Food Production – Problems and Prospects

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ABSTRACT: This paper reviews the different problems associated with food production in relation to population growth. A number of solutions are put forward to improve the situation.

Introduction

The world’s population was about 2.5 billion in 1950, it was estimated to be 4.8 billion in 1985 and is projected to be 6.1 billion in the year 2000 and 8.2 billion in 2025. While six countries have life expectancies at birth of 40 years or less, there were 16 less developed countries among the 25 most populous countries in 1984. In 2025, it is expected that there will be 22, with many of the new additions being countries from sub-saharan Africa.

The total population of the world in 1984 was estimated to have reached 4.763 billion, with an annual growth rate of 1.7%. The world population has nearly doubled in the past quarter century. In the past 10 years, it increased by 760 million, which is roughly equivalent to the combined population of Africa and South America.

The United Nations 1978 estimates for Nigeria confirmed the imbalance between food production and population (Tab 1). There has been a gradual decline in per caput food production since 1971. The recent estimate shows that Nigeria is experiencing deficits in the production of all major food crops in recent years. This was also reported by Ilori (1973).

It is apparent that there is a great problem ahead. The study has shown a serious and challenging problem, that while the expansion of production of food for man certainly could be much increased and the tempo of such an increase much intensified, that expansion would be on an arithmetic basis only, whereas the increment in human mouths is on a logarithmic. This pressure of population in relation to the food-producing potentialities of the region or of a particular country and to the possibilities of providing additional nutritional requirements from external sources is felt now and will continue to be felt throughout the tropics and the subtropics.

A means should therefore be explored by which more food will be produced at least to reduce this apparent shortage.

Populations are rising at an alarming rate, but the ability of many African countries to produce enough for themselves has been gradually declining over the past 20 years. Emergency measures should be introduced before it is too late.

The problem of food availability in Nigeria is one of the major manifestations of the current agrarian crisis facing this country today. Food production problem involves technical, environmental, social, political and economic. Any attempt to eliminate the food problem in the country must note that agriculture is not just a tech-
Technical problem but also involves marketing channels and institutions, input supply institutions and channels of distribution, communication facilities and extension organisation; food processing, preparation and nutrition, research manpower training, and social organisation of viable production units.

The scientific and technological methods used to increase food production

a) Mechanisation/farm machinery of all kinds e.g. tractor, harvester etc. now used instead of manual labour and draft animals hence increased total acreage farmed.

b) Irrigation/irrigation of land made water available to grow crops in arid places. This also reduced dependence on seasonal rains at other places.

c) Fertilizers/mining of naturally occurring deposits of nitrates, potassium, phosphates, extensive cultivation of legumes.

d) Control of weeds and insects/ use of pesticides, such as DDT or chlorinated hydrocarbon and herbicides. These have reduced crop loss due to disease/pests, health of farm animals are also improved, introduction of biological control methods.

Anifowoshe (1978) identified Helminthosporium maydis (Nisikado and Miyaki) as the causal pathogen of maize leaf blight. The mode of entry of the pathogen was through the cuticle and sometimes through the stomata. Anatomical studies showed that there was total destruction of all tissues in heavily infected leaves.

Infection of the maize leaves by H. maydis resulted in 3.4%-8% loss of sugars, protein and starch respectively in NCBRbO2. In Upper Volta there was a loss of 36%, 33.4% and 44% in sugars, protein and starch respectively (Tab 2 and 3).

The result indicated that 6 weeks old leaves had the highest amount of sugars. The amount of sugars increased after 6 weeks in both varieties used for the experiment. The amount of protein increased with age of leaves up to 8 weeks old and later reduced gradually in quantity with age in NCBRbO2 but in UV the increase in protein extend up to 10 weeks old before a sharp fall.

Further work by the same author revealed the effectiveness of calixin – in the control of the fungus in vivo and invitro.

e) New varieties of farm animals, high yielding varieties of cereals, wheat/rice/corn etc. Disease resistant farm crops are more responsive to fertiliser application and cold.

f) Land reclamation-marshes, swamps, and other small bodies of water are “filled in” although there is problem of flooding.

g) Birth control through government legislation and contraceptive methods.

h) Soil conservation

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<table>
<thead>
<tr>
<th>Glucose</th>
<th>Fructose</th>
<th>Invert Sugar</th>
<th>Maltose</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>NCBRbO2</td>
<td>UV</td>
</tr>
<tr>
<td>4 weeks</td>
<td>4.003</td>
<td>3.867</td>
<td>4.021</td>
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<tr>
<td>6 weeks</td>
<td>4.275</td>
<td>4.093</td>
<td>4.294</td>
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<tr>
<td>8 weeks</td>
<td>4.093</td>
<td>4.003</td>
<td>4.112</td>
</tr>
<tr>
<td>12 weeks</td>
<td>3.913</td>
<td>3.867</td>
<td>3.930</td>
</tr>
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</table>

**Table shows the amount of sugars mg/ml**

*Weeks after emergence*

NCBRbO2 – Nigerian Composite Blight and Rust Resistant, Open pollinated.

UV – Upper Volta

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Tab 2: Amount of sugars present in healthy and infected leaves