UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

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BEFORE THE ADMINISTRATOR

In the Matter of	)	
	)	
Union Carbide,	)	
	)	
Claimant	)	
	)	
v.	)	FIFRA Comp. Docket No. 27
	)	
Thompson-Hayward Chemical Co.,	)	
	)	
Respondent	)	

Appearances:

Stephen W. Jacobson, William Ray Price, Jr.; Lathrop, Koontz, Righter, Clagett & Norquist; Kansas City, Missouri; for Claimant, Union Carbide Agricultural Products, Company, Inc.

Monti L. Belot, Edmund S. Gross; Weeks, Thomas and Lysaught, Chartered; for Respondent, Thompson-Hayward Chemical Company.

INITIAL DECISION

This is a proceeding under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"), Section 3(c)(1)(D), to determine what compensation Thompson-Hayward Chemical Company should pay to Union Carbide Agricultural Products Company, Inc., because data produced by Union Carbide Agricultural Products Company, Inc. (then known as Amchem Products, Inc.), was used by Thompson-Hayward to register the product KLEAN-UP 2,4-DB

AMINE (EPA Reg. No. 148-1138).[1/] Thompson-Hayward was granted its registration on May 7, 1975, relying on data generated and submitted by Amchem Products to obtain the registration of BUTYRAC 175 (EPA Reg. No. 264-164).

The authority for conducting these proceedings is the notice of the Acting Administrator of the United States Environmental Protection Agency, dated October 13, 1976, 41 Fed. Reg. 46020 (Oct. 19, 1976).[2/]

After lengthy prehearing proceedings, a hearing was held in Washington, D. C. on October 28 and 29, 1981, and January 12 and 13, 1982.[3/]

The decision rendered herein is based upon consideration of the entire record. In the findings of fact and opinion which follow, the

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1/ Compensation is governed by the original version of Section 3(c)(1)(D), enacted as part of the Federal Environmental Pesticide Control Act of 1972, Pub. L. 92-516, 86 Stat. 979-980 (1972). The current version of Section 3(c)(1)(D), as amended, is at 7 U.S.C. 136a (c)(1)(D) (Supp. IV 1980). References to Section 3(c)(1)(D) will be to the original version, a copy of which is attached to the decision as Appendix A.

2/ Pursuant to the procedures in the Acting Administrator's Notice of October 13, 1976, the Director of the Agency's Registration Division forwarded the file to the Chief Administrative Law Judge on October 21, 1976. The claim was assigned FIFRA Comp. Docket No. 27, and I was designated by the Chief Administrative Law Judge to preside. Also pursuant to those procedures, rules of procedure governing these proceedings were issued on January 7, 1977.

This claim was consolidated with Union Carbide's claim against Thompson-Hayward for compensation for use of Union Carbide's data to register the pesticide MCPA ACID (EPA Reg. No. 148-1236), FIFRA Comp Docket No. 45. That claim was dismissed with prejudice on stipulation of the parties by order dated April 30, 1981.

3/ At the request of Union Carbide Chemical Products Company, these proceedings were stayed from September, 1977 until February, 1980. See Order Granting Stay of Proceedings issued September 30, 1977, Motion for Stay of Proceedings filed January 10, 1978, and Withdrawal of Motion for Stay filed February 4, 1980.

"background" facts deemed pertinent to the parties' respective positions on the issues are set forth in the findings of fact. The opinion contains additional findings of fact on disputed issues, and also conclusions of law and the determination of reasonable compensation. Findings proposed by the parties which are inconsistent with this decision are rejected.

Findings of Fact

A. The Parties

1. Union Carbide Agricultural Products Company, Inc., (hereafter "Union Carbide") is a Pennsylvania Corporation. It is the successor of Amchem Products, Inc. (hereafter "Amchem"), and is engaged in the development, manufacture and sale of agricultural chemicals. Tr. 217.[4/]

2. Amchem, since before 1950 and until April 1, 1979, was a company engaged in the development and sale of agricultural chemicals with its headquarters in Ambler, Pennsylvania. UC Ex. 41, pp. 1-3.[5/]

4/ The record is cited as follows: References to the transcript of testimony are prefixed by the abbreviation "Tr." References to Union Carbide's Exhibits are identified as "UC Ex.---," and references to Thompson-Hayward's exhibits are identified as "T-H Ex.---." Pursuant to prehearing order, direct testimony was submitted in written form and included as exhibits. The following exhibits have been put into evidence in camera: UC Exs. 21-23, 27-28, 35-38; T-H Exs. 7-25.

5/ In addition to the development and sale of agricultural chemicals which were handled through its Agricultural Chemical Division, Amchem also had a metalworking division and a Benjamin Foster division. Tr. 16. Union Carbide acquired the business of the Agricultural Chemical Division and the other divisions were sold. Tr. 216-218.

3. Thompson-Hayward Chemical Company, (hereafter "Thompson-Hayward") was in 1975 and is now a company engaged in the development, manufacture and sale of agricultural chemicals. It was approximately of the same size by dollar volume of sales as Amchem in 1975. Tr. 425.

B. Amchem's 2,4-DB Registrations

4. 2,4-DB (4-2,4 Dichlorophenoxyl butyric acid) is a selective post-emergence herbicide effective for control of broadleaf weeds in soybeans, legumes, alfalfa, and peanuts. Union Carbide's proposed finding No. 6.

5. Since the enactment of the original FIFRA in 1947, it has been necessary to federally register a pesticide in order to commercially market it in the United States.[6/] In order to obtain a registration, the applicant has to submit data showing that the product and its labeling comply with the Act. In addition, since 1954, a pesticide applied to a food or feed crop cannot be registered until a tolerance setting the maximum amount of the pesticide that can be on the article of food or feed has been established.[7/] Initially, registration under FIFRA was administered by the United States Department of Agriculture, and tolerances were established by the then Secretary of Health, Education and Welfare. With the creation of the EPA in December, 1970,

6/ See Act of June 25, 1947, Ch. 125, 61 Stat 163. Intrastate sales were excluded from registration prior to 1972. See amendment added by the Federal Environmental Pesticide Control Act of 1972, Pub. L. 92-516, 86 Stat 973.

7/ See Federal Food, Drug, and Cosmetic Act, 21 U.S.C. 346a.

these functions were transferred to that Agency. Reorg. Plan No. 3, 84 Stat 2085.

6. In 1967 or 1968 Amchem obtained a registration to use its 2,4-DB product, BUTYRAC 175, on soybeans.[8/] BUTYRAC 175 is a formulation which contains 1.75 pounds per gallon active ingredient. At about the same time, Amchem, in cooperation with Rhodia, Inc. (now Rhone-Poulenc), also began work to develop data which would support a registration for the use of 2,4-DB on peanuts.[9/] UC Ex. 41, p. 4; Tr. 600-01.

7. Amchem submitted an application for an amendment to its BUTYRAC 175 registration to add a peanut use in November, 1970. This application was denied because of an insufficient amount of efficacy data submitted. UC Exs. 46, 47; Tr. 597.

8. Amchem continued to develop efficacy data regarding the use of 2,4-DB on peanuts and in April, 1973, resubmitted its application for an amended registration of BUTYRAC 175 adding a peanut use. UC Exs. 35, 47; Tr. 597.

9. Amchem obtained its amended registration adding a peanut use to its registration of 2,4-DB in June of 1973. Union Carbide's proposed Finding No. 10.

10. In 1974, BUTYRAC 200 was registered by EPA and included all uses previously registered for BUTYRAC 175. No additional data for a peanut use was submitted with regard to BUTYRAC 200. The rate of

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8/ At the time it obtained its BUTYRAC 175 registration, Amchem already had a registration on its product, BUTYRAC 118, which contained two pounds per gallon active ingredient. Tr. 602; UC Ex. 48.

9/ Amchem undertook development of the primary efficacy data and Rhone-Poulenc undertook the residue work necessary to obtain a tolerance for use of 2,4-DB on peanuts. UC Ex. 41, p. 4; Tr. 604-05.

active ingredient, crops, timing and all other methods of application remained the same. UC Ex. 48; Tr. 599.

C. Thompson-Hayward's 2,4-DB Registration and EPA Registration and Compensation Requirements.

11. Applications for registration in 1975 had to comply with the EPA's procedure then in effect for carrying out the provisions of Section 3(c)(1)(D). These procedures were set out in an "Interim Policy Statement" dated November 14, 1973, 38 Fed. Reg. 31862 (Nov. 19, 1973), and required that all applications for registration contain the following:

1. An express written offer to pay reasonable compensation "to the extent provided under Section 3(c)(1)(D)" for use of any test data submitted to EPA in connection with an application for registration for the first time on or after October 21, 1972.[10/]

2. Any one of the following:

   (a) All required supporting data;

   (b) Specific references to all required data to be considered in support of the application;

   (c) A request that registration proceed on the basis of use patterns, efficacy and safety previously established under FIFRA (which meant that registrations had been previously approved for a similar product and for similar labeling).

