

COMMISSION OF THE EUROPEAN COMMUNITIES

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REPORT TO THE COUNCIL AND THE PARLIAMENT
under article 4 of Council decision No. 75/ 460/EEC of
22 July 1975

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COUNCIL DECISION N° (75/460/EEC) OF 22ND JULY 1975.

BACKGROUND

In 1975 the Council approved a proposal from the Commission for a Decision adopting common research programmes and programmes for the coordination of research in the field of animal leucoses, livestock effluents, beef production and plant protein production (1). The programmes were the result of two years preparation and discussion within the Standing Committee on Agricultural Research (CPRA) (2) and ad-hoc working groups of scientific experts.

The content of the programmes was selected to meet specific objectives of the common agricultural policy and in particular to eliminate obstacles to Community trade through the harmonization of legislation and to improve farm productivity and thereby improve farm incomes.

The programmes were divided into common programmes and coordinated programmes (3). The common programmes are characterised by contracts for specific research projects which, by means of coordinated activities, form part of a coherent programme with an overall objective. Coordinated programmes are characterised by having clearly defined objectives but wherein work is carried out through coordinated activities without recourse to individual contracts.

I. COORDINATED ACTIVITIES

Coordinated activities take a variety of forms following the requirements of the programme and the scientists taking part. These activities have included 18 seminars, 3 workshops and 104 research exchanges as well as 19 meetings of the programme working groups. They have resulted in publications (see annexes).

To enable the Commission to carry out these tasks it has been necessary to rely a great deal on the good will of the scientists and the administrative authorities of the laboratories where they work. This is particularly the case for the organisation of seminars and workshops and editing of proceedings prior to publication.

(1) Decision (75/460/EEC) of 22 July 1975, O.J. n° L 199/37.

(2) Council Regulation N° (EEC) 1728/74 of 27 June 1974, O.J. n° 182/1.

(3) In the language since adopted for the common policy on science and technology a "common" programme is equivalent to an "indirect" action and a coordinated programme is the equivalent of a "concerted action".

Where necessary the Commission has invited scientists of international reputation to assist it in carrying out its task by giving advice on the scientific content and progress of the programmes.

Seminars and Workshops are organised by laboratories in the Member states at the invitation of the Commission and after discussion within programme working groups. The host laboratory makes the local arrangements, circulates papers and assists the Commission in the choice of speakers.

Exchange of scientists between laboratories, visits of scientists for training or information, or delegation of scientists to attend other international conferences and report to the Commission are arranged on an ad-hoc basis. Such exchanges and visits are essential to ensure full cooperation between laboratories and adequate access to information. They have been used for example to overcome difficulties caused by differences of approach between laboratories and, to permit younger scientists to benefit from the experience of centres of excellence or to permit non-contractants to participate in exchanges of views or other coordination activities. A report is required from each scientist benefitting from these grants.

The proceedings of seminars and workshops have been published mainly in the Commission's Coordination of Agricultural Research series. In conformity with the Commission's publication policy and after consultation with the Standing Committee two seminars have been the subject of special issues of scientific reviews "Animal Science and Technology" and "Veterinary Microbiology" and negotiations are continuing with other interested journals. Publishing via know specialist journals helps to achieve wider circulation among the scientific community.

At present all publications in the series Coordination of Agricultural Research are in English. In the future abstracts will be provided in other Community languages.

II. PROGRAMMES

Article 5 of the Decision provided finance for four common programmes and two coordinated programmes. There is a total of 134 contracts with scientific organisations in all member-states except Luxembourg (4). The participating laboratories were selected by the Commission after discussions in the Standing Committee on Agricultural Research.

The Commission's original proposal was for a programme extending over five years, but this was cut to 3 1/4 years to meet budgetary constraints imposed by the Council. Several parts of the programmes, particularly those dealing with genetics will necessarily provide only interim or preliminary results. In addition the unusual drought of 1976 seriously affected some programmes.

(4) Luxembourg does not have a national agricultural research service. It works directly in cooperation with other member states.

Finance

In 1975 after all claims were paid there was a balance remaining of 24,304 u.a. This could be explained by the slow beginning of work in certain countries where contracts were signed late or after some difficulty.

In 1976 the balance remaining was even larger at 603,058 u.a. This first year brought to light particularly the following aspects :

- a) the long time between the initial proposal, the signature of contracts and the beginning of work made it necessary for some laboratories to modify their activities ;
- b) unusual climatic conditions, particularly the long drought, disturbed many experiments, notably in the plant protein programm ;
- c) through a lack of information, or of means, a number of contractants delayed committing funds in the year fearing that the reimbursement would be delayed.

Since all the common programmes are indirect actions, and therefore are only partly funded by the Community, it is essential that the complementary contribution from the national budget is made available either before or simultaneously with the Community contribution.

Now that, in 1977, the programmes are both active and productive it seems likely that the committed funds will be used in full.

1. ANIMAL LEUCOSES

a. Avian Leucosis

Common programme on the mechanism of resistance to Marek's disease

At the time of the Commission's proposal there was clear evidence of sporadic breaks in the immunity to Marek's Disease provided by vaccination. The objective of the programme was to increase the effectiveness of vaccination and to develop new methods to control the disease.

At this interim stage the results point to encouragement of genetic resistance as a more profitable path to follow rather than improving vaccine strain. Since chickens affected by Marek's Disease are still saleable after gutting, the economic effect may not be in direct relation to the disease incidence.

On the other hand birds affected by Avian Leucosis are not saleable and rapid differential diagnosis between Marek's Disease and Avian Leucosis is essential. This is the subject of a coordinated programme.

Coordinated programme on differential diagnosis between avian Lymphoid Leucosis and Marek's disease

At the beginning of the programme a seminar was organized in Copenhagen on 12th October 1975. The objective of the seminar was to recommend and agree to criteria for the differential diagnosis and to produce a handbook for use by EEC and other countries.

As a result of this seminar and after a further meeting of the scientific Working group on 4 - 5 March 1976 it was agreed to circulate the proceedings (5) of the seminar which might serve as a guide to the criteria for differential diagnosis.

A collection of colour slides made by Dr. PAYNE, Houghton Poultry Research Station, Huntingdon, U.K. and Dr. CAUCHY, Station de Pathologie Aviaire, C.R. de Tours-Nouzilly, France, were prepared. The slides were chosen to illustrate the typical lesions of Lymphoid Leucosis and Marek's Disease. Fifty boxes of 20 slides each have been made available to participating scientists and the Commission's veterinary services.

b. - Bovine Leucosis

The objectives of the programmes on bovine leucosis were set in conjunction with the veterinary services of the Commission to facilitate the harmonization of legislation and to refine existing diagnostic techniques.

As with the programme on Avian Leucosis this programme was preceded by a seminar which took place October 17-18 1975 in Copenhagen. The proceedings were published in a special issue of Veterinary Microbiology in October 1976.

Common Programme on virological and aetiological aspects of bovine Leucosis

This programme seeks to identify and study the infectious agent of bovine leucosis. There are marked differences in the results of groups working on the structure and composition of bovine leucosis virus (BLV) and there is little information on the mechanism whereby BLV causes leukemia.

As in the case of the Avian Leucosis the common programme was linked very closely with a coordinated programme on diagnosis.

(5) "Coordination of Agricultural Research" - Differential Diagnosis of Avian Lymphoid Leukosis and Marek's Disease - 1976 EUR 5494e. ed. L.N. PAYNE.

Coordinated Programme on improvement of the diagnosis of bovine leucosis

As a result of work carried out within the programme two tests have been compared - an immunodiffusion test and radioimmuno-assays. After a workshop in Rotterdam on the serological diagnosis of enzootic bovine leucosis the scientists recommended that the immunodiffusion test should be adopted by the Community.

Annex I sets out the members of the working group, the names of participating institutes, the project team leaders, a more detailed description of coordinated activities and publications.

Annex V gives the expenditure figures for these programmes.

2. LIVESTOCK EFFLUENTS

The programme on livestock effluents was proposed to help resolve several urgent problems. The intensification of livestock production which gives rise to problems of the economic disposal of animal slurry for the farmer also gives rise to environmental problems. The programmes initiated by the Commission tried to take account of these various interests as well as the specific Community interest of ensuring that national or Community legislation in this field would be based on objective and accepted reference standards.

Like the animal leucoses programme the livestock effluents programme is divided into a common programme and a coordinated programme with close collaboration between the two parts.

Common programme on utilization of manure by land spreading

A first condition of this programme was to establish comparable methods of sampling and analysis. This was achieved from the start and comparable methods for analysis in relation to water, manure and soils using standard measures by weight are agreed. The research teams are now working on more exhaustive methods.

The work in progress has been regularly reviewed and the seminar at Modena in September 1976 (6) helped to reorient the work for the duration of the

(6) Proceedings published in Coordination of Agricultural Research series "Utilisation of Manure by Land Spreading" 1977 EUR 5672e.

programme putting emphasis on the more positive aspects of landspreading and creation of specialist sub-groups to coordinate work on reference methods and technology of sampling; long term effects of land spreading; and effects of landspreading of human and animal health.

Data for legislative use is considered to be not yet sufficiently accurate. Close collaboration is being maintained between this programme and the programme on landspreading of sewage sludge being undertaken as part of the Commission's Environment Research Programme. In particular comparability of analytic and sampling methods is essential.

Coordinated programme on odour elimination

This part of the programme is closely linked with work on chemical characteristics of odours in the common programme. Considerable attention was paid to devising an "alarm test" but at a working group meeting in Wageningen in December 1976 it was clear that the simplest method currently available is still too complicated for practical use. Emphasis will be given to trying to establish an "odour emission meter" and to define an "odour nuisance level" by studying the composition and relationships between components of malodours. This follows a recommendation made at the seminar of GENT, 9-13 May 1976 (7). Annex II sets out the members of the working group; the names of participating institutes, the project team leaders, a more detailed description of the coordinated activities and publications.

