

Agricultural Co-operatives in the U.K.THE CO-OPERATIVE COMPUTER

by

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Computers are almost commonplace nowadays and the farmer or grower who attends any major agricultural or horticultural show can hardly fail to notice the existence of the farm office microcomputer or of the microcomputer-based equipment for dairy parlours, field sprayers, glasshouses and so on.

The development of microelectronics has provided farmers and growers with a new and powerful set of tools which, properly employed, will enable them to improve the profitability of their enterprises, through more timely and precise control of their production and marketing procedures. Micorcomputers can bring this about in three ways.

Microcomputers - for Measuring

First, in combination with electronic sensors of one kind or another, they provide a range of measuring equipment for rapid and accurate determination of crucial quantities. For example, farmers who need to store grain must ensure that its moisture content is at a safe level, while pig producers need to keep a regular check on the feed-to-liveweight conversion of their stock. The former can now buy moisture meters which automatically apply calibration and temperature corrections appropriate to the type of grain being tested and automatically average the sample readings, thereby saving time and eliminating

human error. The pig producer can purchase an electronic weigher, coupled to a microcomputer, which can store and display individual and average weights of the stock.

- for Automatic Control

Second, the microcomputer can be employed for automatic control. For example again, electronic measurement of grain moisture has led to electronic control of grain driers. In the horticultural sector, electronic weighing of individual fruit and vegetables, combined with photoelectric colour sensing, is the basis of sophisticated equipment for automatic grading and packing of these crops.

- to Provide Information

Third, microcomputers process data presented to them automatically or manually, or both, to provide information - in readily assimilable form - on the progress of agricultural and horticultural operations (liveweight gains; milk and egg yields; environment in greenhouses and crop stores, etc.) and on the flow of money and materials into and out of the enterprises concerned. Furthermore microcomputers are becoming powerful enough to support the operational research models which allow farmers and growers to forecast the economic effects of their management strategy. Nationwide developments in communications networks between computers, coupled with the growth of computer-based commercial and technical data banks, will give the farm office computer automatic access to an increasing range of information and to more powerful operational research programs.

For the Co-operative Farmer?

How does all of the foregoing affect Co-operative farmers? Clearly, shared field machines, such as combines and sprayers, will have more electronic operator aids and control systems in the future. These are becoming standard features, rather than optional extras, particularly for larger machines. Livestock farmers can share central or mobile animal weighing equipment. Co-operative crop drying, storage, grading and packaging installations provide natural applications for automatic control, linked with recording of material transfers to and from individual farms. With regard to the third application of microcomputers - economic monitoring and forecasting - there is no doubt that the farmers in Co-operatives can benefit from this, too, both collectively and individually. The computer hardware is available and the software development costs need not be prohibitive, if they can be based on standard program packages.

In fact, at the present rate of development of data links by telephone or fibre optics cables, before long it will be economic for all the individual enterprises in a Co-operative to be linked together, via a central computer. This computer will gather, store and process information from within and outside the co-operative and will perform the economic analyses required by the farmers, individually and collectively.

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