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Specialist advice from the public services

Medium between science, industry and practice

Impartial advice in Germany has been, and still is, mainly available through Chambers of Agriculture and government agricultural offices. These organisations have adjusted to suit developments within both the public services and agriculture. The following article takes a retrospective look at the tasks and activities of a department manager for agricultural mechanisation (Dr. K. Köller from 1979 to 1991) over more than a decade in the Rhineland Chamber of Agriculture and also reflects the standard of mechanisation during this period.

Advisory work as the medium between science and industry on the one hand and practical farming on the other is certainly no one-way street. Information flows in both directions. The basis for these streams of information is not only good specialist knowledge but also sufficient personal practical experience in most advisory areas, experience that makes appropriate judgements and practical recommendations easier.

Impartial and independent

Agricultural mechanisation advice in public service should inform farmers on current mechanisation developments and the functional and economical application of machinery so that wrong investments can be avoided. Is such a service available in other parts of the economy? Yes and no. Many craftsman guilds supply advisers for their membership, and not only for tax and legal questions.

The Chamber of Agriculture advisory service is financed by the "chamber allocation" from farmers and through state subvention, above all for administration work. Additionally fees for certain services are paid by farmers and their proportion in the total finances will, according to an informed report from Dr. Ratschow [1], increase noticeably.

The concept of advisory services has been, and always will be, repeatedly discussed and questioned. Let's take a look in concrete terms at the subject „machinery in crop production“. Now, isn't it true that

there's already worthwhile decision aids for farmers from the farm machinery industry and processor organisations such as sugar factories? After all these organisations offer seminars, advisory literature and product information. And where are the real new developments nowadays anyway? Haven't the plough and power harrow solved the problems of cultivation, and combines those of the cereal harvest?

New technical developments can bring substantial changes in work procedures and/or important savings in labour. Look at the economies offered by non-plough cultivations and direct drilling. Their introduction, however, would hardly be recommended by a long-year specialist in production of ploughs and subsequent implements in the cultivation process. Now, of course it is not being claimed here that an adviser can know everything. Question: Which tyres fit a certain tractor type for defined work conditions? The answer could well involve different types for each axle! This information is found in the "tyre selection list" of the tractor manufacturers – in which the salesman is not too keen to look into.

Single job: multiple challenges

A new idea is rather like the dawn: it finds most people still sleeping": so formulated Dr. Hüffmeier former manager, Agricultural Machinery and Buildings Group, Westphalia-Lippe Chamber of Agriculture, the way

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Literature

Literature information available under LT 06SH08 via Internet at <http://www.landwirtschaftsverlag.com/landtech/local/fliteratur.htm>



Fig. 1: For direct seeding in no-till fields suitable implements were first imported from the USA



Fig. 2: Machine demonstrations allow for comparing assessment under practice conditions. An expert comment is important!

in which innovations can be missed. He added: "This oversleeping must not happen with machinery and building advisers: they are there to follow developments, to monitor and assess new information, experiences and scientific advances; to collect data, and from all that to produce recommendations" [2].

With the Rhineland Chamber of Agriculture, information talks and advisory work at district offices were handled along with technical instruction ensuring a close association with practical farming. The further education of these specialist instructors and advisors took place through the Machinery and Buildings Group in the head office with consultants for widely differing advisory areas. Correspondingly, these consultants were required to:

- Give further training for agricultural machinery specialist instructors and advisers
- Process advisory literature and produce adviser information
- Give talks and publish specialist reports
- Organise and prepare commentaries for machinery demonstrations
- Plan and evaluate farm-oriented tests with different machinery
- Conduct individual farm advisory work where special questions arise.

This wide task field emphasises that satisfactory performance cannot rely on thorough university or institute study alone. Practical experience before and during training is needed too, as well as good contact to research and industry, regular reading of the specialised press and attending specialist meetings, exhibitions and demonstrations.

Honorary work in agricultural organisations such as DLG, KTBL and VDI-MEG always pays. After all, this enables intensive exchange of knowledge and experience far over the state boundaries. In such roles

there's reciprocal taking and giving from which all participants can profit. This applies not only to meetings and seminars but also to trials and comparison tests together with specialists from other advisory facilities and organisations. Such comparisons could feature trials and evaluations between tractors and fertiliser broadcasters with colleagues from other chambers of agriculture, specialist journalists and test stations.

Such working together with colleagues from other advisory centres, but also the honorary work within societies and organisations, makes easier the processing of uniform, agreed-upon, advisory recommendations. This in no way means that the results harbour formulations of general self-satisfied monotony. There can certainly be differences between regions although these must be thoroughly specified and justified.

Advisory publications: mirrors of agritechnical development

If one looks back on over a decade of agritechnical advisory service between 1979 and 1991, then the list of over 600 publications gives a good overview of technical development some specialist areas.