Annex V gives the expenditure figures for these programmes.

3. BEEF PRODUCTION

The beef production programme was first considered when there was a shortage of beef in the Community. Subsequently some of the assumptions on which it was based have been borne out by the **volatility** of the beef market of recent years. In particular the programme was based on the premise that the price policy was an insufficient mechanism to improve the productivity or performance of the industry. A look at the entire process of beef production was necessary, bearing in mind that the improvement in productivity of beef enterprises must be achieved with a minimal increase in milk production.

(7) Proceedings in course of publication in Coordination of Agricultural Research Series "Odour Characterisation and Odour Control" EUR 5786E

The beef programme was from the outset divided into five sub-programmes.

These were genetics and selection; physiology of the production, nutrition and management; pathology; and carcass and meat quality.

a. - Genetics

It is clear that a programme of only 3 1/4 years is inadequate to obtain any results from a cattle genetics programme. Even a 5 year programme would have yielded only interim results. However in order to provide a firm base for future coordination between Community scientists in this field the programme laid the foundation for developments in comparative genetics based on the Friesian breed. The potential impact of the North American Holstein in a dual-purpose population has also become of some importance and increasing interest is being shown in localised breeds of hardy beef sires.

b. - Physiology of Reproduction

The programme on the physiology of reproduction has already shown good results, in particular in workshops in which scientists from different laboratories have been able to demonstrate and compare techniques. Non-surgical embryo transplant techniques are well advanced and results on oestrus synchronisation and superovulation are approaching the application stage. This work aims at improving the reproductive performance of cattle by increased percentage of successful inseminations, twinnings and reduction of intervals between calvings.

Close collaboration with scientists outside the Community, notably in Canada and Australia has kept the Community in the forefront of this research on a world scale.

Work on early calving of heifers, like the genetics programme is of longer term significance.

c. - Nutrition Management

A major factor contributing to the uncertainty for the cattle producer is the dependence of the Community on imported protein concentrates. Grass, maize, silage, legumes and root crops are all important sources of feed for beef production and their potential for replacing expensive cereals and protein concentrates must be explored.

The work in this part of the programme is closely linked with the work on genetics. It is also clearly linked with work being carried on outside the Community - particularly by the European Association for Animal Production. Because of the strong international interest a seminar on "Maize as a basic feed for beef production" was held in Novi Sad, Yugoslavia on 22-25 June 1976 and used as a starting point for a programme on maize nutrition of ruminants in the framework of the Committee of Senior Officials in Science and Technology (COST).

d.- Pathology

The biggest single loss factor for cattle producers is calf mortality. There is insufficient knowledge of even the more common calf diseases and increasingly research is pointing to the need to look at the problem of disease in young animals as a special problem. The mechanisms of transmission of disease from dam to young, the immune mechanisms of the young animal and the epidemiology of calf diseases with particular reference to the impact of stress and intensive management systems on disease incidence have been included as important subjects for study in the current programme.

e.- Carcass and Meat Quality

This part of the programme is already showing positive results. The first steps have been taken for standardising the criteria for assessing carcass and meat quality on the basis of the European Association of Animal Production standards. These will provide a basis for the Commission to establish reference criteria for the assessment of meat and carcass quality on the beef market.

A feature of the coordination in this field was a training course held at the Meat Research Institute at Bristol from 17-21 January 1977 to introduce specialists from each member state to the results of the programme. The Commission has also arranged for the production and distribution of a series of colour slides for a standard method of carcass dissection.

With such a wide ranging programme internal coordination has been recognised to be most important.

The sections on genetics, nutrition and management, and carcass quality are already closely linked and this should be strengthened with a seminar, to be held in Italy late in 1978, which will aim to relate the individual parts of the programme to practical systems of beef production.

There have been seminars covering all aspects of the programme. A detailed description of these and other coordinated activities, together with names of members of the working group, the names of participating institutes, the projects team leaders and publications will be found in Annex III.

Annex V gives the expenditure figures for the beef programme.

4. PLANT PROTEIN PRODUCTION

The Community deficit in high protein crops had been recognised as a potential weakness in Community agriculture before the rapid change in protein supplies from outside the Community made the problem urgent in 1974. Research on protein from indigenous European plants was already in preparation. A concentration on indigenous crops meant that considerable effort was devoted to genetic improvement of cereals. Although there have been some encouraging results in this field the more promising future appears to be in the field of legumes and grass.

Like the beef programme, with which it is associated, the wide range of this programme has necessitated a division of the work into sections. These are: methods of analysis; genetics and radiogenetics of the higher plants; physiology and phytotechnology of the higher plants; genetics of legumes and symbiotic fixation; rational exploitation of fodder grasses and herbage.

a. - Methods of analysis

The basic work is concerned with the identification of phenols in vegetable matter. The study of the biochemistry of phenols shows the levels at which the tannins can act, namely, on the proteins themselves, the digestive flora and the permeability of the tissues of the digestive system. The lowering of apparent digestibility of energy and nitrogen in the presence of tannins suggests that it will be interesting to select tannin-free clones.

b. - Genetics and Radiogenetics in the higher plants excluding the protein-rich plants

Most of the work deals with barley, wheat and maize. Selection of barley of high-lysine content involves a reduction in yields of 10-25%. A similar negative correlation between yield and high protein-content is demonstrated with wheat. However certain varieties of Durum wheat with 14,5% protein and a yield of 6 tonnes/ha have been obtained, as well as some varieties of 19% protein and high digestibility for non-ruminants.

Maize research is concerned with the introduction of the gene fl.2 to obtain high protein yields with resistance to lodging, and with strong heterosis for seed yield and protein content.

There is only one project on oats concerned with screening varieties for genetic variability but since oats are plants which require low fertilizer input and have a naturally high protein-content more attention could be given to them.

c. - Physiology and phytotechnology of the higher plants (excluding the protein-rich plants) including animal nutrition

Research on the qualitative value of herbage in terms of balance of fertilizers has been undertaken with several species. An important conclusion from the work on amino acid analyses is that most of the amino acids evolve in the same way as the yield of dry matter, increasing in concentration with a moderate nitrogen fertilizer but diminishing under the toxic effect of high concentrations. Methionine remains constant.

Maize hybrids rich in protein both in seeds and the plant as a whole, and therefore more suitable for silage, have been selected. They have been introduced into several European regions and feeding trials carried out. So far results are encouraging.

Basic research on biochemistry is also carried out in this section. This work involves close collaboration with animal nutrition experts and close links with scientists in the beef programme is assured.

d. - Genetics of legumes and symiotic fixation

Legumes possess the facility of fixing nitrogen from the atmosphere by means of nitrogen-fixing bacteria (rhizobium) in the soil. The programme deals with the selection of bacteria and the study of the mechanism. It has been

established that a variety of factors effect the nitrogen-fixation capacity and the study of the mechanism of nitrogen-fixation will try to determine the importance of these factors.

Parallel to this work research is being done on genetic improvement of several species. It has been shown that with some of these (e.g. field beans, peas)

a linear relationship exists between the content of each of the 20 proteinic amino acids in the seed and the nitrogen content.

c. - Rational exploitation of fodder grasses and herbage. Technology of harvesting and storage

This section deals with extraction of juice from grass and green matter of plants and feeding to non-ruminants. This involves research on the ideal type of legume-grass combination, relations between stage of growth, fertilization level and ease of extraction of proteins; chemical composition and quality of juice and the pressed residue including effects of processing and storage; tests on nutritive value of pressed residue for dairy cattle and juice extracts for pigs.

The practical application of results will depend not only on technical progress but on the economic environment, in particular the price of pigmeat.

Annex IV sets out the members of the working group, the names of participating institutes, the project team leaders and a more detailed description of coordinated activities and publications.

Annex V gives the expenditure figures for these programmes.

III. INTERNATIONAL COOPERATION

In addition to coordination between the four programmes and close links with the activities in other research areas undertaken by the Community these programmes cannot be isolated from activities being undertaken by

third countries or by international organizations. To ensure that the Community has access to the best available information invitations have been extended to non-Community scientists to present papers at seminars organised by the Community. Occasionally the Community has taken the opportunity of a more broadly based international conference to make known its own work and to invite Community scientists to participate so that a direct benefit may be gained.

The Commission is open to cooperation with non-Community scientists where there is a direct benefit for the Community or mutual benefit for the scientists. It also recognises the need to avoid duplication of effort at an international level as well as within the Community.

Whereas in some of the current programmes the Community work is well advanced on a world-scale, there are other areas where it can directly benefit from the contributions and criticism of third-country scientists. Against this background the Commission has produced a seminar in cooperation with COST, conferences in cooperation with FAO and E.A.A.P. and has sent scientists to participate in the International Symposium on N₂ Fixation at Salamanca (13-17 September 1976).

Scientists from 18 third countries have participated in Community coordinated activities in the present programmes.

A N N E X I

Members of the Working Group on Avian Leucoses and Marek's Disease

Coordinator : T.L.V. ULBRICHT (U.K.)

Reporter : A. SCHIAVO (Italy) ; Since 1976 : D. RUTILI (Italy) .

H. HALEN : Belgium
M.E. MARTHEDAL : Denmark
L. CAUCHY : France
V. von BÜLOW : Fed. Republic of Germany
G. CAMPBELL : Ireland
M. PETEK : Italy
G.F. DE BOER : The Netherlands
P.M. BIGGS : United Kingdom

Members of Specialist Working Group :

L. CAUCHY : France
V. von BÜLOW : Fed. Republic of Germany
G.F. DE BOER : The Netherlands
P.M. BIGGS : United Kingdom

Members of Working Group on Bovine Leucosis :

Coordinator : O. STRAUB (Federal Republic of Germany)

Reporter : T.L.V. ULBRICHT (U.K.)