10/ The EPA originally construed Section 3(c)(1)(D) as applying only to test data submitted on or after October 21, 1972, the date of the enactment of the Federal Environmental Pest Control Act of 1972. That construction is no longer being followed by the EPA. See Ciba-Geigy v. Farmland Industries, Inc., FIFRA COMP Docket Nos. 33, 34 and 41, Initial Decision at 47-48 (1980).

The requirements in Paragraph 2 were commonly referred to as the "2(a)", "2(b)", or "2(c)" methods of support. Interim Policy Statement, 38 Fed. Reg. at 31863.

12. If an applicant followed the 2(c) procedures (sometimes referred to as a "me-too" applicant), his application was published by the EPA in the Federal Register. Any person who had submitted data to the EPA to support an application for registration and believed that the data was now being relied on in the 2(c) application was required to file a claim for compensation for that data within 60 days following the Federal Register publication, if he wished to preserve his rights to compensation under Section 3(c)(1)(D). If a claim for compensation was filed, the applicant under 2(c) could not obtain a registration until he either made a revised application under 2(a) or 2(b) above (i.e., provided supporting data or specific references to supporting data), or acknowledged in writing that his application relied on the data identified by the claimant and requested the EPA to consider that data in support of the application. Interim Policy Statement, 38 Fed. Reg. at 31863.

13. On January 23, 1975, the EPA published its notice of receipt of an application by Thompson-Hayward under the 2(c) procedures for registration of KLEAN-UP 2,4-DB AMINE, a formulation which like BUTYRAC 175, contained 1.75 pounds per gallon active ingredient. In connection with its application Thompson-Hayward submitted an offer to pay compensation in the form required by EPA for a registration obtained pursuant to the "2(c)" method. Amchem filed

its claim for reasonable compensation from Thompson-Hayward in a timely manner on March 10, 1975, claiming compensation specifically for efficacy data on peanuts submitted on April 19, 1973, and two eight-day ("acute") toxicity studies, a dietary LC50 study on mallard ducks and a dietary LC50 study on bobwhite quail. UC Ex. 17. On April 8, 1975, Thompson-Hayward specifically acknowledged reliance upon such Amchem data and requested EPA to refer to the same in granting its registration. UC Exs. 15-17.

14. EPA notified both Thompson-Hayward and Amchem that it would process Thompson-Hayward's application by relying on data submitted by Amchem. On May 7, 1975, Thompson-Hayward obtained its registration for the use of KLEAN-UP 2,4-DB AMINE on peanuts. UC Exs. 15, 19.

15. The EPA, in general, in 1975, required the following kinds of data in support of a pesticide product used on food and feed crops:

    (1) Product chemistry.

    (2) Acute, subacute, and chronic toxicity studies on two mammals.

    (3) Acute fish and wildlife toxicity studies.

    (4) Efficacy data for each geographical area of use.

    (5) Environmental fate data, including metabolism in soil, water, plants and animals.

    (6) Crop residue data with analytical methods.

    T-H Ex. 1, p. 8.

16. The data for which Union Carbide claimed compensation and upon which Thompson-Hayward admittedly relied to obtain its registration consists of a volume of efficacy data submitted in April or May, 1973 and the two eight-day ("acute") wildlife toxicity studies submitted in 1974, one on the bobwhite quail, and the other on mallard ducks. UC Exs. 17, 34, 35, 36, 37.

Opinion

Union Carbide in this proceeding claims compensation from Thompson-Hayward in the amount of $1,317,500 for Thompson-Hayward's use of Union Carbide's data in registering the pesticide KLEAN-UP 2,4-DB AMINE. Thompson-Hayward disputes this amount and contends that the reasonable compensation for which it should be liable under Section 3(c)(1)(D) is $5,873. Both parties agree with the general proposition stated in Ciba-Geigy v. Farmland,[11/] the only previous case to have considered what constitutes "reasonable compensation" under Section 3(c)(1)(D), that an equitable way of determining compensation is by some cost-sharing method. The wide difference between the parties stems primarily from their disagreement over what costs are to be shared and in what proportion. Union Carbide contends that the cost for determining reasonable compensation should include all research and development costs said to be associated with developing a use of 2,4-DB on peanuts, which cost is to be divided equally between the parties. Thompson-Hayward, on the other hand, asserts that the cost should be limited to cost of producing the specific test

11/ Ciba-Geigy Corporation v. Farmland Industries, Inc., FIFRA COMP Docket Nos. 33, 34 and 41 (Initial Decision issued August 19, 1980; Order Denying Motion for Reconsideration issued September 26, 1980; and Final Order adopting with modification the Initial Decision issued April 30, 1981).

data which was relied upon, and that these costs should be apportioned between the parties according to their respective market shares, as was done in Ciba-Geigy v. Farmland.

Another area of dispute between the parties which accounts for their difference over the amount of compensation is what allowance should be made for inflation in determining the amount of payment. Union Carbide argues that historic costs should be adjusted to reproduction cost in 1980. Thompson-Hayward contends that if costs are to be adjusted for inflation, they should be equated to costs in 1975, when Thompson-Hayward's registration was granted, similar to what was done in Ciba-Geigy v. Farmland. The difference between 1975 and 1980 costs could add considerably to the amount of compensation to be paid. For example, Union Carbide computes reproduction costs of the data in 1980 as having increased by $554,000 (or 61%) over 1975 costs.[12/]

In this opinion, Part A will deal with the question of the cost to be shared, Part B with how that cost is to be shared, Part C with the adjustments to historical cost in determining the amount of compensation, and Part D with the amount determined as reasonable compensation.[13/]

12/ UC Ex. 33 (as recalculated in its proposed findings).

13/ References to Union Carbide should be understood as meaning Amchem Products, Inc. with respect to matters occuring prior to April 1, 1979.

A. The Cost To Be Shared

Union Carbide assigns a historical cost to its test data of $689,000, which it computes as follows:

(a) "Direct Costs" of $310,000, which includes the following categories:

(1) Program preparation, review, correspondence, field evaluation, data summary and evaluation, data filing and retrieved by Amchem's research and development staff at headquarters.

(2) Time spent in regional and national planning meetings for research and development in considering the research and development for peanut use of Butyrac.

(3) Costs associated with the development of the Butyrac formulations for use on peanuts.

(4) Costs associated with efficacy tests on peanuts conducted on Amchem's Ambler (Pa.) farm.

(5) Costs associated with efficacy tests on peanuts conducted on Amchem's Greenville (Miss.) farm.

(6) Costs of research samples for tests conducted by university and agricultural extension cooperatives.

(7) Costs associated with field men in the territories where efficacy tests were being conducted.

(8) Costs for the two wildlife toxicity studies done by an independent laboratory.

(b) Research and development departmental overhead expenses allocable to development of the peanut use, amounting to $221,000.

(c) Corporate overhead expenses allocable to the development of the peanut use amount to $158,000.

Union Carbide also includes as a cost for which it should be compensated, a charge of $481,000 for research on noncommercialized products allocable to the effort spent on developing a peanut use.[14/]

14/ UC Exs. 1-13, 21-23. UC Ex. 33 as recalculated in its proposed findings.

This method of computation seeks compensation on the cost of Union Carbide's entire research and development effort spent in obtaining a peanut use registration, and not just on the cost of the particular data relied on by Thompson-Hayward.[15/] Determining compensation in this way was not really considered in Ciba-Geigy v. Farmland and consequently, we must turn to the Act itself and such assistance in interpreting it as can be obtained from the legislative history.

1. Section 3(c)(1)(D) and Its Legislative History

FIFRA does not expressly define the term "reasonable compensation" as used in Section 3(c)(1)(D). A key to an understanding of what is meant, however, is to be found in the fact that Section 3(c)(1)(D) excluded from its mandatory licensing provisions trade secrets and other confidential business data which were protected from disclosure by FIFRA Section 10(b).[16/]

15/ See Dr. McLane's description of the Butyrac research program on peanuts, 1967 -- 1974, UC Ex. 41, pp. 8-22. Dr. McLane's description of the Butyrac research for 1967-1974, is not specifically linked to the cost summaries, but it does appear that the cost summaries were intended to cover the entire effort as described by Dr. McLane. See Tr. 59.

