

## Methods of Agricultural Extension

A four-weeks Training Centre on Methods of Agricultural Extension took place at Wageningen, Netherlands, July 13th — August 8th, 1953. The meeting was sponsored by the International Agricultural Study Centre at Wageningen in collaboration with F.A.O. and the Mutual Security Agency. The participation was very international: Austria, Argentine, Belgium, Burma, Denmark, Egypt, Finland, France, Germany, Gold Coast, Iran, Iraq, Italy, Lebanon, Libya, Luxembourg, Netherlands, Nigeria, Rhodesia, Sierra Leone, Suriname, Sweden, Switzerland, Syria, Turkey, Uganda, U.K., U.S.A., Yugoslavia. The language difficulties were reduced to a minimum thanks to a simultaneous translation equipment and the aid of six interpreters, who translated the English talks into German, French and Yugoslavian. Also the speakers came from various countries: including Canada, Finland, United Kingdom, Sweden, U.S.A., China and the Netherlands.

For most of the participants this course was the first contact with colleagues from other countries. They mutually benefitted from each other's experience. The representatives of so-called less developed countries enjoyed being together with fellow-workers from Europe and America and being able to see successful extension work in practice.

The organizers hope to repeat the course at Wageningen in 1954 with an improved program, making full use of the experiences obtained. Maybe this summer course will develop to a permanent institution.

**W**hy is it that the subject "Agricultural extension methods" attracts so much attention especially from the international organizations? The answer is not difficult.

It is generally known that a wide gap exists between what we know and what we do, between research and application. Several generations of scientists have pushed forward agricultural practices and techniques but little or even nothing of this wealth of knowledge is being applied in many parts of the world. This is not only true for the so-called less developed countries but even in large parts of the advanced countries. And research is going on, creating new possibilities every year. The gap becomes wider instead of narrower. It is often assumed that the world could be transformed into a paradise, if we only found ways to put into practice what we know.

If this prospect looks phantastic it is certain that there is no potential reason for a shortage of food and a miserable life of rural people in most parts of the world. Freedom from want, one of the objectives of the United Nations is no phantastic goal. But there is still a long way to go before the objective will be materialized.

The post war international organizations have done very much to spread this idea and their publicity has stirred up most governments. What we see is an increased understanding of agricultural needs all over the world. Many governments are building up agricultural services which have been shown to be vital for rural development and welfare. Such a large part of the world's population are farmers and peasants that there is no hope of raising the general level of living of mankind without far reaching changes in agriculture.

Farming has too long been considered as a poor man's job, inferior to other ways of existence. This is changing and many administrators realize that agriculture will play a very important part in the future development of the world.

### **The three pillars of modern agriculture are research, education and extension**

We stated already that research is far ahead, which does not mean that research should not develop further. Education and extension serve the same purpose: preparing and helping rural people to improve their methods and techniques.

### **Agricultural extension is one of the two methods to narrow the gap between what is known and what is done**

It is by no means new. Some countries have extension services with a successful experience of over seventy years. Countries which are now starting or accelerating extension programmes can benefit from these older examples. Several international conferences have formulated recommendations to governments about this subject and these recommendations have been carefully studied and already put into practice by various countries. During these conferences it became evident that very little literature exists on agricultural extension methods. The professional problems of the extension officer have attracted little attention in the past and contrary to the scientists who have their journals and congresses, the extension officers have worked in the dark, without any international contact.

**Much of the future development of agriculture depends on the ability of the extension officers to carry on their job,**

but the Agricultural Colleges have not trained their pupils in extension

methods and limited themselves to provide the background in natural sciences, agronomy and economics. Who ever learns in college now to make use of radio, film and other mass methods? Who ever has learned to give a public talk for laymen or to write for farmers? Who has ever heard in college of planning a publicity campaign or trying to find out what extension methods produce the best results?