M. MAMMERICKS : Belgium
E. LUND : Denmark
R. CHEVRIER :
A.L. PARODI : France
L. DONNELLY : Ireland
G. GENTILE : Italy
A.A. RESSANG :
M. HORZINEK : The Netherlands
L.M. MARKSON †
P.M. BIGGS : United Kingdom

ANNEX I

List of participating Institutes in the Common (joint) Programme on Avian Leucosis

SUBJECT	CONTACT NO.	INSTITUTE	RESPONSIBLE RESEARCHER	PROJECT
1. Type of Resistance	121	Institut für Geflügel-krankheiten D-3000 Hannover, Buntweg 17	O.SIEGMANN	Investigation on the reasons for vaccine breaks in Marck's disease.
	190	Centraal Diergeneeskundig Instituut Postbus 65, LELYSTAD.	P.H.BOOL DR. DE BOER	Selection of a line of chickens resistant to Marck's disease Study of early histological changes produced in chickens by strains of Marck's disease
2. Stimulus for resistance	123	Bundesforschungsanstalt für Viruskrankheiten der Tiere (BFA) D-74 - Tübingen, POSTFACH 1149.	VON BÜLOW	Immunological characterisation of strains of Marck's disease virus Properties and functions of antigenic sub-units
	124	Institut für Geflügelkrankheiten der Freien Universität Berlin D-1 Berlin 33, Koserstrasse 21	G. MONREAL	Investigations on antigenic components
	170	Poultry Research Station Houghton, Cambridgeshire, PE 172 DA	Ph. BIGGS	Studies on purified antigens
	121	Institut für Geflügel-krankheiten, Hannover, Buntweg 17	O. SIEGMANN	Inter Feron

SUBJECT	CONTACT NO.	INSTITUTE	RESPONSIBLE RESEARCHER	PROJECT
	101	Station de Pathologie Aviaire - Tours-Nouzilly F - 37380 MONNAIE	M.L. CAUCHY	Investigation of the origin of tumorcells neoplastic or immunotype of vaccinal and genetic resistance
	136	Istituto Zooprofilattico Sperimentale delle Venezie Vie G. Orus 2 35100 PADOVA	M. PETEX	Study of anti-nerve auto-immunity
		Istituto Zooprofilattico Sperimentale dell'Abruzzo TERAMO	Prof. CAPORALE	Study of the rôle of lymphocytes in the pathogenesis
	170	Poultry Research Station Houghton; Cambridgeshire PE17 2DA	Prof. BIGGS	The rôle of antibodies in genetic resistance Projects relating both to cell mediated immunity and to macrophages.
	129	Gesellschaft für Strahlen Und Umweltforschung OBH (GSF) D-8042 Neuherberg, Post Oberschleissheim; Ingolstadtler Landstrasse 1	S.THERFELDER G. HOFFMAN, Fefer R. HOFFMAN	Resistance to Marck's disease
		<u>Associated Laboratories (without financial support from the Community)</u>		
		Institut For Fjerkreesygdonne Bulowej 13 1870 Kobenhavn - Denmark.	H.G. MARTHEDAL	Test of breeding stocks concerning genetic resistance
		Bundes Forschungsanstalt für Kleintierzucht Dörnberstrasse, 25/27 D - 3100 CELLE	H;Ch. LOLIGER	Investigation of the heredity of genetic resistance in Marck's disease - Dependence of the development of immunity on genetic resistance. - Investigation on birds vaccinated with different doses of herpesvirus - Maternal antibodies on the pathogenesis - Investigation on the genetics of the delayed hyper sensitivity reaction to suvelim.

ANNEX I

Institutes participating in the Common (joint) Programme on Bovine Leucosis

SUBJECT	CONTACT NO.	INSTITUTE	RESPONSIBLE RESEARCHER	PROJECT
1. Laboratory Methods	150	Institut National Recherche Vétérinaire Groeselenberg 99 1180 Bruxelles (Uccle)	M.J. LEUNEN M.M. MAMMERICKX	Development of methods for a large State production and quantification of C-virus partiele
	16 1	Statens Veterinære Serumlaboratorium, Bülowsvej 27, 1870 København, D.K.	H.E. OTTOSEN	Studies on the properties of the C-type virus particle and its sale in actiology of leucosis
	125	Bundesforschungsanstalt für Viruskrankeheiten der Tiere (BFA) D-74 TUBINGEN, POSTFACH 1149.	M. MUSSGAY DR. STRAVB	Development of methods for a large State production and quantification of C-virus particle Studies on the properties of the C-type virus particle and its sale in actiology of leucosis.
	100	Laboratoire d'Anatomie, Pathologique, 7 Av. Ch. de Gaulle, F 94701 Maisons- Alfort.	M. PARODI M. GUILLEMAIN M. LEVY	Development of methods for a large State production and quantification of C-virus particle. Studies on the properties of the C-type virus particle and its sale in actiology of leucosis.
	137	Istituto Zooprofilatico Sperimentale dell'Umbria e delle Marche Vio G. Salvemini 8 I - PERUGIA	A. MOROZZI	Development of methods for a large State production and quantification of C-virus particle. Studies on the properties of the C-type virus particle and its sale in actiology of leucosis.

SUBJECT	CONTACT NO.	INSTITUTE	RESPONSIBLE RESEARCHER	PROJECT
2. The Genetics and Pathogenesis of Barne Leucosis and its transmission	191	Central Veterinary Institute Prof. Poelslaan, 5 ROTTERDAM.	P.H. BOA Prof. RESSANG	
	171	Central Veterinary Laboratory NEW HAW -WEYBRIDGE, CURREY, G.B.	L.M. MARKSON	Studies on the properties of the C-type virus particle and its role in aetiology of leucosis
	150	INRV Groeselenberg 99 1180 BRUXELLES (Uccle)	S. MAMMERICKY J. LEUNEN	Transmission of bovine leucosis to the species and comparative studies
	125	Bundesforschungsanstalt für Viruskrankheiten der Tiere D-74 Tübingen -POSTFACH 1149	S. MUSSGAY DR. STRAUB	Studies of "Masked" transmission
	128	Tierärztliches Institut der Universität Göttingen Greaner Duckstrasse, D-34 GÖTTINGEN.	E. MITSCHERLICH W. SCHMIDT	Experiments to increase the virulence of the aetiological agent
	127	Institute for Virology Veterinary College D-300 HANNOVER-Kirchrede - Bunteweg 17.	DR. MOENNIG	Transmission of bovine leucosis to other species and comparative studies.
	126	Institut für Veterinär- medizin des Bundesgesund- heitsamtes D-1 BERLIN 33	E. WEINHOLD	Experiments to increase the virulence of the aetiological agent.
	100	Laboratoire d'Anatomie Pathologique, 7, Av. Ch de Gaulle F-94701 MAISONS-ALFORT.	M. GVIUEMAIN M. LEVY	Transmission of bovine leucosis to other species and comparative studies.

SUBJECT	CONTACT NUMBER	INSTITUTE	RESPONSIBLE RESEARCHER	PROJECT
	139	Clinica Medica Veterinaria Viole Filepanti 15 I - 40126 BOLOGNA	G. GENTILE	Experiments to increase the virulence of the aetiological agent
	191	Central Veterinary Institute Prof. Poelstaan, 5 ROTTERDAM	DR. RESSANG P.H. BOOL DR. ELLENY	

ANNEX I

Coordinated Activities within the framework of the common and coordinated programmes on Animal Leucoses.

Seminars : - "Differential Diagnosis of Avian Lymphoid leucosis and Marek's Disease"

- Copenhagen - October 12th, 1975

- Working Conference on "Resistance Mechanisms to Marek's Disease"

- Vlissingen - August 20th, 1977

- Virology, Diagnostic procedures, Epizootiology and transmission of Bovine Leucosis

- Copenhagen - October 17-18th, 1975

- Bovine leucosis, Various methods of molecular Virology

- Rhode-St-Genève - October 22nd-23rd, 1976

Workshop : - Biochemistry of RNA oncogenic Viruses

- Rhode-St-Genève - October 18th-21st, 1976

Publications :

- Proceedings of the Seminar on "Differential Diagnosis of Avian Lymphoid leukosis and Marek's Disease" - EUR 5494 e

- Proceedings of the Seminar "Virology, Diagnostic procedures, Epizootiology and transmission of Bovine Leucoses" - EUR 5493 e

- Proceedings of the Seminar on "Various methods of molecular Virology" - EUR 5685 e

A collection of coloured slides to illustrate typical lesions of lymphoid leucosis and Marek's disease for practical use in the diagnostic laboratories was made by Br. L. CAUCHY (INRA Centre - TOURS-NOUZILLY) in co-operation with Dr. P.M. BIGGS from Houghton Poultry Research Station.