16/ FIFRA Section 10(b), as then in effect, (Pub. L. 92-516, 86 Stat 989 (1972)) provided in pertinent part that "The Administrator shall not make public information which in his judgment contains or relates to trade secrets or commercial or financial information obtained from a person and privileged or confidential. . . ." An exception was provided for the disclosure of formulae to Federal agencies or in public hearings or in findings of fact of the Administrator. The current version of Section 10(b) is at 7 U.S.C. 136 h(b) (Supp IV 1980).

That exclusion is not applicable here since Union Carbide is not claiming for compensation purposes that its test data is protected by Section 10(b) as data containing trade secrets or privileged commercial or financial information.[17/] It is important to note, nevertheless, that Section 3(c)(1)(D) in no way affects the right of a pesticide producer to license for whatever compensation it deems desirable, data obtained through its research and development efforts which would be protected from disclosure as a trade secret. As the Supreme Court observed in Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 476 (1976), such data is most likely to represent an innovative contribution to the development of a product or process. This exclusion for trade secret data takes on added significance in interpreting Section 3(c)(1)(D) when the legislative history is examined.[18/]

The legislative history of Section 3(c)(1)(D) begins with a proposal by the National Agricultural Chemicals Association ("NACA"), while Congress was considering amendments to the 1947 FIFRA, that FIFRA be amended to provide that data submitted in support of an application

17/ See Report of Prehearing Conference held on February 3, 1981. The data, however, has been treated as confidential and made subject to a protective order prohibiting its public disclosure.

18/ The legislative history set forth here incorporates with some minor modification the discussion of the legislative history in Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 20-25.

could not, without the permission of the applicant, be considered by the EPA in support of any other application for registration.[19] This proposal, known as "the exclusive use of data," was in H.R. 10729, the bill amending FIFRA, as it was first passed by the House.[20] That provision was also in H.R. 10729 as it was first reported out by the Senate Committee on Agriculture and Forestry.[21]

In the Senate, the exclusive use of data encountered strong opposition from the Senate Committee on Commerce, which also considered H.R. 10729, and proposed several amendments to it. One of these amendments was to delete the exclusive use of data, because the Commerce Committee feared that it would create barriers to entry in the pesticides industry, since competition may not be able to afford the sometimes costly safety and efficacy tests, and that it would also result in the diversion of funds into unnecessary duplicative testing.[22] The Committee on Agriculture

19/ Hearings on H.R. 26 and 4152 (and other bills) Before the House Comm. on Agriculture, 92d Cong., 1st Sess. 331 (1971).

20/ While there was some objection to the measure in the House, it survived untouched with apparently little need for any defense by its supporters. See H.R. Rep. No. 92-511, 92d Cong., 1st Sess. 69-75; 117 Cong. Rec. 40061 (1971).

21/ See S. Rep. No. 92-838, 92d Cong., 2d Sess. 19. The Senate version further provided that tests submitted by one applicant could be used by the EPA without the permission of the applicant to determine the adequacy of another's data. Id.

22/ S. Rep. No. 92-970, 92d Cong., 2d Sess. 12-19 (1972).

and Forestry issued a supplemental report in answer to these and other objections raised by the Commerce Committee to H.R. 10729. In the report, it was stated that the purpose of the exclusive use of data was "to give manufacturers an incentive to undertake the research necessary to develop better and safer pesticides." The report went on to explain that without the exclusive use of data, there would be no incentive to undertake the costs of testing products which were not patentable or on which the patent had expired, since there was nothing to prevent a competitor from registering a similar product.[23/] The report further stated that the Committee on Agriculture and Forestry did not believe that there would be any great diversion of funds to duplicate testing, but rather that the exclusive use of data was likely to result in equitable sharing of research costs, as it would be more reasonable for the parties to share in the costs than for each to undertake to do its own testing.[24/]

23/ S. Rep. No. 92-838 (Part II, Supp. Rept.), 92d Cong., 2d Sess., 11-12 (1977).

24/ S. Rep. No. 92-838 (Part II, Supp. Rept.) supra note 22, at 12. The Committee included in its report NACA's arguments about the need to have the exclusive use of data in order to foster research and development. NACA also referred to the fact that the EPA "as a matter of practice" has considered data submitted by one applicant to support the registration of the same or similar product by another applicant. NACA objected to this practice as without statutory authority and expressed concern that the new policy of H.R. 10729 requiring publication of data (except trade secrets) would substantially aggravate this situation. Id. at 18. NACA disavowed any intention to use the exclusive use of data as a means of extending either directly or indirectly the protection received by a registrant under a patent. Id. at 15.

A compromise amendment to Section 3(c)(1)(D) was finally agreed to in the Senate, which in pertinent part, read as follows:

> [D]ata submitted in support of an application shall not, without permission of the applicant, be considered by the Administrator in support of any other application for registration unless such other applicant shall have first offered to pay a reasonable share of the cost of providing the test data to be relied upon and such data is not protected from disclosure by section 10(c). If the parties cannot agree on the amount and method of payment, the Administrator shall make such determination and may fix such other terms and conditions as may be reasonable under the circumstances. . . . (emphasis added) 25/

The following statement of "legislative intent" accompanied this compromise substitute:

> The change back to section 3(c)(1)(D) as reported by the Agriculture Committee with additions has essentially 2 purposes:
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> (1) To authorize the Administrator to require a description of all relevant tests and their results, and
>
> (2) To prevent unnecessary repetitive testing by subsequent applicants.
>
> Thus, all data either voluntarily submitted hereunder or required to be submitted by the Administrator may be used by the Administrator in making determinations of the adequacy of the test data submitted in connection with other applications. As concerns use of such data in support of another application without permission of the originator of the test data, however, it is recognized that in certain circumstances it might be unfair or inequitable for government regulation to require a substantial testing expense to be borne by the first applicant, with subsequent applicants thereby gaining a free ride. On the other hand, unnecessary duplicative testing would represent a wasteful, time-consuming, and costly process resulting in a substantial misallocation of resources. Thus it was decided that fairness and equity require a sharing of the governmentally required cost of producing the test data used in support of an

25/ H.R. 10729, as amended by the Senate, on September 26, 1972 at 78-79; see also 118 Cong. Rec. 32257 (1972); S. Rep. No. 92-838 (Part II) supra n. 22, at 69-73.

> application by an applicant other than the originator of such data. If no agreement can be reached, the Administrator is vested with authority to determine the reasonable share of the cost of the test data used, including subsequent reallocations upon requests for use of such data by additional applicants. 26/

H. R. 10729 was then sent to conference to have the differences between the House and Senate ironed out. The Conference Committee reported out H. R. 10729, with the wording of Section 3(c)(1)(D) changed from "reasonable share of the cost of producing the test data" to "reasonable compensation for producing the test data." A change was also made in the judicial review obtainable for the EPA determination of reasonable compensation. 27/

The only explanation for these changes was the following:

> . . .It [the Conference Bill] provides for mandatory licensing of test data. The conferees concluded that the Administrator is in the best position to determine the proper amount of reasonable compensation for producing the test data that should be accorded the originator of such data. It was consequently concluded that an appeal of such determination by the originator of such data to the District Court should not result in a lowering of the Administrator's determination. It was also concluded that the pendency of such proceeding before the Administrator or the Court should not stay or delay use of such data (section 3(c)(1)(D)). 28/

26/ 118 Cong. Rec. 32258 (1972); S. Rep. No. 92-838 (Part II) supra n. 23, at 72-73.

27/ H.R. 10729, as passed by the Senate, provided that the order of the Administrator determining compensation was to be reviewed in the court of appeals as a final order under the judicial review provisions. The conference changed this to provide that judicial review was to be by appeal to the federal district court and the amount of payment determined by the court could not be less than that determined by the Administrator. H.R. Rep. No. 92-1540, 92d Cong., 2d Sess. 9, 31 (1972).

28/ H.R. Rep. No. 92-1540, supra n. 27, at 31.

A further explanation of the Conference substitute was given by Senator Miller, one of the Senate Conferees, during the debate on the conference report:

> One of the most difficult areas to be negotiated here had to do with test data use in submitting an application for a certificate. I believe the protection afforded the owner of test data represents an adequate protection, and while I understand that some people who own test data do not wish to have it made available under any circumstances at all, this position would constitute a considerable cost to the Government, and a proper reimbursement approach seemed to be in order.
>
> What we have provided in this particular conference report has been a procedure whereby, through the use of the courts, the owner of the test data can, if he is not satisfied with the award made by the EPA, try to obtain additional amounts of money representing the just compensation due him, and in the meantime he will have the added protection of being able to receive the amount of the award made by the EPA.
>
> I think this is about the best protection that could be afforded to the owner of test data. 29/

Section 3(c)(1)(D) was subsequently enacted into law in the form recommended in the Conference Report.