This kind of problems have been discussed during the Training Course at Wageningen and the lectures in question were interesting to all participants. Moreover much of the extension system of the Netherlands have been explained and demonstrated. An extension service cannot function well unless provisions exist for certain facilities. A soil testing laboratory is necessary for advice on fertilizers. Soil maps can be applied in the form of very detailed surveys for fruit planting. The results of plant breeding can be applied with the aid of lists of recommended varieties, a seed testing station and a control system for seed production. The Dutch poultry industry is based on regulations on poultry breeding, efficient feeding and a good marketing system. In this case regulations, research, extension and organization are closely related. The improved grazing techniques influence the whole farm enterprise to such an extent that advisory work has to be based on accurate bookkeeping.

The Dutch advisory services show many similar examples of the close connections between research, education, regulations and organization, all of which have contributed to the recent improvements of Dutch agriculture and horticulture. Wageningen is a good place for extension officers to meet, because so many research and service institutions are concentrated there.

Several of these applied science and service institutions were visited by the participants of the Course and during two major excursions, covering most of the country, the group also had an opportunity to see the results of the advisory work in many places, including the districts flooded at the beginning of this year.

Serious misunderstandings exist in connection with experimental farms. In many countries such experimental farms work under conditions very different from ordinary farming. The Netherlands can show many pilot farms, ordinary farms, run by the cultivators at their own risk, without subsidies, but materializing the extension program or part of it. They are entirely different from test farms, also called empirical farms, where the Government tries out a new farming system at the cost of the Government. Experiment-farms are just government farms where a number of scientific experiments are being concentrated. These different types of farms have been demonstrated at various places.

Though the program did not take into account the specific problem of home economics advisory work, about fifteen home economists participated in the course. As far as advisory methods are concerned agricultural and home economics extension work do not differ and during the discussions it became evident how necessary it is that both groups work closely together.

### **Modern extension approaches the whole farm family: Men, women and children.**

Future extension training courses should include subjects of special interest for home economics workers.

The lectures held during the Wageningen Training Centre have been published in a substantial volume "Methods of Agricultural Extension" (Wageningen 1953), which is just from the press. It forms one of the few publications on the subject and many extension workers the whole world round should study this volume.

## Beachtliche deutsche Neuentwicklung auf dem Dünge- und Pflanzenschutzmittel-Sektor

Firmennachrichten außer Verantwortung der Redaktion.

Den Lesern der Fachliteratur auf dem Dünge- und Pflanzenschutzmittel-sektor werden zwei jüngere Entwicklungen der FARBERWERKE HOECHST A.G., einer der Nachfolgesellschaften der ehem. IG-Farbenindustrie, sicher nicht entgangen sein. Es handelt sich dabei um den Spezialvoll-dünger „HOECHST“ mit Hochleistungselementen 12/12/18 und eine Wirkstoffgruppe auf dem Pflanzenschutzsektor-Unkrautbekämpfung, die unter dem Namen „TCA“ in Europa noch wenig bekannt ist, sich aber im Ausland größter Beliebtheit erfreut. Es scheint angebracht, diesen Präparaten auch in dieser ersten Nummer der „CITA-Post“ einen größeren Raum zu ihrer Besprechung zur Verfügung zu stellen.