Exchange of Scientists

<u>Name</u>	<u>Country</u>	<u>Subject</u>	<u>Place visited</u>	<u>Nr days</u>	<u>Year</u>
L. CAUCHY	France	Diagnosis	Houghton (U.K.)	4	1976
F. CAUDERT	France	Diagnosis	Houghton(U.K.)	4	1976
R.J. LORENS	F.R.Germany	Epidemiology	Reading (U.K.)	5	1976
V. von BÜLOW	F.R.Germany	Diagnosis	Rotterdam (NL)	5	1976
E.D. MONKS	Ireland	Diagnosis	Rotterdam (NL)	5	1976
G.F. DE BOER	Netherlands	Epidemiology	Reading (U.K.)	4	1976

ANNEX II

Members of the Working Group on Livestock Effluents

Coordinator : R.G. BRUGGEMANS (Belgium)

Reporter : G. WANSINK (The Netherlands)

Dr. P. HERMAN : Belgium
Mr. A. MATON :
Dr. T. HULD : Denmark
Dr. KLASINK : F.R. of Germany
Dr. H. VETTER :
Dr. CATROUX : France
Mr. A.V. DODD : Ireland
Dr. E. ZAVATTIERO : Italy
Prof. F. LANZA !
Dr. VOORBURG : The Netherlands
Dr. K.L. ROBINSON : United Kingdom
Prof. J. HAWKINS :
P. L'HERMITE : Commission
J. DEHANDTSCHUTTER
(expert) :

ANNEX II

Members of Specialist Working Group on Odour Control from Effluents from
Livestock

Chairman : A. AUMAITRE (France)

J.L. ROUSTAN : France

P. SCHREIEP : Fed. Rep. of Germany

H.G. HILLIGER : Fed. Rep. of Germany

J.H. VOORBURG : The Netherlands

A.A. JONGEBRUEER : The Netherlands

T.A. DORLING : United Kingdom

Members of Specialist Working Group on Standardisation of reference methods
and technology of Sampling

Chairman : Prof. Dr. A. COTTENIE (Belgium)

J.C. BROGAN : Ireland

MALHÖP : Fed. Rep. of Germany

J.H. VOORBURG : The Netherlands

H. VAN DIJK : The Netherlands

ROUSTAN : France

P. SEQUI : Italy

N. VERTREGT : The Netherlands

P. HERMAN : Belgium

SOIGNET : France

REMY : France

ANNEX II

List of participating Institutes in the Common (Joint) Programme on Livestock Effluents

Subject	Contract Number	Institute	Responsible Researcher	Project
1. ODOUR CHARACTERIZATION	220	Institut für Tierhygiene der Tierärztl. Hochschule Hannover D - 3 HANNOVER Bünteweg, 17	H.G. Hilliger	Analysis and characterization of odour in animal houses by means of deep-temperature-sorption-method
	200	I.N.R.A. Station de Recherches sur l'Elevage des porcs CNRZ, JOUY-EN-JOSAS, 18350 - F	M. Roustan M. Gousse M. Perez M. Weil	Characterization of swine slurry odours
	292	Centraal Instituut voor Voedingsonderzoek T.N.O. Utrechtseweg, 48 ZEIST - NL	H. Maarse	Development of objective instrumental methods for measurements of the intensity of malodours air in agriculture.
2. AERATION IN STORAGE FACILITIES	221	Universität Hohenheim Institut für Agrartechnik D - 7000 STUTTGART 70 Postfach 106	W. Ruprich	Treatment of effluents through aeration.
	201	Centre Technique du Genie Rural des Eaux et Forêts (CTGREF) Division Qualité des Eaux 10, av. de Saint Maudé F - PARIS XII	D. Ballay	- Nitrogen balance, nitrification and denitrification in aerobic treatment of piggery wastes - Study of oxygen transfer in pig effluents
	202	C.N.E.E.M.A. Paso de Tauvoie F - 92160 ANTONY	J. Vasseur M. Coillard	Equipment for periodic shaking in aeration storage of effluents
3. UTILIZATION OF MANURES BY LAND-SPREADING	251	Centre de Recherches Agronomiques (C.R.A.G.) 22, av. de la Faculté Agronomique 5800 GEMBLoux - B	R. Lecante	Agricultural use of animal slurries : crop yield and quality, modification of soil properties
	252	Institut de Recherches Chimiques (I.R.C.) 5, Molenstraat 1980 TERVUREN - B	M.P.Herman N. Nereinckx	Utilization of manures by land-spreading (coordinated national project with integration of L. RIXHON, V. DUFÉY and G. DROEVEN projects).

Subject	Contract Number	Institute	Responsible Researcher	Project
4. APPLICATION CONTENT OF POPULATIONS	260	Statens Forsøgsvirksomhed i plantekultur Kongevejen, 79 DK - 2800 LYNGBY	A. Kofoed	The strain of the soil with increasing quantities of manure
	223	Landwirtschaftliche Untersuchungs- und Forschungsanstalt der Landwirtschaftskammer Weser-Ems D-29 OLDENBURG, Postfach 669	H. Vetter	The influence of high amounts of manure on the quality of ground water, surface and drainage water and on the yield and the quality of yield products <u>(co-ordinated national project with integration of the projects U. SCHWERTMANN and KICK)</u>
	203	Laboratoire de Microbiologie des sols - INRA 7, rue Sully - F - 21 DIJON	J. Concaret M. Catroux	Studies on the land spreading of pig manure. Consequences for soils, plants and waters.
	253	Institut de Recherches Chimiques (I.R.C.) 5, Molenstraat 1980 TERVUREN - B	M.P. Herman M. Maton	Influence of components of wasted food and treatment of animal manure
	280	An Foras Taluntais Johnstown Castle Co. WEXFORD - IRL	V.A. Dodd D.F. Lyons	Utilization of animal manures by land-spreading
	290	Institute for Soil Fertility 92, Oosterweg HAREN (GR) - NL	K.W. Smilde	Effects of land-spreading of large amounts of livestock excreta and effulents on yield of different crops, soil fertility and environment
	270	National Institute for Research in Dairying+ SHINFIELD, READING RG2 9AT - GB	F. Doods	The disposal of heavy application of cow slurry on land
	284	An Foras Taluntais Dunsinea - Castleknock Co. DUBLIN	N.E. Downey J. Bradley	Role of animal manures in the dissemination of livestock
	235	Istituto Sperimentale Agronomico Via Celso Ulpiani, 5 I - BARI	V. Basci	Spreading of manures of intensive cattle and pig breeding farms
	253	Institut de Recherches Chimiques (I.R.C.) 5, Molenstraat 1980 TERVUREN - B	M.P. Herman G.Waegemans	The influence of feed composition of wasted feed of feed of treatment of animals on manure characterization.

Subject	Contract Number	Institute	Responsible Researcher	Project
5. ESTABLISHMENT OF A MATHEMATICAL MODEL	222	Fachrichtung Tierhygiene im Institut für Tiermedizin D - 7000 STUTTGART 70 Postfach 106/06200	D. Strauch	Tenacity of pathogenic micro-organisms in liquid manures from animal confinement units treated with aerobic aeration methods (<u>aeration part only</u>)
	283	An Foras Taluntais Johnstown Castle Co. WEXFORD - IRL	G.A. Fleming D.B.R. Poole	A study of the hazards to pasture and animal health arising from the use of copper-containing pig manure
	285	Faculty of Veterinary Medicine University College Belfield DUBLIN 4 - IRL	W.R. Kelly	Effects of animal effluent utilization for grass-land production on the levels of certain pathogenic bacteria in food animals and their carcasses.
	250	Faculté des Sciences Agronomiques Université Catholique de Louvain Place Croix du Sud, 2 1348 LOUVAIN-LA-NEUVE	E. Laudeloh	Systems analysis of manure spreading
	280	An Foras Taluntais - Dublin Johnstown Castle Co. WEXFORD - IRL	V.A. Dodd	Mathematical model of land-spreading of animal manures (co-ordinated national project grouping the projects from H.TUNNEY, C.MASTERSON, L.GALVIN, J.CURRY, L.K. DUNICAN and D.F. LYONS)
	291	Institute for Soil Fertility ... - WAGENINGEN	F.A.M. De Haan	Development of a model on the fate of minerals, especially phosphates and copper, in soils at high manure application rates
	271	Department of Agricultural engineering University of Newcastle upon Tyne NE1 7RU - GB	J.R. O'Callaghan	Systems analysis of the utilization of animal manures for crop production.

ANNEX II

Coordinated Activities within the framework of the common and coordinated programmes on Livestock Effluents

Seminars : - Odour Characterisation and Odour Control - GHEENT 9-13th May 1976
 - Utilization of Mamure by Land Spreading - MODENA 20-24th September 1976

Workshops : - Working Group on Odour Control from Effluents from Livestock WAGENINGEN - 29-30th November - 1 December 1976.

Publications : - Odour Characterisation and Odour Control -
 Ghent 9-13 May 1976 : EUR 5746 e
 - Utilisation of Mamure by Land Spreading
 Modena 20-24th September 1976 : EUR 5672 e
 - Calculation of Grass Land Acreage for
 best use of Animal slurries
 Prof. J.R. O'CALLAGHAN - Newcastle Upon Tyne University

Exchange of Scientists, etc.

<u>Name</u>	<u>Country</u>	<u>Subject</u>	<u>Place visited</u>	<u>Nr days</u>	<u>Year</u>
R. PRIEM	Belgium	Engineering	Paris (F)	3	1977
G. CATROUX	France	Land Spreading	Braunschweig (FRG)	5	1976
J.F. MOORE	Ireland	Parasitology	Copenhagen (Dk)) Wageningen (NL)) Amsterdam (NL)) London (UK)) Weybridge (UK))	7	1977
H. TUNNEY	Ireland	Parasitology	Orritslev gard (DK)) Askov (DK)) Arhus (Dk)) Uppsala (Sw)) Stockholm (Sw))	13	1977

ANNEX III

Members of the Working Group on Beef Production

Coordinator : W.F. RAYMOND United Kingdom

Reporter* : _____

W.F. RAYMOND United Kingdom

J. THOMAS - Belgium
A. NEIMANN-SØRENSEN - Denmark
B. VISSAC) - France
R. JARRIGE)
A. RIEMENSBERGER - Federal Republic Germany
E.P. CUNNINGHAM) - Ireland
J.R. SREENAN)
A. ROMITA - Italy
H. DE BOER - The Netherlands
J.W.B. KING - United Kingdom

Commission : P. L'HERMITE

Scientific Advisers : J.C. TAYLER - Nutrition Management
I.L. MASON - Genetics

Members of Specialist Working Groups

Genetics Selection : Chairman : B. VISSAC
Members : H.J. LANGHOLZ
E.P. CUNNINGHAM - J.W.B. KING
Observer : H. DE BOER

Physiology of Reproduction :

Chairman : J.R. SREENAN
Members : THIBAULT - L.E.A. ROWSON
T. BONADONNA - B. HOFFMANN

* During the preparatory stages R. Fevrier, France, was the Coordinator and W.F. Raymond, United Kingdom, the Reporter. Mr Raymond assumed both tasks on Mr Fevrier's appointment as Director-General of Institut National de la Recherche Agronomique.