Union Carbide argues that Section 3(c)(1)(D) was intended to reimburse the data originator not just for its effort in developing the specific data relied upon, but for its entire research and development effort. 30/ Compensation under Section 3(c)(1)(D), in short, is considered as in the nature of a reward for research and development. The legislative history, however, does not support such a construction of Section 3(c)(1)(D).

29/ 118 Cong. Rec. 33922 (1972).

30/ Union Carbide's brief at 7-10.

It is to be noted that the specific tests themselves do not appear to have involved any new or novel techniques, and Union Carbide does not claim that they did.[31/] The novelty or invention lay in discovering that 2,4-DB could be used to control weeds in peanuts. It is not within the scope of this decision to determine whether such use is patentable.[32/] If the use is not patentable, however, the legislative history seems clear enough that it was not the purpose of federal registration or the Section 3(c)(1)(D), which was enacted in 1972 because of the data requirements of federal registration to remedy that deficiency.[33/] The purpose of registration was to insure that the product was not injurious to man or the

31/ There appears to have been nothing secret or special about the design of the efficacy tests, or of the acute toxicity studies. The majority of the efficacy tests were done by university and agricultural extension researchers with Union Carbide supplying the 2,4-DB, and in some cases making a small monetary contribution. The two acute toxicity studies were performed by an independent research laboratory. T-H Ex. 1, pp. 11, 14-15 and App. A.; UC Ex. 35 (in camera).

32/ Cf, Dawson Chemical Co. v. Rohm & Haas Co., 448 U.S. 176 (1980), which involved a process patent for using propanil, an unpatented product, as an herbicide on rice. The Court held that the patent was infringed when persons not licensed by the patentees sold propanil for use as an herbicide, but assumed for the purpose of the case, without deciding the issue, that the patent was valid.

33/ But see the current version of Section 3(c)(1)(D), 7 U.S.C. 136a (c)(1)(D) (Supp IV 1980), which incorporates the amendments of the Federal Pesticide Act of 1978, Pub. L. 95-396, 92 Stat 820 (1978), and under which data to support the original registration of an active ingredient first registered after September 30, 1978, or an amendment to such registration adding a new use is afforded exclusive use for 10 years. The purpose of granting exclusive use in the case of an ingredient or use which was not patentable was explained by Senator Leahy, one of the Senate conferees on the 1978 amendment, as providing an appropriate substitute for the patent as a reward for the registrant's innovation in finding the new pesticide or new pesticidal use. See Senate Comm. on Agriculture, Nutrition and Forestry, 95th Cong. 2d Sess., Federal Pesticide Act of 1978, 3 (Comm. Print 1979). In 1972, however, Congress expressly rejected exclusive use for data like the efficacy and toxicology data involved here.

environment, that its composition was such as to warrant the claims made for it, and that it and its labelling complied with the requirements of the Act.[34/] The data was submitted as proof that the product met these standards. The efficacy data at issue here, for example, which comprises the bulk of the data, was submitted to support the label claims that BUTYRAC 175 controls and suppresses broadleaf weeds infesting peanut crops, and to show that it did this without damaging the peanut crop itself.[35/] Presumably, it is the kind of testing that a responsible producer would do before putting its product on the market, even if such testing were not required for registration under FIFRA.

In the normal marketing of goods, a producer who puts a successful product on the market can expect competition from others producing a similar product unless the competition is barred by a patent or by

34/ See FIFRA Section 3(c)(5, 7 U.S.C. 136a(c)(5).

35/ This is evident both from the nature of the data itself and from the correspondence relating to the 175 registration. See UC Ex. 35 UC Ex. 47. The label requirements are set out principally in FIFRA Section 2(q), 7 U.S.C. 136b(q) (relating to misbranding). Federal supervision over a pesticide producer's label claims was included in Section 4 of the original Federal Insecticide, Fungicide, and Rodenticide Act of June 25, 1947, Pub. L. No. 104, Sec. 4, 61 Stat 16 (1947). As to the need for such supervision, see H.R.313, 80th Cong. 1st Sess. (1947), reprinted in [1947] U.S. Code and Cong. Service 1200, 1202, where it is stated that by bringing to the attention of the enforcement officials the formula, label and claims made with respect to an economic poison (the term then used for a pesticide), "[i]t should be possible. . .in a great majority of instances, to prevent false and misleading claims, and to prevent worthless articles from being marketed. . . . Registration will also afford manufacturers an opportunity to eliminate many objectionable features from their labels prior to placing an economic poison on the market."

some secret process. FIFRA, of course, added another dimension to the marketing of pesticides, namely, the additional cost in getting a product to market that may be imposed by FIFRA's registration requirements. It seems clear from the legislative history that Congress felt as a matter of fairness, if for no other reason, that the first registrant should not be saddled with the entire burden of this additional cost. But it would appear that it was only with the incremental cost of obtaining a registration that Congress appears to have been concerned about, and the desirability of neutralizing any adverse effect on research and development which would be caused if the entire testing cost were imposed on the first registrant. Over and above this, the incentive for research and development, and a company's investment in it, would still have to come from the profits to be gained in the sale of the product and from whatever competitive advantage accrued to it from patents or secret processes.

As to subsequent registrants of the same product, the only reasonable construction to be placed on the fact that Congress opted for mandatory licensing in Section 3(c)(1)(D), is that Congress intended that subsequent registrants should be saved from costly testing requirements which are not needed to show that the product is registrable under FIFRA. Given the strongly expressed Congressional concern over the wastefulness of unnecessary duplicative testing, it seems clear that Congress assumed that mandatory licensing would result in lower costs to subsequent registrants than if they had to duplicate the tests.

Union Carbide stresses that the standard to be applied in this case in determining compensation must take into account that the peanut use was entirely the result of Union Carbide's efforts and that Thompson-Hayward contributed nothing to the development of the use.[36/] The implication, of course, is that the equities heavily favor Union Carbide, but this does not appear to be justified by the legislative history. Rather, the legislative history indicates that the purpose of Section 3(c)(1)(D) was to compensate the data originator for tests relied on by the subsequent registrant on a basis which was fair to both parties.[37/]

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36/ Union Carbide's brief at 7-10.

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One of the categories, toxicity studies, specifically lists a cost for the two wildlife studies of $1,500, the sum paid by Union Carbide in 1974 to have these studies done.[39/] The other categories, however, are not worded in terms of the cost of producing a specific test, but of the costs incurred over the year for various kinds of activities in connection with developing a peanut use registration, e.g. administrative costs for R&D staff for the years 1967-1974, covering program preparation, review, correspondence, field evaluation, data summary and evaluation, data filing and retrieval.[40/] The totals furnished are summaries compiled mainly from information supplied by employees with respect to their effort in developing the peanut use for Butyrac (Union Carbide's trade name for 2,4-DB), as shown in their weekly, monthly, and annual reports and other records they may have had.[41/] It would be blinking at reality not to recognize the possibility of overstating or padding costs furnished in this manner, as well as of there being errors in the computations themselves. Normally it could be expected that any such defects in the summary data could be exposed through cross-examination. In this case, however, Thompson-Hayward was severely circumscribed in its ability to cross-examine on the figures because the employee records from which the summary totals were obtained were apparently lost and could not be made available for cross-examina-

39/ See UC Ex. 13.

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tion.[42] Hence, in rebutting Union Carbide's cost estimates, Thompson-Hayward has had to rely largely on testimony by its expert witness, Dr. Zick, as to what are reasonable costs for producing the data involved in this proceeding.[43] Union Carbide criticizes such testimony on grounds that Dr. Zick has no knowledge of Union Carbide's actual costs, and asserts that compensation should be governed by a data-producer's actual costs. I agree with Union Carbide's argument when the costs can be verified by the company's books and records from which they were derived. When they cannot, however, simply accepting at face value a summary statement of costs would be placing too much discretion in Union Carbide on how to determine its costs for the purpose of setting prices for use of its data. The situation, indeed, would differ little, if at all, from that which would exist if Union Carbide had the exclusive right to license the data, notwithstanding that Congress expressly refused to give such right to this kind of data. Consequently, where the costs are not adequately supported by the company's records, it is both fair and proper to turn to expert testimony

42/ See Tr. 49-51. It does not appear that Mr. Fertig's R&D budget, which he also used in preparing the summary sheets, was made available either. See Tr. 51.

