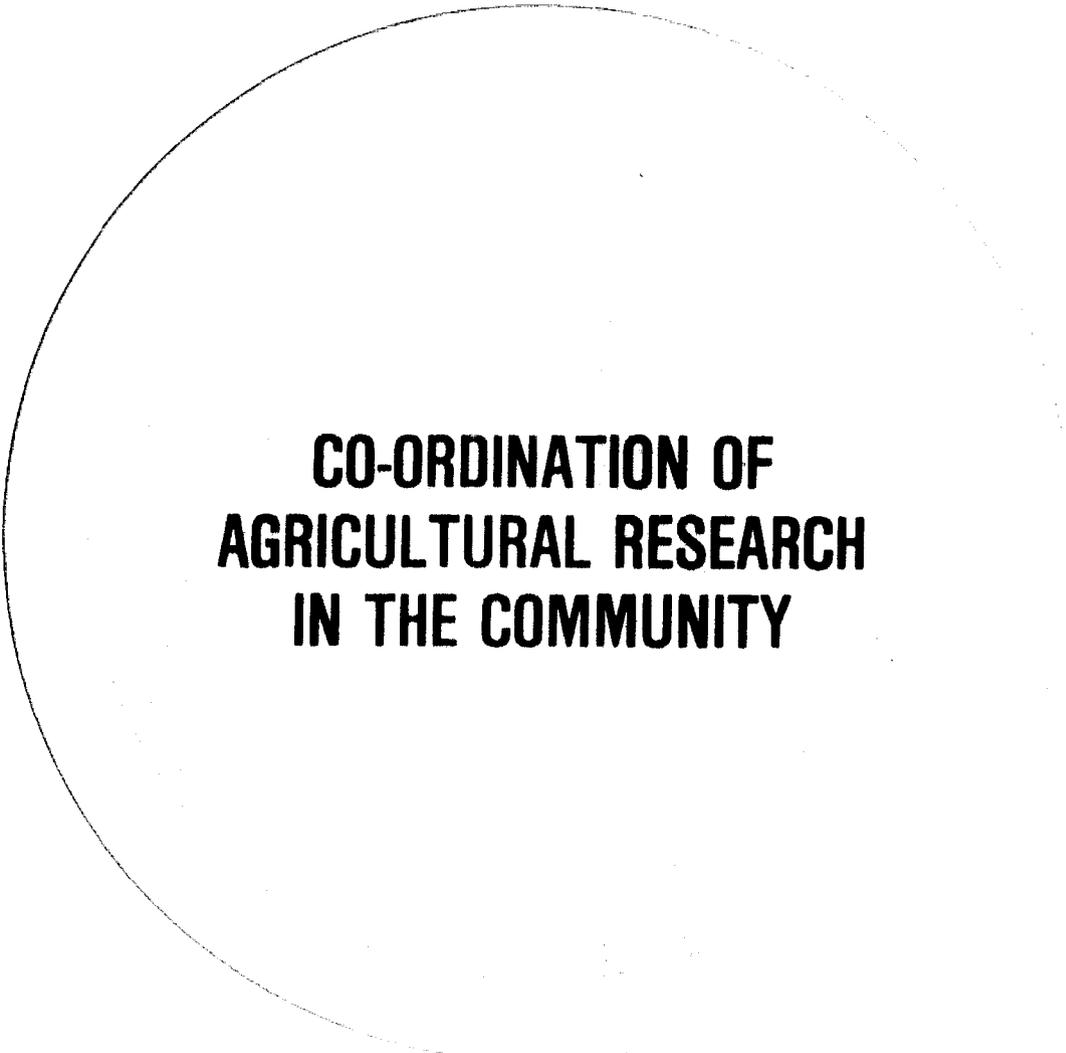


# GREEN EUROPE

NEWSLETTER ON THE COMMON AGRICULTURAL POLICY



## CO-ORDINATION OF AGRICULTURAL RESEARCH IN THE COMMUNITY

Original: EN



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- Le Service de documentation du Parlement Européen collabore à la sélection des articles de périodiques.
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Het documentatiebulletin bestaat uit vier uitgaven.