ANNEX III

Nutrition Management :

Chairman : A. NEIMANN-SØRENSEN

Members : R. JARRIGE - B. HOFFMANN

A. ROMITA - OSLAGE

Observer : H. DE BOER

Carcass and Meat Quality :

Chairman : H. DE BOER

Members : L. SCHÖN - R. BOCCARD

A. ROMITA - R.W. POMEROY

Pathology :

Chairman : J. THOMAS

Members : H. FRERKING - G.N. WOODE

R. BROCHART - H. THORNBERRY

Additional scientists can be called to join the meetings of these sub-groups if their presence is required for advising the members of the groups.

ANNEX III

List of Institutes participating in the Programme on Beef Production

Subject	Contract Number	Institute	Responsible Researcher	Project
1. CALVING DIFFICULTIES	320	Abteilung für Tierzüchtung der Universität Hohenheim 7000 - STUTTGART - D Emil-Wolff Strasse 34	D. Fewson	Research on calving difficulties
2. MULTIBREED COMPARISONS	301	Station de Génétique quantitative et appliquée, INRA F - 78350 JOUY-EN-JOSAS	M. Poutou	Comparison of pure breeds in suckling herds (in Cooperation with ABRO)
	380	The Agricultural Institute Castleknock - DUBLIN - IRL	F. Ryan E.P. Cunningham	Development and evaluation of a specialised beef line
	370	ARC, Animal-Breeding Res. Organisation West Mains Road EDINBURGH EH9 3JQ - GB	J.W.B. King	Simulation study of milk/beef output. Multi-breed comparisons of the food efficiency of meat production from bulls. Multi-breed comparisons of growth and production efficiency of females of imported European breeds
3. CROSS-BREEDING EXPERIMENTS	360	Landsøkonomisk Forsøgslaboratorium, Relighedsvej, 25 DK - 1958 KØBENHAVN V	A. Neiman-Sorensen	Cross-breeding with European beef breeds on cows of Danish dairy and dual purpose breeds.
	321	Institut für Tierzucht und Haustiergenetik der Universität Göttingen D - 34 GÖTTINGEN Albrecht-Thaer-Weg, 1	P. Glodek	Cross-breeding between several types of cows
	301	Station de Génétique, INRA F - 78350 JOUY-EN-JOSAS	M. Poutou	Comparison between paternal breeds and strains on growth and food efficiency of their cross-bred progeny (with Friesian dams)
	383	The Agricultural Institute Dunsany Co. MEATH - IRL	P. Ryan M.J. Drennan J.F. Roche	To determine the effect of type of cross-bred cows used in single suckling on the incidence of calving difficulties, mature body size of the cow and performance of the progeny
	335	Ist. Di Zootechnica dell'Università di Parma Strada del Cornecchio I - 43100 PARMA	G. Buiatti	Economic results of the production of beef from cross-breeding.

Subject	Contract Number	Institute	Responsible Researcher	Project
4. SYNCHRONIZATION AND SUPEROVULATION	336	Ist. Di Zootechnica dell'Universita di Padova Via Gradenigo, 6 I - PADOVA	M. Bonsembiante	Specialized breeding of cows for the production of veal
	370	Animal Breeding Res. organisation West Mains Road Edinburgh EH9 3JQ - GB	J.W.B. King	Selection within and between breeds for relative growth rate
	322	Institut für Physiologie der Süddeutschen Versuchs- und Forschungsanstalt für Milchwirtschaft Weihen, Stephan Gechnisch Universität München Vöttlinger Strasse, 45 D - 8050 FLEISING	H. Karg E. Hoffman	Control of fertility, especially of the success of insemination using progesterone determination in the milk
	307	Station de Physiologie de la Reproduction Cr de Tous, BP 1 NOUZILLY F - 37380 MONNAIS	R. Ortavant	Induction of twins-birth after limited superovulation in bovines
	306	Station de Physiologie de la Reproduction Cr de Tours BP 1 NOUZILLY F - 37380 MONNAIS	P. Mauleon	Mastership of the reproduction in lactating cows
	381	An Foras Taluntais Co. Galway - IRL	P. Ryan J.F. Roche J. Sreenan	Development of practical route of administration of progesterone to cows. Endocrinology of the control of the oestrus cycle in cattle with various hormones; Control and synchronization of oestrus and ovulation in cows and heifers. Induction of a fertile ovulation in post partum beef cows with different sources of Follicular stimulation. Development of the most efficient insemination regime for cows and heifers which have had synchronization treatment. To determine the repeatability of response to particular synchronization treatments applied under different management conditions (i.e. at farm level)
5. REDUCING CALVING INTERVAL	390	Kliniek voor Veterinaire Verloskunde Yalelaan, 7 de Uithop UTRECHT - NL	Ch.W.de Bois	Shortening of the interval parturition - conception and induction of early pregnancy in heifers

Subject	Contract Number	Institute	Responsible Researcher	Project
6. EGG TRANSPLANTATION	350	Université Catholique, Unité des Sciences Vétérinaires Place Croix du Sud, 3 B - 1348 LOUVAIN-LA-NEUVE	L. Henriet	Study for the extensive utilisation of egg-transplantation.
	323	Institut für Physiologie der Süddeutschen Versuchs- und Forschungsanstalt für Milchwirtschaft Weißen Stephan Gechnisch Universität München Vöttinger Strasse 45 D - 8050 FLEISING	H. Karg	Manipulation of the luteolysis in the bovine as key problem for cycle synchronization.
	331	Hochschule Hannover D - 3 HANNOVER Bischofsholer Damm, 15	J. Hahn	Egg transplantation in cattle
	300	Laboratoire de la Station Centrale de Physiologie Animale, INRA F - 78350 JOUY-EN-JOSAS	F. Dumesnil du Buisson M. Perez M. Roustan	The involution in bovines
	371	ARC, Unit of Reproduction, Physiology and biochemistry 307, Huntington Road CAMBRIDGE CB3 0JQ - GB	L.E.A. Rowson	Egg transplantation in cattle
7. ENTERIC DISEASES	326	Klinik für Geburtshilfe und Gynäkologie des Rindes der tierärztlichen Hochschule Hannover D - 3 HANNOVER Bischofsholer Damm, 15	H. Frerking	Coli infections in new born calf
	303	C.R.Z.V. Station de Physiopathologie de la Nutrition Theix par St. Gènes F - 63110 BEAUMONT	P. Larvor	Prophylaxis and Therapy of the new born calf mortality
	373	ARC, Institute for Research on Animal Disease COMPTON, Newbury, Berkshire - GB	J.M. Payne	Characterization of E. Coli that cause enterotoxaemic disease of calves
8. METABOLIC DISEASES	327	Klinik für Geburtshilfe und Gynäkologie des Rindes der tierärztlichen Hochschule Hannover D - 3 HANNOVER Bischofsholer Damm 15	K.H. Lotthammer	Blood analysis to diagnose health and fecundity conditions in calves

Subject	Contract Number	Institute	Responsible Researcher	Project
	382	Department of Agriculture Veterinary Research Laboratory Abbotstown, Castleknock Co. DUBLIN - IRL	P.J.Smith	A study of concomitant hypomagnesaemia and hypocupraemia associated with the downersuckler calf syndrome
9. RESPIRATORY DISEASES	353	I.N.R.V. Dpt. de Pathologie Groeselenberg, 99 1180 BRUXELLES (Uccle)	G. Wellemans	Respiratory diseases in calves
10. FEEDING BULLS TO HIGH SLAUGHTER WEIGHTS	361	Landsøkonomisk Forsøgslaboratorium Relighedsvej 25 DK-1958 KØBENHAVN	H.Refsgaard-Andersen M.Sørensen	Influence of different slaughter weights and energy levels on growth. Feed conversion carcass and meat quality of young bulls and steers (Danish Friesian)
	302	Station de Recherches sur la viande et Laboratoire de la Production de Viande, C.R.Z.V. Theix - F - 63110 BEAUMONT	R. Boccard C. Beranger	Studies of growth and development in view of increased carcass weight and improved meat quality : influence of breed, feeding level and physiological state
11. BULLS FOR MEAT	372	Food Quality Dept. M.R.I. Langford, BRISTOL BS18 7 Y - GB	J. Norru J. Rhodes	Use of bulls for meat : a study of practice in Europe
12. FLUSHING OF COWS	304	C.R.Z.V. Laboratoire de Physiopathologie de la Nutrition Theix - F 63110 BEAUMONT	M. Brochart	Flushing post-oestral of cows
13. ANABOLIC AGENTS	391	Instituut voor Landbouwkundig Onderzoek I.L.O.B. Haarweg 8 WAGENINGEN - NL	P. Van Der Wal	Development of methods to improve protein formation
14. EARLY CALVING OF HEIFERS	352	Rijksstation voor Veevoeding Scheldeweg, 12 9231 GONFRODE	F. Buysse	Early breeding (age at calving 22-24 months) and use of once bred heifers for slaughtering in contrast with the usual extensive slaughtering of non-bred heifers
	351	Station de Zootechnie Chemin de Loreux 5800 GEMBLoux - B	P. Van Den Byvang	Utilisation of cows for reproduction of heifers used for slaughter
	305	C.R.Z.V. Laboratoire de la Production de Viande Theix par St. Gènes F - 63110 BEAUMONT	C. Beranger	Early calving of heifers destined to slaughter