43/ Dr. Zick is found to be qualified as an expert on matters relating to the testing of pesticides and the costs of conducting such tests. He was engaged in the research and development of pesticides and the testing of pesticides for Velsicol Chemical Corporation during the period 1960-1967, and for PPG Industries, Inc. during the period 1968-1978. Since that time he has been self-employed, providing consulting services in developing, organizing, submitting and defending data required to register pesticidal and food additive products with the EPA and Food and Drug Administration. T-H Ex. 1.

on testing costs as a means for determining how "reasonable" the claimed costs are.[44/]

So far as assigning costs to specific items of data, there is no dispute about the costs assigned to the two toxicity studies of $1,500. The same is not true, however, with respect to the efficacy data. This data consists of 50 field trials conducted by state university and United States Department of Agriculture researchers under some form of cooperative arrangement with Union Carbide, 19 demonstration field trials conducted by Union Carbide in cooperation with farmers and commercial applicators, 7 small-plot field trials done on Union Carbide's research farms in Ambler, Pennsylvania or in Greenville, Mississippi, 2 small greenhouse trials on Union Carbide's facilities, and an abstract of a published report by Monsanto Research and Development personnel.[45/] The costs for these tests are buried within Union Carbide's cost summaries. Hence, it is necessary to examine further these cost summaries and the explanation given for them to determine what portion should be used to determine reasonable compensation for use of that data.

44/ Placing the burden on Union Carbide of demonstrating that its costs are a reasonably accurate statement of its actual costs is consistent with the rules of practice which have been issued in this proceeding. See Section 17. It is also consistent with the general rule placing the burden of proof on those naturally possessed of pertinent evidence, here the company records which substantiate the costs. See the Commonwealth of Puerto Rico v. Federal Maritime Comm., 468 F. 2d 872, 881 (D. C. Cir. 1972).

45/ UC Ex. 35; Dr. Zick's analysis of this data (T-H Ex. 1, p. 11) is not really disputed by union Carbide.

Dr. Fertig said the cost represented by his summaries "relates to the effort in the development of the peanut registration for Butyrac" during the years 1967 to 1974[46/] Included, however, is the cost of work which it would not be fair to charge Thompson-Hayward with simply because it relied on some of the test data produced in the course of that effort to register its own 175 formulation.

It seems clear, for example, that the costs include work done on the BUTYRAC 200 registration, a registration which Thompson-Hayward does not have.[47/] Union Carbide initiated a program for introducing BUTYRAC 200 as a replacement for Union Carbide's BUTYRAC 175 and 118 formulations in 1971.[48/] A testing objective from then on, if not the principal objective, was to compare the performance of BUTYRAC 200 with BUTYRAC 175.[49/] In the early or middle part of 1973, presumably as a result of its study, Union Carbide decided to market the BUTYRAC 200 label, and to drop both the BUTYRAC 118 and 175 labels as soon as the inventories ran out.[50/] Union Carbide attempts to dismiss the work done on the BUTYRAC 200 formulation on the grounds that the same efficacy data used to register BUTYRAC 175 also supported the BUTYRAC

46/ Tr. 52; See also UC Ex. 40, p. 4.

47/ Id., Tr. 64, 103, 152-156; UC Ex. 41, pp. 13-19.

48/ UC Ex. 41, p. 13. BUTYRAC 200 contains 2.0 pounds per gallon of active ingredient in contrast to the 1.75 pounds of active ingredient in BUTYRAC 175. The 200 label incorporated both uses of Union Carbide's 118 formulation (also containing 2.0 pounds of active ingredient) and the 175 formulation. Tr. 598-99.

49/ Tr. 155- 57.

50/ Tr. 606-07.

200 registration.[51/] While Union Carbide could use the same test data to register the 200 formulation, it is highly unlikely that Thompson-Hayward could do so without paying Union Carbide additional compensation, and Union Carbide does not suggest otherwise. Consequently, compensation for effort spent in planning, reviewing and evaluating data for the purpose of determining whether to obtain a BUTYRAC 200 registration, to the extent that such effort is compensable at all, should be the subject of a proceeding in which the registration of a 200 formulation is involved, and not of this proceeding. The absence of records makes it impossible to determine with any reasonable degree of certainty what part of Union Carbide's planning, evaluation and review efforts should be charged to the 200 registration rather than to the 175 registration. It cannot be dismissed as a minor part, however, in view of the evidence showing that replacing the 175 formulation with the 200 formulation became a definite objective in 1971, and resulted in the decision in 1973 to drop the 175 formulation in favor of the 200 formulation.[52/]

Another example of a cost claimed by Union Carbide which should not be charged to Thompson-Hayward is the cost for research and development work

51/ Union Carbide's brief at 5. See also Tr. 608.

52/ The reasons for obtaining the 200 registration appeared to be that the 200 registration offered a means of consolidating on one label all 2,4-DB uses, and of producing a formulation that was a "more economical product to be competitive in the marketplace." Tr. 90 139-40. It is difficult to see how such reasons would justify charging work done to obtain the 200 registration to the 175 registration.

in 1974 in the amount of $126,658, notwithstanding that all the efficacy tests submitted to the EPA to support the BUTYRAC 175 registration had been completed prior to 1973.[53/] In this instance, Union Carbide attempts to link the effort made in 1974 with the BUTYRAC 175 registration as work done after the registration which disclosed whether the label claims were correct and all necessary information had been provided the user. It is the actual field experience and monitoring of the experience in actual use, Union Carbide says, which creates the "established use pattern" on which Thompson-Hayward relied.[54/] Union Carbide's reference to the "established use pattern" is presumably to the 2(c) method of application in the EPA's interim policy procedures, which required applicants under 2(c) to state that they were requesting registration of their product to proceed "on the basis of use patterns, efficacy and safety previously established under FIFRA."[55/] As used therein, the language obviously refers to "use patterns" approved by the EPA in registrations granted on the basis of data filed with the EPA. In the offer to pay for use of the data, which Thompson-Hayward filed pursuant to the interim policy procedure, the language was shortened to "previously established use patterns, efficacy, and safety."[56/] It

53/ The two wildlife toxicity studies were submitted in April, 1974, but it seems clear from Union Carbide's arguments seeking to justify compensation for the work done in 1974, that the cost covered a great deal more than any work done with respect to the toxicity data. See Union Carbide's trial brief at 24-25.

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would also seem obvious that the reference was to the use patterns on the approved Union Carbide 175 label, which approval had been granted on the basis of test data filed to support that registration.[57/]

It may be that tests done after registration confirmed in Union Carbide's judgment the correctness of the registered label, but allowing compensation on such grounds would represent a very strained construction of Section 3(c)(1)(D). That section provides for compensation of test data "submitted in support of an application. . . [and] considered by the Administrator in support of any other application." Test data not in the EPA's files at the time it processed Thompson-Hayward's application cannot be said to have been considered by the EPA in reviewing that application.[58/] There has been no showing by Union Carbide that any

57/ Union Carbide states that the "me-too" applicant obtains the benefit of the most recent label. Trial brief at 25. So far as appears from this record, the most recent Union Carbide 175 label on which Thompson-Hayward relied was the one issued in June, 1973. Compare UC Ex. 15 with UC Ex. 14.

58/ The EPA did not actually review Union Carbide's test data in granting Thompson-Hayward's registration, but only satisfied itself that the Thompson-Hayward formulation was similar to the previously approved Union Carbide 175 formulation. See Dr. Zick's statement, T-H Ex. 1, pp. 9-10. Dr. Zick's testimony is consistent with the registration procedures in effect at the time as found in Ciba-Geigy Corp. v. Farmland, supra n. 11, Initial Decision at 16-17. Union Carbide does not really disagree with Dr. Zick's testimony, but simply argues that it is not relevant. See reply brief at 3. In any event, I may take official notice of this procedure of the EPA as described in Ciba-Geigy v. Farmland, since Union Carbide has, in effect, asked me to take official notice of other EPA registration procedures described there. See Proposed Findings of Fact 15-18. Contrary to what Union Carbide contends, the procedure is relevant in determining what data should be subject to compensation as data considered by the Administrator in passing upon Thompson-Hayward's application, and, hence, relied upon by Thompson-Hayward.

data generated in 1974 with respect to the peanut use, except the two toxicity studies, had been submitted to the EPA, and was part of the EPA's data file at the time it considered Thompson-Hayward's "me-too" application.[59/]

A third cost which represents work Thompson-Hayward should not be charged with is the cost claimed for work done by Union Carbide's chemical process engineering laboratory in developing the BUTYRAC 175 formulation, in developing an assay method for determining the quantity of active ingredient in the formulation, and in program planning and development work with regard to the 175 formulation for the years 1967-1974.[60/] Such costs are said to total $66,500.