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**CO-ORDINATION OF  
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Luxembourg: Office for Official Publications  
of the European Communities, 1982

ISSN 0250-5886

Catalogue number: CB-AV-82-183-EN-C

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*Printed in Belgium*

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## INTRODUCTION

The fundamental purpose of co-ordinated agricultural research in the European Community is to contribute to the efficiency and effectiveness of the Common Agricultural Policy (CAP) and to do this with an eye not only to the present but also to the future. This can be achieved only, if the CAP is supported by an appropriate technology, itself a result of a well conceived research over a whole field of agriculture, food, fisheries and forestry.

But, agricultural research in the Member States of the European Community is already well organized and of a very high order of competence. It may therefore be asked why is there a need for a Community involvement in this field ?

The answer lies in the economies that can be realized through a combined application of brains, experience and research facilities of the Member States to problems of common interest, often transcending national frontiers. Solutions to such problems can be achieved more rapidly and more economically, in terms of use of resources, if there is a co-ordinated approach.

### I. THE ORIGIN

The relevance of this approach in the context of the common agricultural policy has been recognized long ago, and explicitly mentioned in Article 41 of the Treaty.

But, initial attempts to implement this provision of the Treaty were not fruitful, and it was only in 1964 that the first steps were taken.

The initial impulse came with the increasing threat from two big diseases - classical swine fever (hog cholera), and African swine fever which, though not yet diagnosed in the Community, had appeared in the Iberian peninsula. Thus, a cooperative research programme was launched, involving 17 laboratories (in Spain and Portugal as well as Member States) and including seminars, workshops and the exchange of scientists. Achievements were considerable, providing basic knowledge on the two swine fever viruses, and thus opening

the way to practical results in respect of diagnostic procedures and better field control measures.

The success of this first programme, which spread from 1964 to 1971, led to the adoption in 1974 by the Council of Ministers of the Regulation for implementation of co-ordination of agricultural research as an essential ingredient of the common agricultural policy. This Regulation also provided for the establishment of a statutory body with the name of the Standing Committee on Agricultural Research (SCAR), consisting of Directors of Research and senior research administrators in the Member States.

## II. THE FIRST PROGRAMME

A year later (in 1975), the Council approved a specific programme of co-ordinated agricultural research and a budget for its implementation. The programme, to run for three years (1976 to 1978 inclusive), embraced four subjects which had been chosen after much discussion.

Because of the then predicted universal shortage of beef and of the heavy reliance of the Community upon imports of plant proteins such as soya for animal feed, two of the four subjects chosen were beef production and vegetable (crop) protein production.

The third subject was livestock effluents, selected because of the value of effluents as fertilizers and of the recognized need both to improve their utilization and to develop common terminology and methodology concerning their safe disposal (because of the risks of pollution), so that any legislation on the subject introduced by Member States might be comparable.

The fourth subject, animal leukoses, was born of the recognition that there are a number of diseases which inhibit the working of the CAP by providing cause for the limitation of movement of livestock across national frontiers.

The first programme ended in December 1978, but by that time there had already been nearly two years of planning of a new five-year programme. This was approved by the Council on 31 October 1978, and came into effect on 1 January

1979. This new programme is being currently implemented, and it will go on until the end of 1983.

### III. METHODS OF OPERATION

The major policy objectives of co-ordination of agricultural research are formulated by the Commission on the recommendation of the Standing Committee on Agricultural Research, and they must be approved by the Council of Ministers and the European Parliament. Once the objectives have been approved, their implementation is entrusted to the Commission, assisted by the Standing Committee.