Subject	Contract Number	Institute	Responsible Researcher	Project
15. BUTCHERY METHODS AND CARCASS CLASSIFICATION	324	Universität München, Institut für Tierwissenschaften, Lehrstuhl für Tierzucht D - 8050 FREISING-WEIHENSTEPHAN	F. Pirchner	Genotyp X interactions
	337	Ist. Sperimentale per la Zootecnica Via O. Panvinio, 11 I - ROMA	A. Di Celso Romita	Early calving of Cross-bred heifers (beef bulls X Friesian Cows) to increase number of fattening calves
	374	Grassland Research Institute HURLEY - Maidenhead Berkshire SLG SLR - GB	J. Tayler	The role of maize silage in feeding the once bred-heifer
	392	Instituut "Schoonoord" Dribergseweg, 10d NL - ZEIST	H. De Boer	Relating European (E.A.A.P.) classification standards for fleshiness and fatness to carcass composition and carcass yield
16. CARCASS QUALITY, PROCESSING AND CUTTING	393	Centraal Instituut voor Voedings- Onderzoek TNO Utrechtseweg, 48 NL - ZEIST	B. Krol B.J. Tinbergen P.C. Moerman	Objective measurements for the quality of beef
	328	Institut für Fleischerzeugung der Bundesanstalt für Fleischforschung Blaich, 4 D - 8650 KULMBACH	L. Schön	Research on the different use of the carcass of young bulls - ready to slaughter -
	394	Centraal Instituut voor Voedings- onderzoek TNO Utrechtseweg, 48 NL - ZEIST	B. Krol	Chilling and vacuum packaging of bovine meat

ANNEX III

COORDINATED ACTIVITIES WITHIN THE FRAMEWORK OF THE COMMON PROGRAMME ON BEEF

PRODUCTION

- Seminars including publications

- Early calving of heifers and its impact on Beef Production:
 - DK - HOLTE (COPENHAGEN) 4-6 June 1975
 - Proceedings published under Nr. EUR 5545
- Perinatal ill-health in Calves - UK - COMPTON
 - 22-24 September 1975
 - Proceedings published under Nr. EUR 5603
- Improving Nutritional Efficiency of Beef Production
 - F - THEIX (BEAUMONT) 14-17 October 1975
 - Proceedings published under Nr. EUR 5488
- Criteria of Assessment of Meat Characteristics
 - NL - ZEIST 10-12 November 1975
 - Proceedings published under Nr. EUR 5.489
- Optimization of Cattle Breeding schemes. IRL - DUBLIN
 - 26-20 November 1975
 - Proceedings published under Nr. EUR 5490
- Egg transfer in cattle UK - CAMBRIDGE 10-12 December 1975
 - Proceedings published under Nr. EUR 5491
- Cross breeding Experiments and Strategy of breed Utilization to increase Beef Production. D - VERDEN
 - 9-11 February 1976
 - Proceedings in Press under Nr. EUR 5492
- The maize crop as a basic feed for beef Production. YU - NOVI. SAD
 - 22-25 June 1976
 - Proceedings published under Nr. EUR 5561
- Calving difficulties and Early Viability of the Calf. D - FREISING (MUNCHEN) 4-6 May 1977
 - Proceedings to be published

- List of seminars organised up to the end of 1977

- Control of reproduction in the Cow. IRL - GALWAY 26-29 September 1977
- Patterns of Growth and Development in Cattle - B - GENT
 - 11-13 October 1977
- Respiratory Diseases in Cattle. UK - EDINBURGH 8-10 November 1977

- List of meetings of the working group on the Standardisation of the Criteria for Assessing the Meat Quality

- I - PORTICI 13-15 June 1976
- F - THEIX 5-7 October 1976

Recommendations for the Standardisation of the Criteria for assessing the measurement of Meat colour were issued from these meetings.

UK - LANGFORD - BRISTOL 17-19 May 1977

Recommendations on Tenderness testing were issued from this meeting and the previous one.

Recommendations on Organoleptic Assay of Meat are in preparation for the final drafting in the next meeting.

- A Training Course on Beef Carcass Classification for three trained classifiers from each country was also held in LANGFORD - BRISTOL from the 17th and up to the 21st January 1977.

A manual on "Standardised photography of Beef Carcasses" resulting from the course will be published and distributed to about one hundred European Institutes to whom it could be of help for assessing carcass quality at the issue of the experiments done in the fields of Nutrition and Genetics.

- Other Activities including Publications

- Anatomical jointing, tissue separation and weight recording proposed as the EEC Standard Method for Beef by P.L. BERGSTROM and D.R. WILLIAMS
Result of a *Commission* work done in LANGFORD, BRISTOL
To be diffused under Nr. EUR 5720
- Beef Production in the EEC and the coordination of research by the Commission of the European Communities.
J.C. TAYLER. Livestock Prof. Sci. (1976)
- 3, 305-318
Reprints diffused under Nr. ART 22702

ANNEX III

Exchange of Scientists

<u>Name</u>	<u>Country</u>	<u>Subject</u>	<u>Place visited</u>	<u>Nr days</u>	<u>Year</u>
R. BOUTERS	Belgium	Cytogenetics	Jouy en Josas (Fr)	4	1977
L. HENRIET	Belgium	Physiology of Reproduction	Jouy en Josas (Fr)	4	1977
G. ANDERSEN	Danmark	Carcass and Meat quality Assessment	Edinburgh (UK)	8	1976
B.BECH-ANDERSEN	Denmark	Carcass and Meat quality Assessment	Edinburgh (UK)	8	1976
B.BECH-ANDERSEN	Denmark	Genetics	Göttingen(FRG)	2	1977
T. LIBORIUSSEN	Denmark	Genetics	Göttingen(FRG)	2	1977
A. MEYLING	Denmark	Immunology	Compton (UK)	9	1976
A.NEIMANN-SØRENSEN	Denmark	Genetics	Göttingen(FRG)	2	1977
P. MAULEON	France	Cytogenetics	Jouy-en-Josas (Fr)	4	1977
J.P. RENARD	France	Physiology of Reproduction	Cracovic (P)	5	1976
J. TESTARD	France	Physiology of Reproduction	Cracovic (P)	5	1976
B. VISSAC	France	Genetics	Rome (I)) Alghero (I)) Ajaccio (F)) Marseille (F)	8	1977
K. FISCHER	F.R.G.	Carcass and Meat Quality Assessment	Bristol (UK)	4	1976
K.O. HONIKEL	F.R.G.	Carcass and Meat Quality Assessment	Bristol (UK)	180	1977
W.B. PABST	F.R.G.	Genetics	Harrogate (UK)	2	1976
P.G. BUIATTI	Italy	Genetics	Göttingen (FRG)	2	1977
V. RUSSO	Italy	Genetics	Göttingen (FRG)	2	1977
O.L. BERGSTRØM	Netherlands	Meat Quality Assessment	Bristol (UK)	6	1976
H. DE BOER	Netherlands	Carcass and Meat Quality Assessment	Caen (F)	2	1976
J. BRIDGER	United Kingdom	Immunology)	Copenhagen (Dk)	5	1976
)	Thiverval (F)	3	1976
A.J. BROWN	United Kingdom	Carcass and)	Caen (F)	2	1976
		Meat Quality)	Kulmbach (FRG)	5	1976
		Assessment)	Zeist (NL)	2	1976

<u>Name</u>	<u>Country</u>	<u>Subject</u>	<u>Place visited</u>	<u>Nr Days</u>	<u>Year</u>
H.E. COATES	United Kingdom	Carcass and Meat Quality Assessment	Kulmbach (FRG)	5	1976
R.J. HEITZMAN	United Kingdom	Anabolic Agents	Freising (FRG)	21	1975
P.D. JOLLEY	United Kingdom	Carcass and Meat Quality Assessment	Kulmbach (FRG)	180	1977
D.L. POLLOCK	United Kingdom	Cytogenetics	Jouy en Josas (F)	4	1976
D.N. RHODES	United Kingdom	Carcass and Meat Quality Assessment	Kulmbach (FRG)	4	1976
I. ROBERTS	United Kingdom	Carcass and Meat Quality Assessment	Kulmbach (FRG)	4	1976
G.N. WOODE	United Kingdom	Calf Enteritis	Copenhagen (Dk) USA + Canada	5 25	1976 1976
H.O. DUNN	U.S.A.	Cytogenetics	Jouy-en-Josas (F)	4	1977
A.H. CARTER ⁽¹⁾	New-Zealand	Genetics	Circular Tour in Member States	32	1976
R.T. BERZ ⁽¹⁾	Canada	Genetics	Göttingen	2	1977

(1) After participating in an EEC seminar these scientists were invited to continue their visits and make a report to the Commission.

ANNEX IV

Members of the Working Group on Plant Proteins

<u>Coordinator</u>	: M. DAMBROTH	Institut für Pflanzenbau und Saatgutforschung Braunschweig-Völkenrode (R.F.A.)
<u>Reporter</u>	: A. CAUDERON	INRA, Paris (Fr.)
	P. RASMUSSEN	State Exp. Station, Roskilde (DK)
	J. MOSSE	INRA, Versailles (Fr.)
	G. DARDENNE	Faculté d'Agronomie, Gembloux (B)
	B. BORGHI	Istituto Sperimentale Cerealicultura, Rome (It.)
	L. ZERBE	Bundesministerium für Ernährung, Landwirtschaft und Forst Bonn (R.F.A.)
	V. CONNOLLY	Agricultural Institute Carlow (Irl.)
	R. MULDER	Directie Landbouwkundig Onderzoek Den Haag (NL)
	M. LAMBERTS	Stichting voor Plantenveredeling Wageningen (NL)
	R. RILEY	Plant Breeding Institute Cambridge (U.K.)