It seems clear that what is meant by formulation is the addition of "inert ingredients" to the 2,4-DB.[61/] The inert ingredients are such ingredients as wetting agents or emulsifiers which are added to make the 2,4-DB perform consistently, but which have no pesticidal activity of their own.[62/]

59/ Even if efficacy data generated in 1974 was in the EPA's data file when Thompson-Hayward applied for its registration, the data would not be compensable, since it was not listed in Union Carbide's claim letter. The only Union Carbide data on which Thompson-Hayward can be said to have relied is the data listed by Union Carbide in its claim and acknowledged by Thompson-Hayward to be the data it relied upon. See Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 57-58. Union Carbide points out that it stated in its claim letter that its claim for compensation was not limited to the efficacy data and two wildlife toxicity studies which it specifically listed. It does not seriously press the point, however. See Union Carbide's reply brief at 4. Moreover, an unspecific reference to data was not in accord with the interim policy procedures which Union Carbide was purportedly following. See 39 Fed. Reg. 31863 (Nov. 19, 1973).

60/ UC Ex. 3; Tr. 81-86.

61/ Tr. 81-85; T-H 62, p. 4.

62/ Tr. 81-85, 518. See also definition of "inert ingredient" at 40 CFR 162.3(t).

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57/ Union Carbide states that the "me-too" applicant obtains the benefit of the most recent label. Trial brief at 25. So far as appears from this record, the most recent Union Carbide 175 label on which Thompson-Hayward relied was the one issued in June, 1973. Compare UC Ex. 15 with UC Ex. 14.

58/ The EPA did not actually review Union Carbide's test data in granting Thompson-Hayward's registration, but only satisfied itself that the Thompson-Hayward formulation was similar to the previously approved Union Carbide 175 formulation. See Dr. Zick's statement, T-H Ex. 1, pp. 9-10. Dr. Zick's testimony is consistent with the registration procedures in effect at the time as found in Ciba-Geigy Corp. v. Farmland, supra n. 11, Initial Decision at 16-17. Union Carbide does not really disagree with Dr. Zick's testimony, but simply argues that it is not relevant. See reply brief at 3. In any event, I may take official notice of this procedure of the EPA as described in Ciba-Geigy v. Farmland, since Union Carbide has, in effect, asked me to take official notice of other EPA registration procedures described there. See Proposed Findings of Fact 15-18. Contrary to what Union Carbide contends, the procedure is relevant in determining what data should be subject to compensation as data considered by the Administrator in passing upon Thompson-Hayward's application, and, hence, relied upon by Thompson-Hayward.

data generated in 1974 with respect to the peanut use, except the two toxicity studies, had been submitted to the EPA, and was part of the EPA's data file at the time it considered Thompson-Hayward's "me-too" application.[59/]

A third cost which represents work Thompson-Hayward should not be charged with is the cost claimed for work done by Union Carbide's chemical process engineering laboratory in developing the BUTYRAC 175 formulation, in developing an assay method for determining the quantity of active ingredient in the formulation, and in program planning and development work with regard to the 175 formulation for the years 1967-1974.[60/] Such costs are said to total $66,500.

It seems clear that what is meant by formulation is the addition of "inert ingredients" to the 2,4-DB.[61/] The inert ingredients are such ingredients as wetting agents or emulsifiers which are added to make the 2,4-DB perform consistently, but which have no pesticidal activity of their own.[62/]

59/ Even if efficacy data generated in 1974 was in the EPA's data file when Thompson-Hayward applied for its registration, the data would not be compensable, since it was not listed in Union Carbide's claim letter. The only Union Carbide data on which Thompson-Hayward can be said to have relied is the data listed by Union Carbide in its claim and acknowledged by Thompson-Hayward to be the data it relied upon. See Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 57-58. Union Carbide points out that it stated in its claim letter that its claim for compensation was not limited to the efficacy data and two wildlife toxicity studies which it specifically listed. It does not seriously press the point, however. See Union Carbide's reply brief at 4. Moreover, an unspecific reference to data was not in accord with the interim policy procedures which Union Carbide was purportedly following. See 39 Fed. Reg. 31863 (Nov. 19, 1973).

60/ UC Ex. 3; Tr. 81-86.

61/ Tr. 81-85; T-H 62, p. 4.

62/ Tr. 81-85, 518. See also definition of "inert ingredient" at 40 CFR 162.3(t).

There has been no showing that Thompson-Hayward, in lieu of submitting its own assay method and 175 formulation, relied instead on data submitted by Union Carbide to the EPA concerning Union Carbide's assay method and the chemical composition of the BUTYRAC 175 formulation. This in itself would be sufficient to disallow compensation for this effort except that it does appear that Thompson-Hayward's formulation had to be similar enough to Union Carbide's formulation to permit Thompson-Hayward to rely on Union Carbide's efficacy and toxicity test data.[63/] It would seem to follow, then, that the EPA either made some comparison of the Union Carbide and Thompson-Hayward formulations to determine that they were similar or that it constructively made such comparison by accepting Union Carbide's tests as supporting data for Thompson-Hayward's product.[64/] Section 3(c)(1)(D), however, requires the payment of compensation for "tests made and the results thereof. . .submitted in support of an application. . . [and] considered by the Administrator in support of another application."[65/] This language would not seem to require compensation for Union Carbide's formulation when it was considered by the EPA only for the purpose of determining whether the formulation submitted by Thompson-Hayward with its application was a similar product. Such a construction of Section 3(c)(1)(D)

63/ The record indicates that at least some of the efficacy tests had to be done with the formulation that was going to be commercially marketed. Tr. 124. Also, one of the acute toxicity tests was described as having been done with BUTYRAC 175. UC Ex. 36. There is nothing in the record, however, to indicate that the assay methods had to be similar in order for Thompson-Hayward to be able to rely on Union Carbide's test data, and no reason to assume that they need be, since assays were concerned only with analytical procedures.

64/ For the EPA's procedures in registering "me-too" registrations, see supra n. 58.

65/ See Appendix A.

would seem to be corroborated by the fact that Union Carbide, in its claim to the EPA for compensation, did not list any data with respect to either its formulation or its assay method as "[d]ata to which claimant wishes to assert a right of compensation."[66/] Indeed, to construe Section 3(c)(1)(D) as requiring a subsequent registrant to compensate the initial registrant for effort spent in developing a formulation, simply because the subsequent registrant produces a similar formulation would run contrary to the purpose of Section 3(c)(1)(D) of keeping down the expenses of registering similar products, since the result would be to increase Thompson-Hayward's formula development costs, whatever they may be, by adding to them a share of Union Carbide's costs.

It would also appear that Union Carbide has included in its formula development costs, costs associated with developing the BUTYRAC 200 formulation, and costs incurred in developing a process for manufacturing its 2,4-DB formulations.[67/] Costs for neither of these purposes would be properly chargeable to Thompson-Hayward. As already noted, Thompson-Hayward does not have a 200 registration. As to Union Carbide's development of a process for manufacturing 2,4-DB or the BUTYRAC 175 formulation, there is no showing that that process was made available to Thompson-Hayward or relied on by Thompson-Hayward in any way in registering its product.

66/ UC Ex. 17.

67/ See Tr. 519-20.

An examination of the other direct costs claimed by Union Carbide discloses that in many instances the costs are either overstated or again relate to work which should not be charged to Thompson-Hayward.

Thus, Union Carbide claims compensation for direct costs incurred in 1967 of $27,989.[68/] The only data included in the supporting test data relied on by Thompson-Hayward, however, is some preliminary efficacy testing on the use of 2,4-DB on peanuts done by USDA researchers in Georgia.[69/] Union Carbide's own effort in this testing seems minimal. It provided no grant-in-aid toward the program under which the test was run.[70/] It does appear that there was some work done by Union Carbide's field employee, Gallagher, in connection with the Georgia tests, but it is questionable whether the effort would have required the 100 hours for which Union

68/ These costs were broken down as follows: Administrative costs for an R&D staff of 5 amounting to $2,250 per year; cost of time devoted to peanut use of 2,4-DB at regional and national company meetings in the amount of $3,275 per year; costs of planning and development in connection with the 175 formulation amounting to $10,300; cost of work at Ambler research farm in the amount of $860 per year; cost of work at the Greenville research farm in the amount of $6,054 per year; costs of research samples for co-operators in the amount of $3,500 per year; cost of 3 R&D field employees at $1,250 per employee per year or a total annual cost of $3,750. UC Exs. 1-12, 20.