One of the first publications was on "Justus", a universal soil cultivation implement according to its manufacturers after which quote the author at first put a question mark [3]. This was an especially stable implement combination for cultivation and drilling in a single pass. Two years later the first information on the "Paraplow" was to be read, a cultivation implement for loosening soil without inversion [4]. In 1982 came the first experiences with the stubble cultivation implement "Dyna-Drive" with the critique "Only for large farms?" [5]. In the same year

front-mounted ploughs arrived on the German market, particularly from France [6]. With three shares up-front and four behind, the possibility was there for better exploitation of larger horsepower tractors as an alternative to multi-furrow semi-mounted or mounted ploughs. Among further developments were swing ploughs from various manufacturers [7]. Here too, the opinions of the advisers were in demand regarding suitability for practical conditions.

From non-plough cultivations to direct drilling

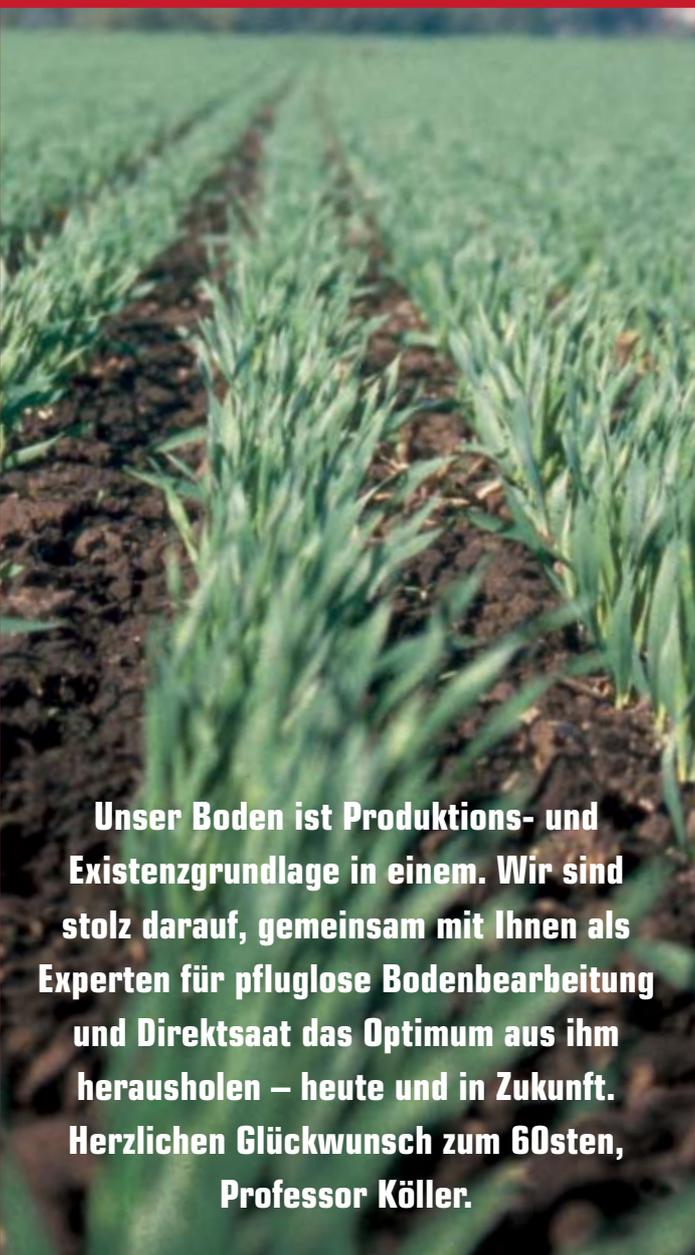
Since the beginning of the 1980s the questions regarding non-plough cultivations and direct drilling represented a continuing theme for questions to advisers. The extent of farmer interest was reflected in the large numbers of publications on the subjects whereby the technique itself wasn't the only subject matter. After all, implements for loosening and not inverting the soil were already known and proven. But the drilling technique required adaptation because of the increasing challenge caused by organic trash on field surfaces. Of critical importance was operational planning in the field and here a close cooperation with advisory colleagues from crop production was required. Practical experience had long lain abroad for this cultivation and drilling system, in North and South America for example. By 1979 there were reports that these systems were already used on over 500 000 ha [8].

But despite all this, it proved to take a great amount to shake the picture of a neat plough furrow providing a "clean table" for the next crop out of farmers' heads. Statistics from abroad could well come from regions with other soil and precipitation conditions, was one of the counter arguments. In short, it did not take a lot of courage to stand up against the new procedure.

This meant that an adviser had to make arguments all the more convincing to defend the recommendations. Advisers also had to come to grips with first unsuccessful attempts to apply the new systems, to gather



Fig. 3: Comparative assessment of cultivation methods, here assessment of field emergence



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the facts to determine reasons for failure. Among these could be included the not always sufficient thought going into work procedure, and multiple factors that often influenced each other, for instance the need to seek another strategy for weed control. A DLG technical bulletin and KTBL working paper helped by reiterating the basic requirements for field work without the plough while presenting the modern soil cultivation and drilling systems and so helping to avoid failures [9, 10].

