COMMISSION OF THE EUROPEAN COMMUNITIES

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Proposal for a

DECISION (EEC) OF THE COUNCIL

on common and co-ordinated research programmes in the fields of animals leucoses, livestock effluents, beef production, plant protein production

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(submitted by the Commission to the Council)

VI/340/75-E

Proposal for a Council Decision on Common and Co-ordinated Research Programmes in the fields of Animal Leucoses, Livestock Effluents, Beef Production, Plant Protein Production

Explanatory Memorandum

In applying Article 5 of Regulation (EEC) No. 1728/74 concerning the co-ordination of agricultural research, the Commission has studied the fields in which co-ordination of agricultural research activities and the setting up of common research projects will contribute most effectively to the objectives of the common agricultural policy, while making the best use of the means available.

This study was carried out with the assistance of the ad hoc group of Directors-General of Agricultural Research in the member States*. The Commission selected four areas in which a specific measure in the sense of title II of Regulation (EEC) No. 1728/74 appeared to be necessary.

These four areas are;

Animal Leucoses
Livestock Effluents
Beef Production
Plant Protein Production

Co-ordination Research Programmes

Research being undertaken in member States within the fields of Animal Leucoses and Livestock Effluents and which is relevant to the objectives of the specific measures will be co-ordinated principally by means of seminars, regular exchange of information between participants, exchange of research workers, study visits, and workshops. This will help to improve the overall effectiveness of the individual research projects and relate the work more directly to the objectives of the common agricultural policy.

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* This group was replaced by the Standing Committee on Agricultural Research pursuant to Article 7 of Council Regulation (EEC) No. 1728/74 of 27 June 1974

Common programmes

In all four priority areas there is a need to support existing research either by increasing or by supplementing member States' efforts by means of a Community initiative. The Commission has devised common programmes which will meet this need. These programmes will be undertaken and financed jointly by the Community and the member States. In addition to the management of the projects making up the common programmes, activities similar to those undertaken for the co-ordination research programmes will be undertaken within the common programmes.

Participants

The Commission believes that common programmes should be undertaken by research centres and institutes in all member States. Where appropriate, the co-ordination research activities may include participants from third countries or international organisations.

Timetable

The programmes must take place over a fixed period. The duration foreseen is from 1975-1979. The programmes are designed to begin at the earliest in Autumn 1975.

The Commission, therefore, attaches great importance to an early Decision.

The Commission will establish adequate co-ordination and will, in particular, endeavour to avoid duplication between programmes included in this proposal and other programmes for Community research already being implemented, in particular the "Environmental Research" programme (indirect action) and the programme concerning the application of nuclear techniques to agronomic research.

Finance

The financial contribution from the Community will differwith the kind of programme. For co-ordination research programmes, the expense will be restricted to the incidental costs of the organising, eg. travelling expenses, publication of reports, etc. It will not involve a direct subvention for the research itself. For common programmes, it will be based on a direct contribution from the Commission to the responsible organisation in accordance with a contract agreed between the parties.

The detailed estimates are set out in Annex II. For co-ordination research programmes they are based on the experience the Commission has already

gained from similar activities in the framework of the programmes of research into African and classical swine fevers*. The estimates for the common programmes are calculated on the basis of 50% of likely costs. The figures, however, refer mainly to costs arising in 1973. In the interests of economy, the Commission wishesto hold its contribution constant.

The budget for the Commission for 1975 provides in Ch. 98 a sum of 1,000,000 u.c. for the co-ordination of agricultural research. 645,500 u.c. of this sum will be used for the proposed programmes. For the years 1976-1979, the amounts necessary will be presented in the Commission's annual budget proposals.

Standing Committee on Agricultural Research

A Standing Committee on Agricultural Research is set up under Article 7 of Regulation (EEC) No. 1728/74. It acts as a Management Committee** in relation to decisions adopted by the Council under Article 5 of the Regulation. It will be asked to give an opinion on draft measures submitted to it by the Commission. These draft measures will concern the detailed rules for the application of this Decision, in particular the criteria for selecting the research centres and institutes which will participate in the specific measures, the scientific priorities to be followed within a common programme, and the orientation of a programme during its planned lifetime.

Conclusion

The Council is asked to adopt a Decision on common and co-ordination research programmes in the fields of Animal Leucoses, Livestock Effluents, Beef Production and Plant Protein Production in accordance with Article 5 of Regulation (EEC) No. 1728/74 of 27 June 1974.

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* Council Decision No. 72/446/EEC of 28.12.72 O.J. 218/50 of 31.12.72
Council Decision No. 74/650/EEC of 9.12.74 O.J. 352/46 of 28.12.74
Council Decision of 22 July 1966

** This is a Management Committee of the type provided for by the regulations on the common organisation of agricultural markets.