69/ UC Ex. 35, p. 41; Tr. 151, 311.

70/ T-H Ex. 1 (affidavit of Dr. Hauser).

Carbide has claimed compensation.[71/]

Union Carbide, through Dr. McLane, has furnished the following description of what is stated to be "the Butyrac Research Program on Peanuts" for 1967:

> In 1967 the main thrust of the development program involved exploratory studies to evaluate the weed killing potential of Butyrac and the tolerance for crops. The weed control information obtained by application in one crop would, of course, be applicable to weed control in another crop. For example, weed evaluations were made in alfalfa with Butyrac alone and in combinations. Butyrac was studied in combinations with Dalapon, Eptam and bromoxynil. Tests were established to evaluate the sequential treatment of Sindone followed by Butyrac as well as a tank mix of Sindone + Butyrac. Weed control observations were made in Oklahoma, Nebraska, West Virginia, Oregon and the Northeast.
>
> The results of the 1966 studies in Jay, Florida, on peanuts which indicated that the combination of dinitro and Butyrac gave reasonable good grass control and broadleaf control were evaluated.

71/ See testimony of Dr. Zick, Tr. 311-312. The 100 hours is based upon an annual work year of 2,000 hours which is what Union Carbide appears to have used in its calculation. Tr. 71. Union Carbide claims compensation for 5% of Gallagher's time in 1967. UC Ex. 17.

J. Gallagher of Amchem Products established trials in Georgia with the cooperation of Dr. Ellis Hauser to evaluate the use of Butyrac on peanuts. Hauser reported to Gallagher that Butyrac was fitting into the chemical program for peanuts with an application 5 weeks after planting. The sequence of chemicals with Butyrac increased crop yields about 30%. In another Hauser trial in 1967, the 0.2 lb/A application of Butyrac, applied 4 weeks or 8 weeks postemergence, showed no decrease in crop yield.[72/]

The report on its face is too general to allow for any reliable estimate of how much time and effort was really spent. "Evaluate" and "study" are imprecise, to say the least. They could, for example, mean actually determining the effect on weeds or the peanut crop at the test site, or simply studying the results reported by someone else. In testing done by USDA or state university researchers, Union Carbide would have had the benefit of the study and evaluation made by the persons who did the tests, and presumably are experienced in such matters.[73/] Dr. McLane gave no details about the cost of the work since that was not his assignment.[74/] Consequently, his statement adds little to Dr. Fertig's summaries in determining how reasonable are the costs stated in these summaries.

72/ UC Ex. 41, pp. 8-9. Bromoxynil and Sindone were other Union Carbide products. Tr. 39; UC Ex. 39.

73/ For example, the discussion in Dr. McLane's statement of the results of Dr. Hauser's tests in Georgia largely paraphrases Dr. Hauser's own evaluation of the tests. See UC Ex. 35, in camera.

74/ Tr. 147.

The only cost for 1967 which on its face was incurred in producing the data relied on by Thompson-Hayward appears to be Mr. Gallagher's effort, and the administrative cost and cost of research samples to cooperators which would be connected with this effort.[75] The cost claimed for Mr. Gallagher's time is $1,250, which is the equivalent of about 100 hours' work.[76] Allowing half of that cost or $625 would seem ample for the preliminary testing that was submitted. The cost of research samples in the amount of $3,500 is claimed and an administrative cost of $2,250 is claimed. The costs claimed, however, are not related to the amount of testing which produced the data that was submitted to the EPA.[77] They would appear, therefore, to be excessive with respect to this preliminary testing.

Dr. Zick in his estimates added to his estimated costs for field development men another 20% to represent the cost of supervising the research program, supplying chemicals and the like.[78] While Dr. Zick's expertise was primarily in the field of testing costs, he was in charge of pesticide research and development programs for two large corporations and had some knowledge of corporate budgeting for research and development work.[79] Using Dr. Zick's estimate of 20%, a cost of an additional $125 will be

75/ See Tr. 378-79.

76/ See supra n. 71.

77/ See UC Exs. 1, 6. The same costs were claimed for each year except that the administrative costs were increased to reflect increases in "dollar support." The percentage of total effort, however, remained the same. Dr. Fertig testified that furnishing samples can be costly if they are especially formulated. Tr. 104. The BUTYRAC 175 formulation, however, was registered for use on soybeans in 1967 or 1968. There is nothing in the test report or in the record to indicate that the test was run with a special formulation and not with the BUTYRAC 175 which Union Carbide was already presumably producing. Tr. 600.

78/ T-H Ex. 1, p. 23.

79/ T-H Ex. 1, pp. 2-4; Tr. 327-28.

allowed for administrative costs and samples in connection with this test.[80] The total cost allowed for 1967, accordingly, is $750.

As for the other costs claimed for 1967, the lack of information as to the specific work which was done and the absence of any reliable company financial records against which the reasonableness of the cost summaries could be measured, are sufficient in themselves to demonstrate the unfairness of using them as a basis for determining compensation.[81] There are, however, other reasons also for rejecting some of these costs.

Included in the testing costs for 1967, as well as in the other years, appear to be the costs of tests which were not used to support the BUTYRAC 175 registration for one reason or another.[82] It is argued that if there is to be an equitable sharing of costs, Thompson-Hayward should also share in the costs of testing for the peanut use, which produced no data used to support the registration. If the test was not used to support the registration,

80/ It is recognized that Dr. Zick's estimate is probably intended to cover all overhead costs. For the reasons noted below at 52, however, a corporate overhead cost is also allowed. Consequently, the 20% estimate used here would seem to make a liberal allowance for the administrative costs and cost of research samples claimed as "direct" costs.

81/ The costs for program planning and development work in connection with the BUTYRAC 175 formulation are rejected for the reasons stated above at 30-32. The cost of attendance at meetings is rejected for the reasons stated below at 41-42.

82/ Dr. McLane, for example, refers to tests of 2,4-DB run in combination with other chemicals or as part of a sequential treatment with other chemicals. Neither Union Carbide's, nor Thompson-Hayward's 175 labels contain any instructions for using 2,4-DB in combination with other chemicals. UC Exs. 14 and 15.

however, it could not be a test which under Section 3(c)(1)(D) was relied on by Thompson-Hayward.[83/] Further, even on the equitable grounds urged by Union Carbide for including such testing, the argument fails. First, it cannot be assumed that simply because a test was not used to support the BUTYRAC 175 registration, it was written-off as a loss. The studies made of Butyrac in combination with other chemicals in 1967, for example, while not used to register BUTYRAC 175, may still have provided useful information about the use of 2,4-DB in combination with other chemicals to achieve total weed control during the entire growing season.[84/] Such information was not available to Thompson-Hayward when it applied for its registration and presumably would not be available to it now as a result of any compensation awarded in this proceeding. It is difficult to see what equitable reasons there would be for charging Thompson-Hayward for the costs of tests which have provided useful data to Union Carbide, but from which Thompson-Hayward has received no benefit.

Secondly, arguably, some tests may have provided no useful information except, possibly, of a negative kind, e.g., the 2,4-DB was applied at too high a concentration so as to cause injury to the crop, or at too low a concentration to be effective in killing weeds, or was applied at stage of weed growth time when it was ineffective, or that it had no effect on a particular kind of weed. Union Carbide also posits the hypothetical situation of studies initiated at Greenville not being usable because of a hail storm destroying

83/ See supra at 29-30.

84/ 2,4-DB was a post-emergence herbicide, i.e., effective only for the control of weeds after they have emerged from the ground.

the weeds or peanuts.[85] But it cannot be told with any reasonable degree of certainty whether Union Carbide is referring to unsuccessful tests which it actually experienced or whether it is only postulating risks which could happen and is seeking a reward for its initiative in being willing to undergo such risks. If the former, we are left uninformed as to exactly how many tests produced only negative results or were spoiled by weather conditions. If the latter, Union Carbide has not by any credible evidence shown how serious that risk really is and whether the cost assigned reflects a reasonable evaluation of that risk. Consequently, the need for including an allowance for "unproductive" testing has not been demonstrated.

The only tests in 1968 in the data submitted to support the registration are also some preliminary trials conducted in Georgia and Oklahoma by USDA or state university researchers.[86] Again, Union Carbide's own effort in connection with these tests seems minimal, and, it does not appear to have provided any grants-in-aid toward the programs under which the tests were run.[87] Total costs of $28,189 are claimed.[88] For the same reasons noted with respect to 1967, one-half of the cost of $2,500 claimed for the field development men, plus 20% for administrative and sample costs seems reasonable.

85/ Brief at 18.

86/ UC Ex. 35, pp. 47, 96; Tr. 151, 311.