Within the Commission, the administration of the Community's co-ordinated agricultural research activities is undertaken by a small staff located in the Division of Co-ordination of Agricultural Research within the Directorate-General for Agriculture in Brussels. They are supported by a few, carefully selected advisers, and by a number of SCAR programme committees and expert groups. Some Member States have seconded senior scientists as experts to assist the Commission with the overall management of research activities.

There are two main methods of intervention open to the Commission :

- (i) "co-ordinated" activities which bring research people together; and
- (ii) "common" activities, consisting of research projects which qualify for EEC financial support in the form of contracts with selected laboratories or institutes.

In the case of the co-ordinated activities, each country pursues its own research, but does so with an improved knowledge of what others are doing in the same or similar fields, thanks to the Community support (100 %) for the organization of seminars, workshops, exchanges of scientists, publications, etc. But with common activities, research projects recommended by the relevant programme committees of experts, are given financial support up to a maximum of 50 % of their cost. 134 contracts with different institutes in the Member States were thus financed under the first Programme. So far, the Commission does not engage directly in research projects, nor has it been able to finance fully (up to 100 %) projects undertaken in Member States.

#### IV. EARLY ACHIEVEMENTS

Among the most important achievements of the first Programme, it is probably true to say that in general terms it was "co-ordinated" activities (meetings and exchanges) that were the most successful, leading to better collaboration, communication, and understanding among the scientists in the different Member States, of a kind which becomes self-generating.

But there have also been notable achievements in research arising from the placing of contracts under the Programme, in spite of the fact that the period of the first Programme was only three years, and that many agricultural research projects cannot produce worthwhile results in such a short period, being governed by the biological realities of plants and livestock.

There is little doubt that as a result of the first Programme, scientists in Europe have been inspired, encouraged, or constrained to conduct their research work in a cooperative manner so that what might have been limited-value amplification of effort has, instead, become complementary work in a co-ordinated effort to achieve a common objective.

In addition, there have been concrete achievements in diagnostic techniques, and standardized tests for early diagnosis of animal diseases, in the effectiveness of vaccination and the development of disease control measures, in meat quality, in animal nutrition and management, genetics, selection, and physiology of reproduction, as well as in the means of handling and disposing of animal waste materials, and in improvements in the protein yields and quality of selected cereals and other plants.

#### V. HIGHLIGHTS OF THE CURRENT PROGRAMME

The current Programme (1979-1983), which is now half way through its life, has been developed with respect of four specific policy objectives, namely :

A. Socio-structural objectives

1. Programme for the appropriate use of land and rural development
2. Programme on Mediterranean agriculture
3. Programme on agricultural waste and the effluent of intensive stock rearing

B. Elimination of barriers on the intra-community agricultural markets

4. Programme on animal pathology

C. Production efficiency

5. Programme to improve the productivity of Community beef herds
6. Programme on integrated and biological pest control
7. Programme on ways of improving plant resistance to disease
8. Programme on primary processing of agricultural products
9. Programme on elm disease

D. Alternative products (increase of market value of fodder production)

10. Programme for improved production of vegetable proteins

Of these 10 programmes, four are continuations - with some modifications - from the earlier phase. These concern farm effluent, animal disease, beef productivity, and protein production from crops.

For these it has been a period of completion of projects or of preparation for transfer to national funding in line with the Co-ordinated Programmes function as a catalyst and not a continuing provider. The Effluent (now Farm Waste) Programme is unusual in that it is, in part, being transferred to another administrative unit of the Commission (DG XII) where it becomes part of a wider programme concerned with waste disposal and utilization in general, including also industrial and urban aspects.

Aspects of the animal pathology, beef and plant protein programmes may be carried forward into a future phase. A critical evaluation of these has been started - looking at problems that have emerged in the processes of formulating, implementing and terminating programmes - to prepare for the initial

planning of programmes for the third period of co-ordinated research due to start in 1984.

