

*The Eighth*  
*Lord Hastings*  
*Memorial Lecture*

1978



# *The Lord Hastings*

## *Memorial Lecture*

1978

DELIVERED BY

A.C. OWERS, Esq., M.A., Dip. Agric., F.R.Ag.S.  
*Director: Norfolk Agricultural Station 1960-1978*

THE ASSEMBLY HOUSE, NORWICH

7TH NOVEMBER, 1978

*It is requested that application is  
made to the Norfolk Agricultural  
Station for permission to quote in  
print from this lecture*

*Printed in Great Britain  
by H. G. Stone & Co. (Printers) Ltd.  
Wymondham, Norfolk*

*The Role of  
The Independent  
Experimental Station  
and its  
Impact on Local Farming*

---

Only twice in the long history of the Station has the opportunity arisen for a retiring Director to speak frankly about the Station — its origin, its management and the role it has played — and should be playing — in local farming activities. Dr. Rayns, in the 3rd Lord Hastings Memorial Lecture, dealt admirably with its foundation, its early work and the impact this had on the farming practice of the day. Prior to 1930, the greater part of Norfolk and the surrounding counties had been farmed strictly on the basis of the Norfolk 4-course rotation in which fodder roots and 1-year hay predominated. Both these crops had to be consumed on the farm either by cattle or sheep, neither of which were terribly profitable at the time. Rayns — in his paper "A Revolution in Arable Farming" — showed that the old turnips, mangolds and swedes could be replaced by sugar beet — a guaranteed cash crop which after the sale of the roots, still left nearly as much food for livestock as might be obtained from an acre of turnips or swedes. He went further — he showed that by replacing hay by vegetables such as brussels sprouts, potatoes and peas, it was possible to farm Norfolk land on a complete cash-crop rotation and one that was much more likely to remain economically viable at a time when corn prices were at a very low ebb.

In parallel with these revolutionary proposals, work at the Station had shown that such an all-arable rotation in the absence of livestock residues, need not result in a fall of productivity provided a high standard of husbandry was maintained combined with a liberal and judicious use of artificial fertilizers. From a critical assessment of the results of a trials series started in 1933 and continuing un-interrupted until after his retirement in 1960, Rayns was able to assure land-owners and farmers alike that a stockless system of farming need not result in any serious run-down of soil organic matter, should this system of farming be necessary or desirable because of shortage of labour or other prevailing economic stringencies.

In this paper, I propose to continue this theme by placing on record a Director's view concerning the management and requirements of the Station if it is to fulfil its accepted terms of reference — to serve the needs of the local farming community. Then, by one or two carefully selected examples I propose to examine how far it has been possible to achieve this objective.

This is the 8th lecture in the series — to remind us of Lord Hastings' unflagging interest in the Station over a period of more than 45 years and of the great contribution he made to Norfolk farming. It was my good fortune to be called into his presence in 1935 — fresh from University seeking my first appointment.

Again in 1950 I was to renew his acquaintance when I was appointed Assistant Director and came in much closer contact with him because of the absence through illness of my senior officer. My lasting memory was of an English country gentleman — an outstanding man of letters with great debating ability — but above all, a man sincere and forthright in all his actions. I am also very mindful of the authors of the seven previous memorial lectures and deem it the greatest of honours to be invited to follow such great names as Sir William Ogg, Sir John Hammond, Dr. Rayns and the more recent contributors.

Since later in this paper I shall be referring to the impact of the Station's work on the farming of the county, it may be as well to remind ourselves of a few of the statistics relating to Norfolk agriculture. From a total of just over a million acres, approximately 800,000 are under crops or fallow. Nearly a quarter of this (200,000 acres) is now sown to winter wheat and half as much again to winter or spring barley. This contrasts markedly with the position in 1925 when the Station first assumed its role as a local experimental centre. Then, the wheat area was just below 100,000 and the barley area was just above 100,000 acres. Over a period of approximately 50 years the proportion of the total acreage under wheat has risen from 11 to 20% and of barley from

12-30%. These massive increases were at the expense of permanent pasture, temporary leys and oats—which have slumped over the same period from 67,000 to only 12,000 acres.

Of even greater importance — and pertinent to this paper — is the fact that average yields of wheat have increased from 19.5 cwt in 1933 to 35.0 cwt per acre in 1975, the corresponding figures for barley being 17.5 and 28.0 cwt. It is not my intention to deal with the apportionment of this increase between varietal improvement and cultural practice. Suffice it to say that in a recent paper, Fiddian quoted figures of 62% for wheat and 44% for barley as being that due to varietal influence.

Mention must also be made here of the beet crop and of its contribution to the farming economy. In 1925, only 15,000 acres were recorded as being grown in the county as against 66,000 acres of fodder root crops. Today this is in excess of 100,000 acres—compared with just over 4,000 acres of fodder roots—and the crop is now a major contributor to the arable farm income. Yields over the last 4 or 5 years, because of exceptional climatic conditions, have been below those normally anticipated but the popularity of the sugar beet crop in the county can best be judged by the fact that even after a series of 'near disasters' there has been no substantial fall in the contracted acreage. So — cereals and beet account for more than three-quarters of the arable acreage in the county, and it is mainly on these crops that the Station's experimental work has been based.

