world-wide if most of the grain production was moved into the family garden and brought under correct soil management!

Given a little more land, the average family would also be able to graze three or four ruminants and thereby be self sufficient in animal protein too! So the danger to man and beast from millions of acres of featureless, badly managed, wrongly used and deteriorating grain-land would quietly pass away.

Man may finally come to understand that both his nutrition and his environment would be a whole lot better off with fewer "Egyptians" and more "servants" who can truthfully say that they "...have been keepers of cattle from our youth..." (Gen.46:34).

It is the diet of the average man and many animals that should be viewed as an "abomination", NOT the occupation of sound husbandry!!