The following have been the main highlights of individual programmes :

#### 1. Land use and rural development

This programme differs from most of the others in that it has a strong socio-economic component. It is therefore necessarily a complex programme that has required a lot of discussion and planning but has now been rationalised withing three main themes :

- Land resource evaluation
- Land resource development and conservation
- Integrated rural development

A seminar held at Wexford in the Republic of Ireland at the end of 1978 highlighted the need for a soil map as a basic requirement leading to a meaningful agro-ecological map of Europe. Such a map covering all Member States plus Greece, Portugal and Spain is now in an advanced stage. The preparation of a forage map is now under discussion and other subjects for mapping which may follow are forestry and major agricultural crops such as cereals.

Land Resource Evaluation within the Community is hampered by the varying methods of land assessment currently employed in different Member States. Therefore, five methodology projects are in progress, and workshops have been arranged for the purpose of making recommendations on a uniform land evaluation methodology and the need for computerised land use data.

The Land Resource Development and Conservation part of the programme has eight research projects covering multiple land use, drainage and reclamations, and soil degradation. A major seminar on soil degradation at Wageningen, Netherlands, in October 1980 established priority aspects for research at Community level.

The 1979/80 period has been a preparatory one with regard to Integrated Rural Development, but major emphasis on this part of the programme will be given in 1981/83. Case studies are to be made by multi-disciplinary teams of

experts in projects which give a representative geographical spread of the more disadvantaged areas of the Community. These studies will give considerable weight to human aspects.

## 2. Mediterranean agriculture

The AGRIMED programme is looking not only to the agricultural research needs of the existing Mediterranean members of the Community, but also to those which will be joining in the near future. Because this programme concerns a specific area rather than trans-Community subject and because - like the Land Use programme - it is concerned with socio-economic difficulties in a disadvantaged region as well as scientific research, it has had its own peculiar problems of planning and organization. However, although still somewhat diverse in subject matter, it has now emerged with clear cut objectives and this in itself is a significant achievement in the time taken.

Two major parts of the programme concern the integration of sheep (mainly for milk production) with forestry and the improvement of field crops (cereals, forages and oil/protein crops) in the region. There are particular problems related to the effective use of nitrogenous fertiliser in the context of the sequence of crops commonly used in the Mediterranean area, so this has been selected as a project subject. Forage seed production is also being given attention.

Good collaboration among different laboratories in the Member States has been developed as regards problems posed by the new regulation on the utilization of concentrated residues from wine grapes.

Fruitful collaboration is being established among 26 Institutes in the Community to standardize the drop irrigation of fruit trees with a view to saving water and energy.

Other subjects being covered by the AGRIMED programmes relate to oriental tobacco cultivated in Southern Italy (an important meeting held at Scafati and Lecce had permitted to scientists and growers to discuss the main problems in productivity improvement) and to Cyprus disease and pear fire blight.

### 3. Agricultural waste and the effluent from intensive livestock systems

What had been a programme on effluent from livestock - concerned with the efficient use of nutrients for crop production as well as environmental aspects - broadened in 1979/80 to include some other farm waste materials (such as straw) and food industry wastes (such as residues from factory processing of olives and potatoes).

At this stage, some over-lapping began to occur between the work of this programme and that carried out by the scientific and technical research team within the Directorate-General for Science, Technology and Education. It was then agreed that as from January 1981, the livestock effluent work would terminate with the exception of research on anaerobic digestion and that the latter together with the crop residue waste work would transfer to DG XII.

The remaining portion of the budget is being made available for a new programme on animal welfare (see below).

The achievements of the programme in respect of animal wastes were discussed at a seminar in Germany in October 1979 and the proceedings have been published under the title "Effluents from livestock" (EUR 6633) (1).

The results of a study done under the programme in the Netherlands have been published by the Commission under the title "The spreading of animal excrement on utilized agricultural areas of the Community"(2). A workshop is planned for Spring 1981 to discuss a practical guide for farmers which is being produced for the Community by researchers in the Netherlands, drawing upon the published findings of the effluents programme.