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VI/840/75-E

Proposal for a Council Decision on Common and Co-ordination Research Programmes in the fields of Animal Leucoses, Livestock Effluents, Beef Production and Plant Protein Production

THE COUNCIL OF THE EUROPEAN COMMUNITIES

Having regard to the Treaty establishing the European Economic Community and in particular Article 43 thereof;

Having regard to the proposal from the Commission;

Having regard to the Opinion of the European Parliament;

Whereas Regulation (EEC) No. 1728/74 on the co-ordination of agricultural research[1] provides for the co-ordination at Community level of national research activities in order to contribute to the realisation of the objectives of the common agricultural policy;

Whereas article 5 of the above Regulation provides that the Council shall decide on specific measures for the co-ordination of such activities so as to allow rational organisation of means employed, efficient use of results and the orientation of such work towards the aims of the common agricultural policy; and on the implementation of joint projects designed to second or supplement work undertaken in the member States in fields which are of particular importance to the Community;

Whereas progress in research on epizootics makes a direct contribution to the improvement of productivity of agricultural enterprises and whereas it eliminates major obstacles to the harmonisation of legislation and to the intracommunity and external trade in animals and animal products; whereas the lack of a reliable method of diagnosis for bovine leucosis constitutes an impediment to the free trade in breeding animals;

Whereas the trend to specialisation and intensification of animal production has given rise to large and intensive livestock units, very often

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(1) O.J. No. L 182 of 5 July 1974

without associated land; whereas the dumping of waste from these units presents major problems for the pollution of the environment, particularly where these enterprises are near centres of population; whereas, moreover, these livestock effluents can be very valuable manure; whereas for this purpose farmers usually use mineral fertilisers which have risen in price and the availability of which in the long term is not guaranteed; whereas the intensive usage of fertilisers equally presents a pollution risk;

Whereas a large part of the agricultural income in the Community depends on beef production; whereas, in view of the market situation, the efforts of the common agriculture policy tend towards the conversion of milk production to beef production; whereas independently of structural problems the profitability of intensive beef production is inadequate; whereas the necessary increase in productivity cannot be obtained by increasing the price; whereas both progress in breeding and an improvement of the quality and quantity of meat per animal are necessary; whereas progress in research usually is less quick, less direct and less easy in the field of beef production;

Whereas the Community is confronted by a serious deficiency in the supply of protein for animal feed; whereas, at the same time, the cost of protein products is of increasing importance in the end price of animal products; whereas, in consequence, it appears essential to increase protein supplies in the Community; whereas an important contribution can be made by improving the protein yield of crops already grown in the Community; whereas, in parallel, the introduction of new species and varieties rich in protein must be studied; whereas, simultaneously, research is necessary in the use of proteins in animal feed;

Whereas the financial contribution of the Community shall be decided by the Council;

HAS DECIDED AS FOLLOWS:

Article 1

1. Common and co-ordination research programmes in the fields of animal leucoses and livestock effluents and common research programmes in the fields of beef production and plant protein production, as described in Annex I, are hereby established.

2. The programmes will begin in 1975 and end on 31st December 1979.

Article 2

The detailed rules of application of this Decision, in particular, the scientific priorities to be followed within a common programme, the criteria for selecting the centres of research and the institutes which will be invited to participate in the specific measures, and the orientation of a programme while it is being carried out will be decided in accordance with the procedure of Article 8 of Regulation (EEC) No. 1728/74.

Article 3

The Commission will carry out the co-ordination research programmes in animal leucoses and livestock effluents, in particular by the organisation of seminars and conferences, study visits, exchange of researchers, scientific workshops, and the collation, analysis and publication of results.

Article 4

Before the 31st July 1977 and after the programmes are completed, the Commission will make a report to the European Parliament and to the Council on the results of the research undertaken on the programmes arising from this Decision and on the use of the sums allocated in accordance with Article 5 of this Decision.

Article 5

The financial participation of the Community in the execution of the programmes mentioned in Article 1, amounts to the following sums:

Animal Leucoses	Co-ordination research programme	391,000 u.c.
	Common programme	2,019,000 u.c.
Livestock Effluents	Co-ordination research programme	225,000 u.c.
	Common programme	3,210,000 u.c.
Beef Production	Common programme	5,689,000 u.c.
Plant Protein Production	Common programme	4,457,500 u.c.