Alongside the more fundamental papers on this subject there were also many individual tests on machines and implements conducted and their results publicised as basis for advisory service recommendations. Such machinery included the front grubber, types of furrow press with various accessories and, for instance, a comparison between rotary harrows and the tine rotovator as secondary cultivation implements [11].

Everyone knows the best tractor, don't they?

Buying a new tractor can represent 40% and more of a farm's annual machinery expenditure so this is an important area for advisory service isn't it? But everyone has tractors and everyone knows all about them and which type is best. Uncertainty is dealt with by telephone discussions with distant acquaintances or other farmers. To this sort of background the need for advisors in this subject area may seem ambiguous at least. In fact though, there's a demand for substantiated, practically-relevant evidence on draught and pto power, for information on diesel consumption and noise levels in the cab, where possible with comparisons of several models in a power class. The results are important management decision aids.

It's important that such results be associated with the practical work expected of the machinery and then presented in an understandable way. All this would be too much for a single advisor, especially where several tractors were being compared. But working together gives strength! Thus the Rhineland Chamber of Agriculture pioneered together with colleagues in the Münster, Hanover, Oldenburg and Kiel Chambers and specialists from an over-regional monthly magazine the joint conducting of a tractor comparison test the results of which commanded great attention. The comparison results were almost exclusively recorded with repetitious accuracy. Criteria were also developed so that the assessments of the cabs and their equipment, on operator-ease, comfort, space and visibility avoided subjective judgements as much as possible. The publication of the results in 1983 [12] found great admiration not only amongst farmers but also from the manufacturers. Of course not all of them were delighted. There wasn't much space towards the top of the winners' podium in this case. But subsequent technical alterations could be traced back to the comparative results.

It's no surprise, therefore, that this sort of comparison is repeated around every three years and still continued nowadays. But such comparisons should not, could not and indeed will not replace results from the official machinery test stations such as that of the DLG at Groß-Umstadt. For there we have not only state-of-the-art measurement equipment but also trained and experienced specialists. Depending on the localised farming conditions the crucial factors looked for in a test may differ. And didn't the first comparison contribute towards the DLG test station help in highlighting the most important developments and their reliability?

Something of the same applied for a comparison test of furrow press combinations [14], drills [15] and fertiliser broadcasters [16]. These sorts of comparisons substantially ease assessment of machinery on the market. The prerequisites here are impartial testers, solid knowledge, results that are mainly reproducible, criteria relevant to practical farming and, building on this, good contacts to industry.

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In the first instance the results are not aimed at publicising weaknesses but instead on identifying, among other things, qualities, functionality and efficiency.

Many-sided advisory service

The annually occurring, season-related advisory tasks with their associated talks and presentations have already been mentioned. In the aforesaid context the subjects include not only cultivation and drilling, fertilising and crop care. For instance maize drilling and harvesting information is in demand as well as information on the different techniques for combining, and naturally questions around tractor work. This includes information on road traffic laws, the effects of higher maximum speeds or the practicability of telescopic loaders in agriculture [17].

More interesting are examples of timely observation and assessment of new developments, when this is at all possible, so as not to “sleep” through these introductions. Even back in 1983, the possibilities for electronic components in grain drilling were already looked into and there are many other examples of this standard of awareness.

Nowadays, for instance, research and calculation is being aimed at the question whether cutting to leave a higher stubble can reduce combine diesel consumption and also lead to lower grain moisture during harvesting with attention also paid to the inputs needed for the subsequent stubble work. As early as 1987 tests were carried out on the high stubble solution with the combine header comprising two superimposed cutterbars with adjustable space between them [18] – an example that emphasises that the time for some developments may not yet be with us.

Impartial advisory work necessary, but still possible in the future?

The cash has run out for many public services. The legendary Julius tower of Finance Minister Schäffer in the Adenauer government has already been forgotten by many. Financial support for official advisory services will be further reduced, not least because of the continually shrinking number of farms. Farmers who up until now saw the work of the advisory services as paid for by their chamber allocation will have to face paying more, and more often, themselves.

Larger farms have for many years invested in joining “advisory rings” with their own ring adviser which they mainly finance themselves. But even those cannot cover every area. The many-faceted chromatics in machinery selection alone might have its justification in regional terms in the light of customer services and spare part supply becoming increasingly important in times of thinning dealership coverage. But who in future will process the advisory fundamentals and who will train the advisers?

Another problem is that the specialist chamber and public service advisers are now being applied much more in the control of farm support programmes. In the eyes of the farmer this means that their value is reduced not least because in the long run their individual competence must suffer when they are put to other tasks away from their speciality for many weeks at a time and don't even have the opportunity to follow-up their own studies in their special subjects.

Farmers would be well advised to keep a close eye on these developments and do what they can to steer against them. Otherwise we'll get a situation that was analogously referred to decades ago by the highly regarded economics journalist K.P.Krause in the Frankfurter Allgemeine Zeitung: That at first farmers will be happy over the discontinuation of the chamber allocations. Then, they will be surprised that no one is left to give them impartial advice.



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