In addition to work on the techniques of spreading effluents and the value of nutrients in them, the programme has contributed scientific findings to the

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(1) Proceedings of a Seminar in the EEC Research Programme on Effluents from Livestock held in Bad-Zwischenahn, 2 - 5 October 1979, edited by Dr J.K.R. Gasser, published in Serie n° 6633.

(2) The spreading of animal excrement on utilized agricultural area of the Community. Information of Agriculture Serie N° 51 of September 1978.

debate on the build up of copper in soils. This relates mainly to excreta from pigs fed copper additives and to the intensive use of copper fungicides on crops, notably Bordeaux Mixture on vines. As the result of evidence discussed at a meeting arranged by the Programme at Bordeaux in October 1980 the implementation of a Commission Directive reducing the permissible level of copper in pig feeds has been postponed until November 1981.

#### 4. Animal pathology

The Animal Pathology Programme continues to be a very important section of the overall Programme of Co-ordinated Agricultural Research. Of the four topics now included, bovine leukosis and African swine fever continued from the earlier period and two others are new. These latter are concerned with the protection of young animals from perinatal diseases and with communicable diseases (from animal to animal and from animals to man through the storage, handling, transport and land-spreading of manure).

The common (research) programme on bovine leukosis was brought to an end in 1979 having achieved the objective of a simple standardised test for early diagnosis. In March 1980 a training course was held in Copenhagen on diagnosis using the ELISA Test. The bovine leukosis programme has achieved excellent results and much knowledge has been acquired, but eradication remains a problem. In order to evaluate the different proposals for eradication, better diagnostic methods are still needed, and it is important that scientists working in this area should consider to meet at seminars and workshops to discuss their results.

Eradication is also the aim of the African swine fever work which is largely concentrated in Spain at the Commission's reference centre in Madrid and in Portugal at a laboratory in Lisbon. During 1980 three experts visited the infected area of Sardinia; a training course on diagnostic techniques was held in Madrid; and there was a workshop to discuss the methodology of diagnosis and the spread of the disease by carriers.

Research projects into perinatal diseases of young animals started in late 1980. A seminar on communicable diseases of animals was held in Hanover in

November. It is planned that the common programme should run during 1982 and 1983 and should concentrate on Campylobacter and Listeriosis, with special attention to a modelling approach.

#### 5. Improving the productivity on beef herds

In this second phase of the Beef Programme, the scale of contracts has been cut down and emphasis has been on giving funding to help finish promising work. All contracts ended in 1980. There have been four working groups concerned with genetics, nutrition and management, meat and carcass quality, and physiology of reproduction.

Subjects of seminars have included the standardisation of research methods of feeding stuffs analyses, and beef from cull cows. Results of research into the early calving of heifers and the use of these once-bred animals for beef have shown that there need be no technical difficulties but, owing to prejudice, the trade continues to pay less for a bred heifer and some Member States have legislation which effectively prevents the use of the technique.

One of the more interesting meat research projects demonstrates well the advantage of a Community-based programme. Eight Member States cooperated in an eating quality test which was co-ordinated by the Meat Research Institute in the U.K.

An important objective of this work is to achieve a standard method of testing and substantial progress has been made in this direction. The programme is also working towards a standard methodology for evaluating bacteriological quality of meat.

#### 6. Integrated and biological pest control

The overall aim is to develop methods of effective crop pest control which minimise the use of chemicals, thus avoiding risks to human health and the environment and reducing grower's costs. The programme is concentrating on fruit, vegetables and cereals.

With fruit, work on integrated control is already well advanced in Member States so the emphasis is on co-ordination and on solution of specific

problems such as the production of virus-based pesticides and a reduction in the use of chemicals in olive and citrus orchards.

With vegetables, less information is available on integrated systems. Cabbage and carrots have been selected for particular studies on the use of viruses as pesticides and on the predictability of pests' innovations.

With cereals, the concept of integrated control is at an early stage. The programme is concentrating on research which should lead to a reduction in the use of fungicides and also add to present knowledge of cereal aphids so that population dynamics can be better understood and invasions predicted.