Done at Brussels,

For the Council,

The Chairman

Annex I

Scientific Content of Programmes

I. ANIMAL LEUCOSES

Avian Leucosis and Marek's disease

a) Co-ordination research programme on the differential diagnosis between Marek's Disease and avian leucoses

- Establishing common criteria for the differential diagnosis between Marek's disease and the avian leucosis complex by means of regular contacts between research workers in the member States under the guidance of the Commission.

b) Common programme on the mechanism of resistance to Marek's disease with a view to increasing the effectiveness of vaccination and to developing new methods to control the disease

- Type of Resistance

  Vaccinal Resistance - Study of vaccination failures

  Genetic Resistance - Inheritance of resistance

  Vaccination to study genetic resistance and sensitivity to Marek's Disease.

- Stimulation of Resistance

  Viral structural antigens and antigens associated with the virus of Marek's Disease and the associated viruses of the herpes.

- Mechanisms of Resistance
  - Antibodies - the rôle of antibodies in genetic resistance
    - the rôle of humoral antibodies in vaccinal immunity
  - Antibodies and immunity transmitted by the cell
  - Immunity transmitted by the cell and macrophages

    the rôle of these mechanisms as specific transmitters of vaccinal and genetic resistance

- Interferon
- Resistance of "target" cells to "mutation"
  malignant transformations of lymphoid cells on the properties of mutated cells
- Naturally produced hormones
  effect of stress

Bovine Leucosis

a) Co-ordination research programme on improving the diagnosis of bovine leucosis in order to facilitate better control measures by means of finding a simple, safe and standardised test for early diagnosis and by helping epizoological studies

- Development of specific methods for the early diagnosis of Bovine Leucosis, including studies on the use of immunodiffusion, immunofluorescence, and radio-immune assay techniques.
- Differentiation between enzootic and other forms of Bovine Leucosis, including histological studies of tumours.
- Cell electrophoretic studies with a view to distinguishing between cells from chronic and acute leucosis of cattle.

These studies will lead to:

- Standardisation of histological staining methods;
- Correlating serological data with the different histopathological forms of the disease.

b) Common programme on virological and etiological studies to identify and study the infectious agent of bovine leucosis

- Laboratory methods
- Development of methods for the large-scale production and

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quantification of C-type virus particles

Work on cell-lines and cultures; in vitro transmission; techniques of titration of the virus

- Studies on the biochemical, biophysical and antigenic properties of the C-type virus particle and its rôle in the etiology of leucosis

including various purification procedures; studies on reverse transcriptase, 60-70S RNA, and C-type particle proteins; hybridisation; attempts to induce the disease with purified C-type virus particles.

- The genetics and pathogenesis of Bovine Leucosis and its transmission
  - Studies of "masked" transmission

    Investigations to determine whether there exists a latent period (no symptoms but virus presen t) and how this stage arises and changes; studies of the development of leucosis including the rôle of C-type particles; transmission by ova and sperm.
  - Experiments to increase the virulence of the etiological agent e.g. by passages of cell-free and cell-containing leucotic material to new-born calves, to shorten the incubation period, to concentrate the virus in the host and study the rôle of the agent; attempts to facilitate the passage from the haematological to the tumour phase; transmission accompanied by treatment with irradiation and immunosuppressive drugs.
- Transmission of Bovine Leucosis to other species

II. LIVESTOCK EFFLUENTS

a) Co-ordination research programme to establish comparable methods of analysis of livestock effluents applicable throughout the Community and to find solutions adapted to local situations

- Comparison of methods of analysis

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- Combatting odours and pathogenic germs by means of chemical treatment in the storage containers

- Combatting odours produced in the cattle shed

- Disposing of effluent other than through agricultural use.

b) Common programme to intensify and complement research on the use of manure by land spreading

- Production and storage of semi-liquid manures including elimination of pathogenic germs, reduction in nitrogen content and biological oxygen demand (BOD), study of the chemical characteristics of odours, and ventilation of storage containers, with a view to controlling odours.

- Effects of the physical, chemical and microbiological characteristics of semi-liquid manure and in particular its content of fertilising elements, organic matter and pollutants, on:
  yield and quality of the crop,
  soil characteristics,
  flora and fauna of the soil,
  quality of the water in relation to:
    type of soil
    amount of semi-liquid manure
    manuring season
    climate
    crop
    method of spreading

- Pollutant content
  effect of pollutants with particular reference to pathogenic germs and parasites, heavy metals, in particular copper, antibiotics, antiseptics and detergents.

- Establishment of a mathematical model
  input will include main factors of the characteristics of

manure, type of soil, climatic factors, and crops to provide data on ecological and economic consequences of different location decisions.