Der Spezialvolldünger „HOECHST“ 12/12/18 mit Hochleistungselementen ist dadurch gekennzeichnet, daß er die Mikroelemente Bor, Mangan, Kupfer, Zink und Kobalt direkt an die Hauptnährstoffe gebunden hat. Die Spurenelemente sind dabei in wasserunlöslicher Form und stehen der Pflanze als ständig fließende Quelle unmittelbar neben den Hauptnährstoffen zur Verfügung. Der Antrag der Farbwerke Hoechst zur amtlichen Prüfung und Anerkennung dieses neuartigen Düngers lautete für die Verwendung bei Sonderkulturen. Den dort geforderten Bedingungen entspricht der Dünger dadurch, daß er chloridfrei ist und daß er Kali in Form von schwefelsaurem Kali enthält. Außerdem enthält der Dünger noch ausreichende Mengen Magnesium. Im Düngjahr 1952/53 sind bereits beachtliche Mengen dieses Volldüngers in der deutschen und ausländischen Landwirtschaft bei Sonderkulturen zum Großeinsatz gekommen. Es wäre voreilig, besonders bei mehrjährigen Kulturen wie dem Wein- und Obstbau, nun schon endgültige Beurteilungen treffen zu wollen, aber wie eine Umfrage bei den Praktikern, die diesen Dünger eingesetzt haben, ergeben hat, halten ihn Wein- wie Obstbauern, Tabak- wie Hopfenpflanzer für einen beachtlichen Fortschritt und verweisen dabei auf ihre eigenen Erfahrungen. Von den Obstbau-gebieten des Auslandes haben vor allem diejenigen das größte Interesse an dem Hoechst Spezialvolldünger gezeigt, die die Düngung als Lanze-Düngung durchführen, da sich dieser Dünger für die Lanze-Düngung als voll geeignet erwiesen hat. Interessant war uns, von Weinbauern zu hören, daß es zum Beispiel im Jahre 1952 an der Mosel durch den Spezialvolldünger gelungen sein soll, Weinberge, die unter Spurenelementmangel litten und fast am Zusammenbrechen waren, innerhalb einer Vegetation wieder so aufzurichten, daß man an das Ausschlagen der Gärten nicht mehr dachte.

Jedermann weiß, daß die Frage der Spurenelementdüngung sicherlich

zu den schwersten Problemen der Pflanzenernährung gehört. Da die Forschung die Aufgabe hat, Schwierigkeiten zu überwinden, wird die Entwicklung des Hoechst Spezialvolldüngers von der Forschung wie auch der Praxis sehr begrüßt.

In diesem Jahr erschienen erstmalig in Deutschland auch größere fachwissenschaftliche Publikationen über das TCA-Präparat NATA. NATA wird hergestellt vom Werk Lechemie Gersthofen der Farbwerke Hoechst A.G. und ist die Abkürzung bzw. die Handelsbezeichnung für Natrium-Trichlor-Acetat. Wie bereits erwähnt, findet diese Substanz vor allem in Übersee starke Verwendung und wird dort gegen ein- und mehrjährige Grasarten eingesetzt. Typisch für NATA ist, daß es nicht streng selektiv wirkt, sondern auch Dikotyledonen schädigt, ohne sie zu vernichten. In Amerika erfolgt der Haupteinsatz von NATA gegen Bermuda-Gras, Quack grass, Crab grass, Foxtail, Johnson grass und sonstige Grasarten. Interessant ist, daß dieses Präparat bei vergrasteten Ackerflächen auch mit großem Erfolg bei Kulturpflanzen eingesetzt wird. Diese Versuche wurden z. T. in Deutschland bestätigt, und zwar bei Rüben. Es hat sich dabei gezeigt, daß es durchaus möglich ist, ohne größere Keimschäden NATA 14 Tage vor der Aussaat der Rüben in einer Dosis von 15—20 g/qm auszubringen und dabei eine gute Vernichtung von grasartigen Gewächsen — z. B. Quecke — zu erzielen. Nach amerikanischen Untersuchungen sollen sich folgende Gewächse z. B. als relativ unempfindlich gegen TCA gezeigt haben:

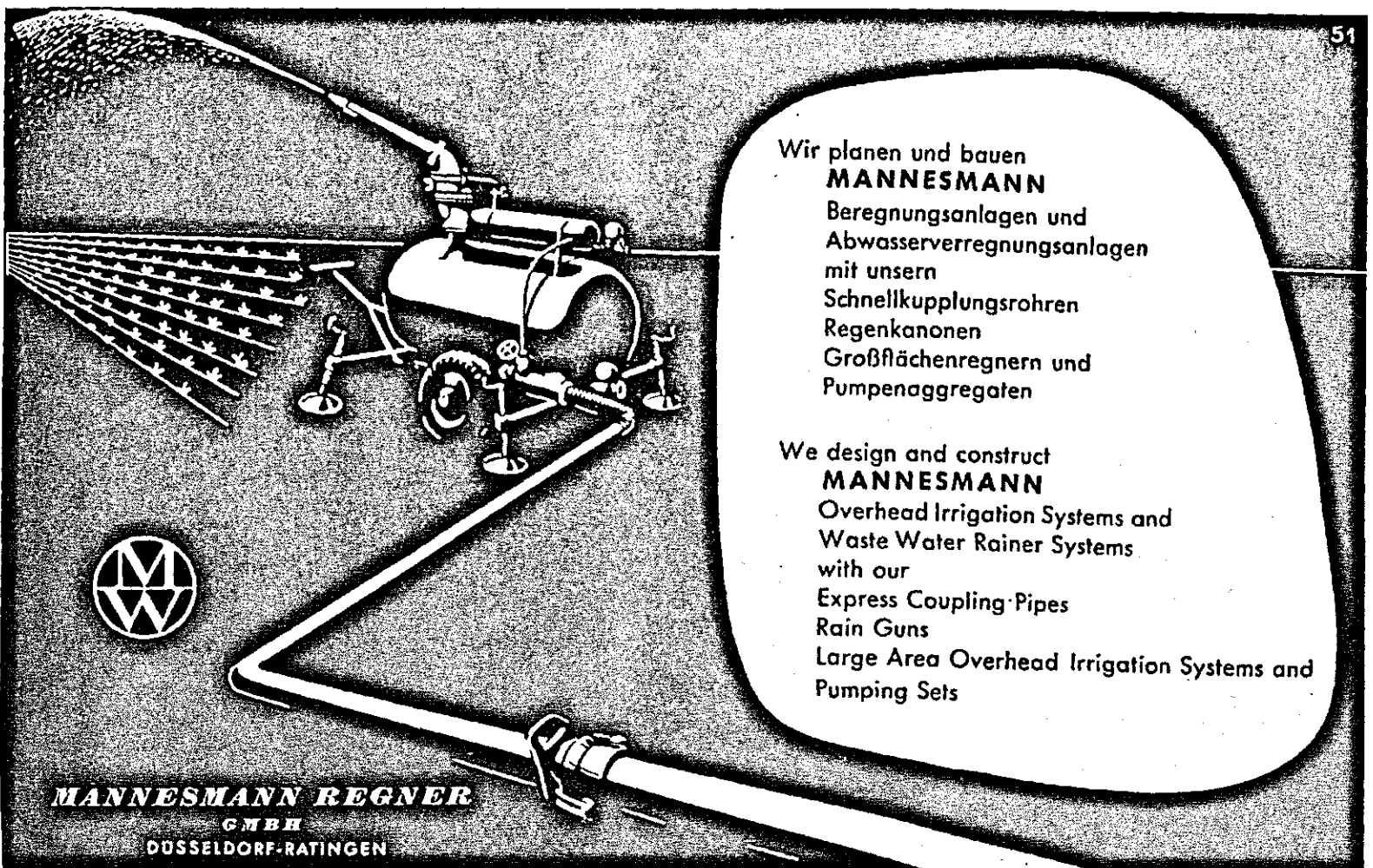
Rote Rüben, Kohl, Möhren, Sellerie, Kreuzblütler, Eierpflanzen, Flachs, Mangold, Erbsen, Pfeffer, Radies, Pfefferminze, Tabak, Tomaten usw. Als sehr empfindlich werden dagegen verzeichnet:

Gerste, Weizen, Bohnen, Blaue Lupine, Kirsche, Himbeere, Wein. Diese Untersuchungsarbeiten sind in Deutschland noch nicht soweit gediehen, daß man hier endgültige Ergebnisse publizieren könnte. Man kann aber annehmen, daß in den nächsten Jahren noch grundlegende wichtige Erkenntnisse erarbeitet werden. Für den europäischen Raum sind größte Anwendungsgebiete für NATA:

Kahlflächen im Forst (auch wirksam gegen Calamagrostis)  
Schilfbekämpfung in der Teichwirtschaft und bei Bewässerungssystemen  
Quecke-Bekämpfung auf dem Ackerland  
Reinigung von Grabenrändern, Umzäunungen, Flugplätzen und Eisenbahnkörpern.

NATA hat außerdem gegenüber Natriumchlorat den großen Vorzug seiner Unbrennbarkeit.

Dr. Cz.



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