The practical use of biological and integrated pest control is dependent upon the availability of biopesticides. Two workshops organised by the programme in 1979 dealt with testing and registration of biopesticides and resulted in a document which currently serves as the basis for Community legislation in this field.

#### 7. Improving plant resistance (and gene banks)

This programme has two distinct objectives :

- the achievement of long-lasting resistance to disease through plant breeding;
- more effective use of gene banks through improved co-ordination and standardisation of procedures and descriptions.

To date a main emphasis has been placed on drawing up descriptor lists for a number of selected crops. The working committee, with representatives from Member States, has agreed on a system for descriptors. The work on lists for cereals, grasses, legumes and strawberries is now in an advanced stage; a small amount of work has been done with potatoes.

A common activity involving the collection of plant material of brassicae, winter barley and grasses (within the Community only) is about to start.

As the result of a seminar on documentation and information for gene banks held at Braunschweig, Germany, and a subsequent meeting at the Germplasm

Institute in Bari, Italy, the Commission was asked to assist in resolving problems of communication of data between existing gene banks which use different data processing systems. It was also resolved to try to avoid such problems in the future by advising during the planning stage of new gene bank projects in the Community.

In 1979, it was decided to select winter barley to be evaluated for disease resistance. Nine institutes are participating. The first year's trial (1979/80) has been completed and experts met in December to discuss results. Seeds have now been sown for a second year's trial.

With this programme the Commission take part in the FAO/UNDP European Co-operative Programme for the Conservation and Exchange of Crop Genetic Resources, in which actually 20 European States are involved, and has a close co-ordination with other international organisations including the Northern Genes Bank.

#### 8. Agro-food (production techniques and food quality)

This has been a difficult programme in respect of defining objectives, bearing in mind the need to have a consumer orientation while retaining an agricultural focus. Therefore, 1979/80 has been taken up largely by meetings for discussion and planning.

It has been decided to concentrate initially on tomatoes, apples and chicken (for meat), looking at the production factors which may affect quality as understood by the consumer. In the case of crops these would be such factors as fertilisers, pesticides and bred varieties. In the case of chicken, intensive (cage) and semi-intensive (on-floor) systems will be compared and also the nutrition of the birds.

A basic difficulty will be to define quality. To this end, chemical criteria will be used for objective evaluation and tasting panels will be brought in for subjective evaluation. 13 research contracts have been signed to develop this programme.

## 9. Dutch elm disease

Co-ordinated and research activities into elm disease are concerned with the three aspects :

- the beetle which transmits the disease,
- the fungus disease itself, and
- selection of resistant trees.

Research based on the use of pheromones is underway in several Member States. Another project is investigating the volatile gases in living wood to see if there is a relationship between these and the resistance of certain trees to beetle attack or to development of the fungus following beetle entry.

A study of origins of the disease. This is involving liaison not only between experts within the Community but also forestry people in America, eastern Europe and parts of Asia.

The Dutch Elm Disease has some connections with the Oak Wilt disease. This, too, is a fungal disease but in the USA it is spread mainly at root level with very little part being played by a beetle vector. It is feared that this might not be the case should it be introduced to Europe, in which case it could be much more serious on this side of the Atlantic. New common research (also involving American workers) will aim to give a scientific base for possible modifications of the phytopathological Community Directive.

## 10. Improving the production of plant proteins

It is considered important that the Community itself should produce a higher proportion of its requirement of vegetable proteins (mainly for animal feed). Therefore, the plant protein production programme was continued from the second period, but with some changes in emphasis. Higher priority is being given to work on grain legumes while support for oil seed rape is taking the form of co-ordination activities (meetings) only. Common research on grasses and forage legumes is continuing.