III BEEF PRODUCTION

Common programme to improve efficiency of beef production, improve output and increase quality of meat

- To obtain a greater number of viable calves through
  - better control of reproduction by:
    reduced calving interval;
    oestrus synchronisation;
    sex determination;
    superovulation and egg transplantation;
  and to consider the practical aspects of these methods in relation to livestock improvement and increased production of beef.

- A reduction in calf mortality from perinatal intestinal infections, metabolic diseases and respiratory disease during and after birth

- Early breeding and the use of once-bred heifers for slaughter by promoting an earlier gestation and induced calving without affecting viability of calves and quality of the carcass and meat, and considering the problems of nutritional and endocrinological control of growth, oestrus, parturition and lactation with the purpose of effective application of research in this field.

- To improve quality of meat and increase the weight of the carcass through a better understanding of the genetic, physiological and nutritional factors influencing body development by:
  - use of bulls for increased slaughter weights,
  - study of cattle behaviour,
  - improvement of the nutritional efficiency of beef production,
  - study of nutritional and physiological factors influencing growth and development of beef cattle and consideration of the application of research results to practice.

- To standardise the criteria for slaughter and carcass assessments in the live animal and the carcass, and to improve the study of carcass and meat quality in relation to experimental design in nutritional and genetic experiments.

- To improve the utilisation of the carcass by technological means, i.e. research on processing, packing and cutting on meat quality.

- To achieve a better understanding, including co-operative programmes and comparative studies on selection criteria, of the suitability of the major European breeds alone and for cross-breeding with Friesians for:
  fertility, early sexual maturity, ease of calving, genetic resistance to perinatal illness, maternal ability, growth, feed utilisation, characteristics of carcass and meat quality with the help of the study of blood groups and genetic markers and with the purpose of selection for good quality meat.

This research must take into consideration the economics of beef production in integrating biological and economic approaches with a view to improving the balance between milk and beef within the Community.

IV PLANT PROTEINS

Common research programme for the qualitative and quantitative improvement of Plant Proteins

- methods and techniques for analysing and assessing proteins
  - automation of analyses
  - effect of polyphenols on the apparent digestibility of calories and nitrogen
  - relationship between the in-vivo digestibility of proteins, on the one hand, and the physical solubility and solubilisation by various enzymes on the other hand.

- Improvement of crops with a high protein content, research in the field of genetics and selection

- fodder grasses and legumes
  the rôle of nitrogen-fixing bacteria
  methods for improving purple clover and lucerne
  effect of fertilising
  the possibility of selecting fodder grasses for their protein content
  the production from grass of fodder with a high protein content

- seed legumes
  the rôle of nitrogen-fixing bacteria
  the study of proteins from various species
  pea improvement
  methodology of yield selection
  adaptation of new crops to European conditions
  study of the use of existing European species of high protein plant

- Cereal improvement
  - the protein synthesis in cereals, its pathways and control, genetic variability and its consequences
  - the possibilities and methods of genetic improvement in autogamous cereals (common wheat, barley)
    prospecting for collections
    crossings
    use of mutations
    study of selection sieves
  - the genetics of maize, and in particular:
    the methods of using Floury 2 and Opaque 2 genes
    research into modifiers
    the study of the relationship between high protein content, the quality of the proteins involved and seed yield.

Annex II

Financing of Common and Coordination Research Programmes

	1975	1976	1977	1978	1979	TOTAL
ANIMAL LEUCOSES						
Marek's Disease & Avian Leucoses						
Coordination Research Programme	14.000	35.000	38.000	41.000	-	128.000
Common programme*	50.000	250.000	270.000	295.000	320.000	1.185.000
Bovine Leucosis						
Coordination Research Programme	45.000	60.000	48.500	52.500	57.000	263.000
Common Programme*	40.000	175.000	190.000	206.000	223.000	834.000
LIVESTOCK EFFLUENTS						
Coordination Research Programme	20.000	45.000	49.000	53.000	58.000	225.000
Common Programme*	120.000	680.000	740.000	800.000	870.000	3.210.000
BEEF PRODUCTION						
Common Programme*	243.000	1.174.000	1.290.000	1.420.000	1.562.000	5.689.000
PLANT PROTEIN						
Common Programme*	113.500	935.000	1.030.000	1.133.000	1.246.000	4.457.500
TOTAL: Common programmes	566.500	3.214.000	3.520.000	3.854.000	4.221.000	15.375.500
Coordination Research Programmes	79.000	140.000	135.500	146.500	115.000	616.000
GENERAL TOTAL:	645.500	3.354.000	3.655.500	4.000.500	4.336.000	15.991.500

* These estimates for the most part are based on a Community contribution of 50% of costs established in 1973/4