ANNEX IV

List of participating Institutes in the Common (Joint) Programme on Vegetable Proteins

Subject	Contract Number	Institute	Responsible Researcher	Project
1. Methods of analysis	451	Rijksuniversiteit te Gent Laboratorium voor Planten- biochemie, 34, K.L. Ledeganckstraat 9000 GENT	C.F. Van Sumere	Reactions and interactions between free, oxidized and polymerized phenolic compounds on the one hand and proteins on the other. Difficulties caused by phenolic compounds during extraction of vegetable proteins, enzymes, viruses etc.
	452	Faculté des Sciences Agro- nomiques de l'Etat Labora- toire de chimie organique et biologique 5800 GEMBLoux	J. Casimir	Study of the free amino acid pool in various plants (lucerne field beans, lupines...), localization, significance in relation to protein fraction, composition, synthesis, variety factors
	404	Stat.agro. INRA Laboratoire Analyses des Sols, 273, rue de Cambrais 62000 ARRAS	D. Soignet	Techniques for the assessment of protein content and quality
	405	Station de Physiopathologie végétale - INRA - Bt Vague- mestre n° 1540 21034 DIJON CEDEX	Cl. Martin	Role of polyphenols incl. tann in apparent energy utilization and nitrogen metabolism
	420	Institut für Pflanzenbau und Pflanzenzüchtung der Georg-August Universität Von Siebold Strasse 8 D - 34 GÖTTINGEN	W.J. Schön	Micromethods for determining amino acids, lysine and tryptophan
	470	Grassland Research Insti- tute - HURLEY Maidenhead, Berks SL6 5LR	D.E. Beaver D.F. Osbon	Laboratory methods for determining the protein value of feedingstuffs and protein supplements for ruminants
	2. Genetics-Radiogenetics of higher plants with the exception of protein plants	460	Danish AEC Res. Establish- ment RISØ ROSKILDE 4000 - DK	H. Doll
407		INRA Station d'Amélioration des Plantes 9, Place Viala 34060 MONTPELLIER CEDEX - F	P. Grignac M. Rousset	Selection of varieties of durum and common wheat with a protein content first of 14-15 %, then of 17-18 %

Subject	Contract Number	Institute	Responsible Researcher	Project
	400	INRA Station d'Amélioration des Plantes - Domaine de Crouelle 63100 CLERMONT-FERRAND - F	A. Berbigier L. Jestin J. Chery	Introduction of the Hily gene into barley genotypes with improved protein content. Final protein content 14-15 %. Creation of beardless varieties of barley
	401	INRA Station d'Amélioration des Plantes - Domaine de Crouelle 63100 CLERMONT-FERRAND - F	M. Pollacsek	Creation of maize varieties with a 12-13 % protein content in the grain. Creation of maize varieties with a 15 % protein and a 0.65-0.70 lysine content. Study of the heritability of the "protein content" factor. Study of the relationship between proteo-synthesis and photosynthesis.
	436	Istituto di Agronomia Generale e coltivazioni erbacee - Università degli Studi di Padova via Gradenigo 6 35100 PADOVA - I	L. Toniolo	Selection of barley with a high grain yield and a high protein content
	438	Istituto Sperimentale per la cerealicoltura - Sezione Operativa per il mais Via Stezzano, 24 BERGAMO CP 164 - I	F. Salamini	Obtaining better fl ₂ hybrids
	437	Università Cattolica del S.Cuore Istituto di Botanica e Genetica Vegetale Via Emilia Parmense, 84 I - 29100 PIACENZA	C. Lorenzoni	Development of fl ₂ material for farming on a large scale. Testing the combining capacity of these hybrids
	491	Foundation for Agricultural Plant Breeding S.V.P. Drovendaalsesteeg 1, P.O.B. 117 6140 WAGENINGEN	H. Lamberts J. Mesdag	Comparing the protein production systems in wheat varieties of different origins. Combining the differences observed so as to improve the protein production potential. (Combination of minor effects with a cumulative action)
	492	Foundation of Agricultural Plant Breeding S.V.P. Drovendaalsesteeg 1, P.O. Box 117 6140 WAGENINGEN	H. Lamberts L.A.J.Slootmaker A.G. Boomstra	Selection of oat varieties with a higher protein content.

Subject	Contract Number	Institute	Responsible Researcher	Project
	422	Institut für Pflanzenbau und Pflanzenzüchtung der Justus Liebig Universität Ludwigstrasse, 23 D - 6300 GIESSEN	M. Zoschke	Creation of new species of barley and feed wheat with increased protein content, especially in the grains, and a higher content of lysine methionine and tryptophan
	423	Institut für Pflanzenbau und Pflanzenzüchtung der Justus Liebig Universität Ludwigstrasse, 23 D - 6300 GIESSEN	P. Schuster	Research into the inheritability of protein content and lysine content in spring barley
	472	Plant Breeding Institute Maris Lane TRUMPINGTON CAMBRIDGE CB2 1Q-GB	R. Riley	Attempt to obtain grain with a sufficient time-lag between protein synthesis and carbohydrate synthesis. Study of the correlation between the number of RNA cistrons, the level of RNA _p synthesis and the level of protein synthesis
	473	Rothamsted Experimental Station HARPENDEN - Herts AL5 2JQ - GB	B.J. Mifflin	Selection of mutants producing large quantities of essential amino acids (use of protoplasts selected for their resistance to amino acid analogues, followed by regeneration of the whole plant). Project completed in the case of tobacco and carrots. Work still to be done on soya beans, peas, sunflower, wheat, rice, lupin and colza).
3. Physiology and phytotech. of higher plants (except protein plants) including animal nutrition.	424	Universität Hohenheim - Abteilung Pflanzenzüchtung Postfach 106-05040 D - 7000 STUTTGART 70	W.G. Pollmer	Adaptation of experimental maize hybrids (high protein and lysine content in the grains) to European conditions.
	473	ROTHAMSTED Experimental Station HARPENDER, Herts AL5 2JQ - GB	B.J. Mifflin	Biochemical work. Detailed study of protein synthesis and the effect thereon of exogenous amino acids
4. Genetics and phytotechnology (including Rhizobium) of legumes and protein plants	454	Faculté des Sciences Agronomiques de l'Etat, Laboratoire de Microbiologie 11, av. de la Faculté Agronomique, 5800 GEMBLoux	CH. Bonnier and	Reinforcement of symbiosis in various legumes by plant mutation and selection and genetic modification of the corresponding strains of Rhizobium
	454	Laboratoire de microbiologie de l'Université des Sciences et Techniques de Lille à 59650 VILLENEUVE D'ASCQ.	Prof. J. Guillaume	

Subject	Contract Number	Institute	Responsible Researcher	Project
	455	Université Catholique de Louvain - Faculté des Sciences Agronomiques Place Croix du Sud 3 1348 LOUVAIN-LA-NEUVE	J.A. Meyer	Study of the effect of exogenous and endogenous soil minerals (excl. nitrogen) and trace elements on the symbiotic fixation of nitrogen in order to maximize fixation and the economic increase in protein yield (Supplements Masterson's work, Dublin)
	409	Station de Génétique des Plantes CNRA - Etoile de Choisy Route de St-Cyr 78000 VERSAILLES - F	R. Cousin	Selection of varieties of peas with an average yield of 30-45 quintals of dried peas and a minimum protein content of 30.
	406	Station d'Amélioration des Plantes de DIJON INRA, B.V. 1540 21034 DIJON CEDEX - F	J. Picard	Selection (using male sterility and crossings) of varieties of field bean without tannin a rich in protein suitable for feeding monogatri animals
	408	Station d'Amélioration des Plantes, Centre de Recherches de RENNES Domaine de la Motte-au-Vicomte BP 28 - F 35650 LE RHEU	P. Berthelem	In-depth study of the mechanism of male sterility. Research into preservatives of male sterility.
	403	Laboratoire des protéines et des acides aminés - C.N.R.A. Etoile de Choisy, Route de St-Cyr - 78000 VERSAILLES - F	J. Mossé	Selection of seed of legumes and oil-bearing plants (colza, sunflower, field bean, pea, lupin) for an improved amino acid content
	402	C.N.R.A. - VERSAILLES Etoile de Choisy, Route de St-Cyr 78000 VERSAILLES - F	J. Mossé	Biochemical Work. Establishment of the mathematical relationship (linearity) between protein content and quality (lysine) in cereal grains (already done for barley and sunflower). Aim : marketing on a quality basis.
	414	Laboratoire de Génétique des microorganismes - C.N.R.A. Route de St-Cyr 78000 VERSAILLES - F	J. Denaire	Working out a system of conjugation for the establishment of chromosome maps for Rhizobium and the improvement of hybrid strains.
	413	Laboratoire de microbiologie des Sols, 7, rue Sully INRA - B.V. 1540 21034 DIJON CEDEX - F	M. Obaton	Ecology of Rhizobium in the soil and survival of bacteria introduced, equilibrium and genetic transferability between strains.
	412	Laboratoire de microbiologie des Sols, 7, rue de Sully INRA - B.V. 1540 21034 DIJON CEDEX - F	N. Amarger	Study of variability in the efficiency of Rhizobium-legumi nosae couples for the fixation of nitrogen in the presence of bound nitrogen (The plants concerned are field beans and lupins)

Subject	Contract Number	Institute	Responsible Researcher	Project
	411	Laboratoire de microbiologie des Sols, 7, rue Sully INRA - B.V. 1540 21034 DIJON CEDEX - F	G. Catroux	Working out a method for selecting Rhizobium strains for efficiency of nitrogen fixation, competitive power and ability to survive in soils (The plants concerned are field beans, peas, lupins, soya beans and lucerne).
	480	An Foras Talúntais Johnstown Castle Co. WEXFORD - IRL	C.L.Masterson	Glasshouse and field trials to discover the interactions between mineral nitrogen and that obtained from nitrogenfixing bacteria, and its effect on yield and quality in legumes, work on white clover and lucerne).
	481	An Foras Talúntais Johnstown Castle Co. WEXFORD - IRL	P. Ryan P. Murphy	Physiological factors affecting the symbiotic fixation of nitrogen (photo-synthesis, growth stage ect.)
	482	Agricultural Institute Oak Park Research Centre CARLOW - IRL	P. Ryan V. Connolly	Creation of improved varieties of white clover (Trifolium repens) capable of maintaining a high protein content in preserved fodder (silage and hay). Stress is also laid on maintaining white clover in pasture and on the host-Rhizobium relationship.
	435	Istituto Sperimentale per le Colture Foragere - Viale Piacenza 25 20075 LODI (Milano) - I	P. Rotili	Creation of highly productive lucerne cultivars (making full use of heterosis) suitable for dehydration.
	440	Istituto di Miglioramento genetico delle piante agrarie dell' Università di BARI Via Amendola 165/A 70126 BARI - I	G.T. Scarascia-Mugnozza	Study of the genetic bases of bio-agronomic characteristics. Selection of field beans (by crossing) to obtain hybrids with a high protein content, high grain production, resistant to cold, rust and broomrape, and good adaptability.
	441	Istituto di Microbiologie Agrarie e Tecnica Via dell Borghetto, 80 I - 56100 PISA	A. Lepidi	Improvement of nodule production capacity and symbiotic fixation of nitrogen in clover and lucerne (research into the DNA of Rhizobium).
	442	Istituto di Agronomia Generale e coltivazio-erbacee Università degli Studi Via Gradenigo, 6 35100 PADOVA - I	L. Toniolo	Selection of a soya bean genotype with grains of high protein content, suitable for North-East Italy (the main problem is premature development).

