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THE EFFECT OF SOILS, FERTILIZERS AND ENVIRONMENT ON THE YIELD AND NUTRIENT CONTENT OF PLANTS

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**The effect of soils, fertilizers and environment on the yield and nutrient
content of plants: Chairman's opening remarks**

By R. G. BASKETT, *National Institute for Research in Dairying, Shinfield, Reading*

Our Symposium deals with the broad and important subject of the factors which affect the yield and nutrient content of plants. Those of you who have visited Cornell University may well have taken the opportunity, as I did some years ago, of seeing some of the interesting work going on at the United States Plant, Soil and Nutrition Laboratory at Ithaca, which was given the task of doing research in the field we are to explore today. Much patient research work on the soil-plant-animal relationship has revealed the quite large differences in mineral, protein and vitamin content which can arise when the same variety of plant is grown under different soil and climatic conditions. Workers in the United States have also bred varieties of maize having markedly different oil and protein contents, although those with high protein contents have not always been outstanding so far as yield is concerned. In practice it is not possible to control all the factors affecting yield and nutrient content and some of these factors, for example mineral content of soil and rainfall, may act together or in opposition according to the relative strengths of the two factors. Thus in one situation a small change in rainfall or the availability of a minor element may bring about substantial changes in yield and nutrient content; in another, where opposing environmental factors are operating, the change in a further factor may be without effect. This may explain some of the conflicting results obtained in field trials designed to demonstrate the effects of environmental changes.

Each year brings new varieties of crops bred for special soil conditions and day length and new and speedier techniques for the examination of crops and soils. Elegant and practical methods are now available for the examination of protein quality and these are being used to good advantage.

Today we are to have papers from five authorities, each of whom will deal with a particular aspect of crop production.