

## APPENDIX "A"

THE ROLE OF AGRICULTURAL CHEMICALS IN FEEDING  
AN EXPLODING POPULATION\*

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The Reverend Thomas R. Malthus in his brilliant *Encyclopedia Britannica* article "A Summary View of the Principle of Population" stated in 1824:

"... that population, when unchecked, increases in a geometrical progression of such a nature as to double itself every twenty-five years" ... "But by the laws of nature ... the food which it produces ... must increase the means of subsistence only in an arithmetical progression."

In spite of the derision and disrepute into which the Malthusian Theory has fallen over the intervening years, Malthus was absolutely correct. The population of the world has increased geometrically, and in spite of wars, famine and disease has done so with surprisingly little deviation for about the last 7000 years.

## "DOOMSDAY" PREDICTED

Recently Foerster, Mora and Amiot writing in *Science* (Vol. 132 No. 3436: 1291: 11.4.60) computed the course of world population from 5000 BC till today and calculated "doomsday" as 13 November AD 2026. "Doomsday" is defined as the day when the population of the world arrives at 50 billion, or at 10,000 people per square mile of land surface. The present population of Japan (and the State of New Jersey) approximates 800 people per square mile.

Obviously any conceivable expansion of our food production will not be able to meet the minimal nutritional needs of a population approaching even 25 billion.

For today, with a world population approaching three billion, approximately four out of every five people die directly or indirectly from the effects of starvation. Between three- and four-fifths of the people now have an average daily gross intake of not more than 1800 calories per day, which is excessively aggravated by serious nutritional imbalances of both protein and vitamins. The World Health Organization of the United Nations reports that upwards of 50 per cent of the world's people ingest less than 1500 calories a day—a status of direct starvation.

The minimal arable acreage requirement to sustain one human in food (2200 calories/diem) and fiber was established in 1945 as 2.5 acres. In

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