Subject	Contract Number	Institute	Responsible Researcher	Project
	443	Istituto di Agronomia generale e coltivazioni erbacee dell' Università di Napoli Via Università, 100 80055 PORTICI (Na) - I	L. Postiglione	1) Comparison of varieties of soya bean effect of date planting (Soja hispida, Moench) 2) Adaptability trials with new lupin cultivars (Lupinus sp.)
	493	Instituut voor Biologisch en Scheikundig onderzoek van landbouwgewassen (IBS) Bornesteeg 65/67, PO Box 14 NL - 6140 WAGENINGEN	G. Dantuma Th. Alberda	Study of the relationship between optimum production and the physiological processes in order to obtain regularity of production in the field beans.
	490	Instituut voor Plantenveredeling van de Landbouwhogeschool Lawicke Allee 166 NL- WAGENINGEN	Ph. De Vries	Research into an efficient method of selection to obtain a high content of good-quality protein
	494	Stichting voor Plantenveredeling (S.V.P.) Postbus 117 Droevendaalsesteeg, 1 NL - 6140 WAGENINGEN	H. Lamberts R.J. Heringa	Research into high-yield proteinrich combinants in Vicia and Lupinus in relation to the symbiotic fixation of nitrogen.
	426	Institut für Pflanzenbau und Pflanzenzüchtung der Georg-August Universität von Sieboldstrasse 8 3400 GÖTTINGEN - D	G. Röbbelen	Development of a dual-purpose colza producing protein (large quantities of lysine, methionine and isoleucine)
	425	Institut für Pflanzenbau und Pflanzenzüchtung, Fachgebiet "Pflanzenzüchtung" Ludwigstrasse 23 D - 6300 GIESSEN	W. Schuster	Technological project : improving the feed value of colza oilcakes. A colza is required suitable for both industrial use and use as a feedingstuff.
	471	Welsh Plant Breeding Station ABERYSTWYTH, Plas Gogerddan Aberystwyth CARDIGANSHIRE SY23 3EB	J.C. Cooper	Selection of lucerne plants combining longevity, high yield and resistance to disease
	472	Plant Breeding Institute Maris Lane, Trumpington CAMBRIDGE CB2 2LQ	Dr. D.A. Bond	Breeding of new varieties of field beans

Subject	Contract Number	Institute	Responsible Researcher	Project
5. Efficient use of feed grains and pastures and harvesting and storing techniques	450	<u>Joint project</u> Groupe de Recherches sur les protéines fourragères de Zootechnie rue des Vétérinaires, 45 1070 BRUXELLES	J.M. Bienfait	Research into a balanced manure providing optimum protein production
	453	<u>1. Technological section</u> Laboratoire d'Ecologie des prairies - Université Catholique de Louvain Place Croix du Sud 1348 LOUVAIN-LA-NEUVE <u>2. Nutrition</u> Laboratoire d'Ecologie des Prairies - Michamps 6654 LONGVILLY	J. Lambert	Comparison of different ways of storing legume/grass mixture
	461	Statens førsøgsvirksomhed i plantekultur Kongevejen, 79 DK - 2800 LYNGBY	E.J. Nørdgaard-Pedersen	Value as animal feed of silage effluent and the juice extract from green fodder
	410	Station de Biochimie et Physiologie des Céréales Cerdia - 91.305 MASSY Centre de Recherches Agro-Alimentaire - La Geraudière 44000 NANTES - F	L. Petit	Use of proteins obtained from legume seeds, study of extraction and refinement techniques for the preparation of isolate and concentrates by physiochemical treatment
	483	Animal Production Research Center Dunsinea - Castleknock Co. DUBLIN - IRL	P. Ryan M.F. Maguire	Extraction and use of proteins from fodder crops
	495	Institute for Biological and Chemical Research on Field Crops and Herbage (I.B.S.) Bornesteeg 65/67 Box 14 NL - 6140 WAGENINGEN	Th. Alberda	Production of protein-rich fodder and forage crops for animal feeding

Subject	Contract Number	Institute	Responsible Researcher	Project
	421	Institut für Pflanzenbau und Pflanzenzüchtung der Georg-August Universität von Sieboldstrasse 8 D - 3400 GÖTTINGEN	G.B.Kobabe	Perennial rye-grass : selection of genotypes applying male sterility
	474	National Institute for Research in Dairying Shinfield, Reading RG6 9AT - GB	F.H.Dodd J. Connel	Fodder fractionation and production of proteins for human consumption.

ANNEX IVCoordinated Activities within the framework of the common programme on
Vegetable Proteins

Seminar : - "Problems of quality of vegetable proteins"
- Dijon - November 3-4th, 1976

Workshop : - "Separation of proteins"
- Harpenden, November 8-12th, 1976

Symposia : - Symposium on Green Crop fractionation
- Harrogate - November 25-27th, 1976
- International Symposium on N₂ Fixation
- Salamanca - September 13-17th, 1976

Meetings of Working Party :

- Analytical methods
- Dijon - February 17-18th, 1976
- Genetics of the higher plants, excluding legumes
- Cambridge - February 24-26th, 1976
- Physiology, Phyto-technology of higher plants
- Risø - March 9-11th, 1976
- Genetics and phyto-technology of the legumes
- Padova - March 16-18th 1976
- Stuttgart-Hohenheim - June 30th-July 2nd, 1977
- Fodder grasses and technology of fodder crops
- Dublin - April 6-8th, 1976
- Wageningen - February 8-9th, 1977
- Improvement of maize proteins
- Hohenheim - September 1st, 1976

Publications :

- Techniques for the Separation of Barley and Maize Proteins
- 1977 EUR 5687 e
- In preparation
Quality Problems in Protein of Legumes seed plants EUR 5686 e
Carbohydrate and Protein Synthesis

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ANNEX IV

Exchange of Scientists

<u>Name</u>	<u>Country</u>	<u>Subject</u>	<u>Place visited</u>	<u>Nr days</u>	<u>Year</u>
Dr. SCHILPEROORT	Netherlands	Rhizobium	Pisa (I)	3	1976
Dr. ZIMMER	Fed.Rep. Germany	Genetics of maize	Eckartsweier(FRG)	1	1976
Dr. CORDIER	Belgium	New sources of Proteins	Geneva (Ch)	5	1977
Dr. BRIGHT	United Kingdom	Authers and cell cultures	Berlin-Münich (FRG)	3	1976
Dr. ALBERDA	Netherlands	Herbage fertilizers	Michamps (B)	2	1976
Dr. RHODES	United Kingdom	Genetics and phyto techny of Maize	Eckartsweier(FRG)	5	1976
Dr. LEPIDI	Italy	Biochemistry of proteins	Leiden (Nl)	2	1976
Dr. TONIOLO	Italy	Genetics of cereals and vicia faba	Giessen (FRG) Göttingen (FRG)	3	1976
Dr. CHERY	France	Genetics of cereals (barley)	Giessen (FRG)	1	1976
Dr. MARLIER et BAUDART	Belgium	Protein extraction from oats	Versailles (F)	15	1976
Prof. SCARASCIA- MUGNOZZA	Italy	Genetics of vicia	Cambridge (U.K.)	10	1976
Prof. MOSSE et BAUDET	France	Protein extraction from cereals	Gembloux (B)	2	1977
Prof. J. CONNELL	United Kingdom	Juice extraction from legumes and herbage	Edinburgh (U.K.)	1	1977
		Breeding and fertilization of Lucerne	Lusignan (F)	2	1977
		Fertilization of Lucerne	Michamps (B)	2	1977
Prof. LAMBERT	Belgium	Improvement of Lucerne	Lusignan (F)	4	1977

ANNEX V

Financial statement for Research Programmes undertaken by virtue of Council Decision N°(75/460/EEC)

Programmes	1975			1976			1977 *		
	Funds available	Funds used	Balance	Funds available	Funds used	Balance	Funds available	Funds used	Balance
<u>ANIMAL LEUCOSES</u>									
Common Programme	90.000	88.377	1.623	425.000	264.783	160.217	460.000	158.892	301.108
Coordinated Programme	59.000	55.814	3.186	95.000	45.069	49.931	86.500	84.382	2.118
<u>LIVESTOCK EFFLUENTS</u>									
Common Programme	120.000	111.626	8.374	680.000	539.809	140.191	740.000	318.532	421.468
Coordinated Programme	20.000	11.092	8.908	45.000	45.000	0	49.000	4.174	44.826
<u>BEEF PRODUCTION</u>									
Common Programme	243.000	216.020	0	1.174.000	1.001.618	101.822	1.290.000	453.741	774.774
Coordinated activities		26.980			70.560			61.485	
<u>PLANT PROTEIN</u>									
Common Programme	113.500	108.887	2.213	820.000	639.921	150.897	900.000	345.873	529.664
Coordinated activities		2.400			29.182			24.463	
	645.500	621.196	24.304	3.239.000	2.635.942	603.058	3.525.500	1.451.542	2.073.958

* Statement as at 20th October 1977 which reflects payments for work done to 30 June 1977. It is anticipated that the balance for 1977 (i.e. for the period 1.7.77 - 31.12.77) will be used in full.