Among the particularly useful workshops that have been organised was one in Norwich, England, on Rhizobium; this brought together specialists

in the different aspects of the subject. Another was on field beans (Vicia faba) in Wageningen, Netherlands. A meeting on cereal proteins planned for 1980 was postponed until 1981.

### New Directions

Recognizing that Animal Welfare is a matter for Community concern and one on which several Member States now place great importance, the Commission has already taken steps to provide evidence (based on scientific research) as support material for the drafting of Community legislation on the subject. The work has evolved out of existing programmes and is being made possible by re-orientation and adjustment of priorities.

A small expert group of scientists representing Member States met in Brussels in September and again in December, 1979, to decide priorities. It was agreed that poultry welfare, especially that of laying hens in cages, was of immediate importance. Other major areas of relevance to the Community were identified as : pigs in cages; veal calves (use of anabolic agents); transportation of farm animals, slaughter procedures; and welfare of other animals (e.g. cattle).

The CEC invited a multi-disciplinary group of scientists, veterinarians, welfareists; consumers, legislators, industrialists, producers and other representatives of Member States to a forum on poultry welfare in February 1980 for a frank and realistic exchange of views. This meeting demonstrated the Commission's concern to base any legislation on substantial factual evidence and all-round advice.

Scientists were invited to a seminar on "The Interaction of the laying hen and its environment at which technical issues were reviewed and areas for further research identified. Since then a poultry expert sub-group has worked out detailed proposals for seminars and research activities for 1981/83. The group is assisting the CEC with the technical section of a report to the Council on laying hens in cages.

Other seminars in 1980 covered "Dark cutting in Beef" (relevant to the welfare group because it is caused when the animal is under stress before slaughter)

and "Pig Welfare" (pigs in cages, meat quality). There has already been some research into "dark cutting" under the beef programme and meetings on veal calf welfare, transportation and slaughter, and disturbed behaviour are planned for 1981.

## VI. BUDGETARY ASPECTS

The total budget for co-ordinated agricultural research within the Community for the five year period of the current Programme (1979-1983) amounts to EUA of 18,602,000. Its breakdown by the main policy objectives is shown in Table below.

Breakdown of appropriations (1979-1983)  
(in European units of account)

Programme	Total (five yaers)
Socio-structural objectives :	8,844,000
- Appropriate use of land (agriculture, forestry, pasture)	
- Mediterranean agriculture	
- Agriculture waste and the effluent of intensive stock rearing	
Removal of barriers on intra-Community agricultural markets :	1,902,000
- Animal pathology	
Production efficiency :	5,314,000
- To improve the productivity of Community beef herds	
- Integrated and biological pest control	
- Ways of improving plant resistance to disease and environmental pressures	
- Agro-food programme	
- Elm disease (pilot programme)	
Alternative products :	2,542,000
- Improved production of vegetable proteins	
<b>Total</b>	<b>18,602,000</b>

The overall budgetary figure is extremely small (approximately 1 % of the Commission's expenditure on research and development) in spite of the fact that agricultural research has been selected by the Council of Ministers as one of the five priority sectors within the research and development programme of the Community.

"Co-ordinated" activities account for roughly of the total budget. "Common" activities (contracts) take up about 2/3 of the budget.

#### VII. FUTURE PERSPECTIVES

The present five-year programme expires in December of 1983. The orientation of the next five-year programme, hopefully to be initiated in 1984, begins to be discussed in the SCAR.

It is clear that one of the most pressing research requirements of the common agricultural policy in the years to come will be for technical means of containing rapidly rising costs of agricultural production by developing techniques which make the most effective use of limited natural resources, increasingly scarce energy, and other expensive industrial inputs.

The next pluri-annual Programme for Co-ordination of Agricultural Research will have to be built around this central objective, with increasing attention being given to problems of : intensifying the agricultural potential for energy saving and production by means which do not endanger agricultural productivity and profitability; to improving the situation of disadvantaged rural areas and disadvantaged farm families in the Communities; and to problems linked to the enlargement of the Community.

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ISSN 0250-5886