Most of the audience here today are members or friends of the Norfolk Agricultural Station — there is no need, therefore, for me to dwell on it's origins or on it's subsequent development. Suffice it to say that the major change that has taken place since Dr. Rayns' paper in 1961 has been the move from the old centre at Church Farm, Sprowston to the new site at Morley. At the time the move was made, some members — particularly those in the east of the county — were of the opinion that work on the heavier, more difficult land at Morley would be less applicable to the easier-working East Norfolk soils. I think their fears have proved groundless, and certainly, the main work on cereals and sugar beet is just as pertinent to their conditions as was the original work undertaken at Sprowston.

Probably of even greater importance as far as the Station's impact on local farming is concerned is the fact that, at the new site, the relatively unstable soil is representative of farming conditions over a much wider area of the Eastern Counties than Sprowston could ever have been. As a result, it is now possible to extend to these areas a service that is not available to them at any comparable experimental centre. The initial work at Sprowston on the

maintenance of soil fertility has been extended at Morley under more difficult cropping conditions and there are already clear indications that in spite of less favourable circumstances the same tenets of good husbandry as determined by Rayns at Sprowston still hold.

Bearing this major change in mind it may be helpful to record some of the more important principles that have been observed in determining both the Station's experimental and farming policies. Started as an experimental centre for its farmer members, the main plank of its trials programme has always been the needs of the local farming community. Even the lay-outs of the trials, although based on sound statistical principles, are planned in such a way that they can always be used for farmer demonstration. No farmer has ever been so convinced by a series of figures as by being able to see the growing crop and judging for himself!

The content of the trials programme has always been a point for argument. For any small independent station, it must be wide-ranging and varied, for only by this means can it hope to maintain the continued interest of the farmer members. On the other hand, too wide a range of topics under examination may spread available resources so thinly that the results are only of very limited value. In theory, the basis of any sound on-going programme should be the ability of the planner to pre-judge the problems that are likely to arise in the near future — to work on them before they become critical — and to be ready with the answers as soon as the questions are posed. This demands a considerable degree of flexibility in the programme and the authority to make variations at short notice in order to pursue the more promising lines of investigation.

At the same time, no independent station will achieve its maximum impact if it deals solely with local farming problems. The Station has, since its inception as an experimental centre, co-operated with other bodies such as the National Institute of Agricultural Botany and the variety trials work undertaken for this organisation on the more important farm crops has served as a major attraction to visiting farmers. In the same way, participation in national programmes of research has been a means of providing additional financial support and an increase in the numbers of trained staff leading to an extension of the trials programme as a whole. I propose to return to this point later in the paper.

Annual experiments, such as those already referred to, must be undertaken for three or four years in order to examine the effect of varying weather conditions on the treatments involved. At times, to the regular visitor to the Station, this may appear to be undue repetition. Never-the-less it forms an

integral part of any trials programme and is all the more important where the work is being undertaken at one centre only. It is these annual experiments, designed to elucidate a particular problem that normally receive greatest attention and stimulate most interest. They provide the basis for most farm visits and may perhaps have the greatest immediate impact on local farming. But side by side with these trials there must be work in progress of a more fundamental nature that may lead to future radical changes in farming practice for only by this means can continued progress be made. Since the early 1930's such trials have been a feature of the Station's work starting with the Sheeping Trials, through a series of Straw Disposal Trials at Sprowston, to the current long-term work now being undertaken at Morley on the maintenance and improvement of soil condition and more recently on an examination of the cumulative effects of various tillage systems on an unstable and difficult soil.

A detailed and complicated programme such as that just outlined would seem to be full justification for the continued existence of an experimental centre. It might be claimed that because its trials programme was broadly based and well conducted this would be sufficient to meet the needs for which it was designed. But more is required of a local centre than this — it should be able to integrate its experimental findings into its own commercial farming operations and, by this means put into practice the results of its research work. This has been demanded by generations of Station members and is probably the most important single factor that has guaranteed the Station's continued existence for more than 70 years.

The Station's farming policy has always remained relatively simple and this has often led to comment — and sometimes criticism. In the main, cropping has been restricted to the more widely grown farm crops and rarely have speculative projects remained part of the system for long. In the same way, the provision of specialist units such as dairying, pigs or poultry has been resisted even though their introduction might have resulted in increased income or profitability. In the same way, specialist aids such as irrigation have been rejected on the grounds that the farming should remain similar to that which can be followed by the majority of farmers in the area. More particularly, the farming system has remained relatively simple in order to provide optimum conditions for the conduct of the experimental work. The possibility of extending into more sophisticated systems has often been considered — and rejected to date — on the premise that the Station's main duty is — and should remain — the need to provide information that is of value to the farming community as a whole.

So far, comments have been restricted to the development of the Station's