87/ T-H Ex. 1, p. 15, and Appendix A thereto.

88/ UC Ex. 20.

Consequently, a cost of $1,500 is allowed. The remaining costs are rejected for the same reasons as the other costs in 1967 were rejected.[89/]

The remaining efficacy tests included in the data submitted to the EPA except possibly for one greenhouse test, were done during the four year period 1969-1972. Costs totalling $152,038 are requested for this period.[90/] The great majority of the tests, it is to be noted, were again done by USDA and state university researchers, and a total of about $800 as grants-in-aid was contributed by Union Carbide.[91/]

There is no dispute about Union Carbide including a cost for its field development men, nor any real dispute about the percent of their total effort which should be used to calculate the cost.[92/] The parties do disagree over the amount which should be budgeted for these persons. The actual difference in the totals arrived at, however, is minimal, and Union Carbide's claim of a cost of $40,500 for its field development men will be allowed for these four years.[93/]

89/ See supra at 37-39. Although Union Carbide claims to have two field men working in Oklahoma, allowing costs for both men seems excessive for this preliminary testing.

90/ UC Exs. 20, 35 in camera.

91/ UC Ex. 35; T-H Ex. 1, p. 15.

92/ T-H Ex. 1, p. 22; UC Exs. 7, 8, 10 and 11. The field development men were Gallagher, Meadows, Mitchell and Jack Smith. Thompson-Hayward estimates that each man spent about 10% of his time in the development of BUTYRAC 175 peanut data, and this agrees generally with Union Carbide's estimates. Id.

93/ Union Carbide's estimated cost of $40,500 is based on its budgeting $30,000 a year in 1969 and 1970, and $35,000 a year in 1971 and 1972 for its field development men with only three field development men working in any one year. UC Exs. 7, 8, 10 and 11. Dr. Zick would have budgeted $25,000 per man for each of these years on the basis of four men per year, for a total cost of $40,000. T-H Ex. 1, pp. 22-23.

Another cost claimed by Union Carbide is the cost of meetings where time was devoted to the use of 2,4-DB on peanuts. A cost of $17,940 is claimed for these four years which represents time spent at 9 meetings per year. Three of these meetings were R&D review and planning meetings involving a staff of 12, three were national R&D review and planning meetings said to involve a staff of 60, and three were program and development review meetings involving a staff of 15. One hour was said to have been devoted at each meeting to the use of 2,4-DB on peanuts.94/

Dr. Zick's observation that the number of meetings claimed by Union Carbide appears excessive seems well taken for it meant that Union Carbide would have spent some 54 days per year at meetings.95/

There is another problem with this cost, however, which raises a question not only about its reliability, but about the reliability of Dr. Fertig's estimate in general. Dr. Fertig's estimate of costs for the national R&D review and planning meetings is based on the attendance of 65 persons for the years 1969-1974. With respect to 1974, there is financial data in the record from Amchem's records against which such costs can be compared. In that year, 55 to 60 of the persons attending would have

94/ Tr. 73-76. UC Ex. 2. Although the National R&D review and planning meetings were said to involve a staff of 60, the costs included a staff of 65 for the years 1969-1972. UC Ex. 2.

95/ See Tr. 516. Each of the three regional R&D review and planning meetings and the three program development and review meetings were stated to last 4 days, while the three National R&D review meetings were said to last 10 days each. UC Ex. 2.

been in Dr. Fertig's R&D Group.[96] The cost was an estimate of the "dollar support per scientific man" attending the meeting of $45,000 per year, which included salary, travel expenses and fringe benefits.[97] This resulted in a total cost of $2,925,000 of which 0.15%, or $4,388, would have been charged to the peanut use.[98] Of this total, between $2,475,000 and $2,700,000 would have been attributable to the 55 to 60 R&D personnel, and this would not have included the secretarial staff.[99] Figures supplied by Union Carbide, however, in calculating Amchem's research and development overhead which were assertedly taken from its books and records, show a total expense for the R&D Group, including all costs, which is considerably smaller than the total cost used by Dr. Fertig in his cost estimate.[100] The indication, of course, is that his cost estimate has been greatly overstated.

Accordingly, it is found that this particular cost is so unreliable as to be rejected in its entirety.

96/ Tr. 78. According to Dr. McLane, there would have been 62 individuals in the R&D Group. See Tr. 237.

97/ UC Ex. 2; Tr. 62.

98/ UC Ex. 2.

99/ Tr. 79.

100/ Tr. 234, 237; UC Ex. 22, Ex. 42, p. 4.

Union Carbide also claims a cost of $3,980 for testing done at its Ambler farm during 1969-1972, representing a cost of $860 for 1969, and $1040 a year for 1970-1972. It also claims a cost of $32,168 for testing done at its Greenville farm, representing a cost of $7,154 for 1969, $7,654 for 1970, and $8,680 a year for 1971 and 1972.[101/] The tests at Ambler consisted of a small preliminary trial in 1970, a "general screening trial" in 1971 and two weed size trials in 1972. No tests for 1969 were included in the data package.[102/] The testing was said to account for 2% of total yearly effort or 40 hours annually on the basis of 2,000 hours per year.[103/] The tests at Greenville consisted of two trials in 1969 and one in 1971.[104/] There were no tests at Greenville for 1968 or 1972 included in the data submitted to the EPA.[105/] The costs were based on the testing requiring 10% of total effort per year, or the equivalent of 200 hours, again based on a total of 2,000 hours per year.[106/]

Costs for tests not included in the data submitted to the EPA and, hence, not relied on by Thompson-Hayward, are excluded for the reasons already given. It also appears that the effort claimed for the tests is

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101/ UC Exs. 4 and 5. Dr. Zick classified these tests as small-plot trials. T-H Ex. 1, p. 17.

102/ UC Ex. 35; Tr. 521.

103/ UC Ex. 4.

104/ UC Ex. 35; Tr. 521.

105/ UC Ex. 5; 35.

106/ See supra n. 71.

excessive. Dr. Zick estimated that these small plot field tests could have been contracted out at a cost of $5,880.[107/] Dr. Zick also estimated that the time for doing a test of 40 plots, should take no more than two to three days from staking out of the plot and planting of the crop to the evaluation of the weed control accomplished by the treatment.[108/] When one examines the tests, there is nothing about them which would seem to disprove Dr. Zick's testimony and, of course, Union Carbide has furnished no cost records which would really rebut it.

The combined costs claimed by Union Carbide for all seven tests amounts to $18,954, or over three times the cost as computed by Dr. Zick. Increasing Dr. Zick's estimate by one-half, to make allowance for the fact that it does appear to be a rough estimate, results in a cost of about $8,800.

Finally, included as allowable costs will be the amount of $6,800 which Dr. Zick estimated it would have cost to run the ground applied farm and air-applied demonstration plots, $600 for the two greenhouse tests, and $800 for grants-in-aid to cooperators.[109/] These costs were not separately stated by Union Carbide.

107/ T-H Ex. 1, pp. 17-18. Dr. Zick noted that these seven in-house tests involved 49 treatments, and assumed that each treatment would be replicated four times, thus giving a total of 196 plots in the 7 trials. His estimate of the contract cost for having this testing done was $30 a plot.

108/ Tr. 524-25, 565. Evaluation could presumably also include an observation as to whether the treatment injured the peanut crop or affected the peanut yield.

109/ T-H Ex. 1, pp. 15-16, 19. Since Dr. Zick's figure for the greenhouse trials is a combined one, both trials are considered as having been done in the period 1969-1972, although one trial was actually started in the latter part of 1972, and evaluated in January 1973. See UC Ex. 35, p. 133.

To the above costs will be added 20% of the cost of the field development men for administrative costs and for samples, or $8,100.

The following costs, then, are allowed for tests done during the years 1969-1972, which were included in the data submitted to the EPA:

Cost of field development men	$40,500	
Testing and grants	17,000	
Administrative costs and cost of research samples to cooperators	8,100	
TOTAL:	$65,600	110/

For 1973, Union Carbide claimed costs in the amount of $48,775. 111/ Thompson-Hayward objects to any costs for 1973, because none of the test data submitted to the EPA was generated in that year. The data on which Thompson-Hayward relied, however, would appear to be the entire data package that was submitted, which includes, besides the test data itself, summaries of the data and regional statements relating to the applicability of the data to certain states. 112/ Some cost should be allowed for this effort. Neither Dr. Fertig's estimated costs for the entire year, nor Dr. McLane's description of the Butyrac research program on peanuts for 1973, are stated

110/ The costs for meetings (UC Ex. 2) and for developing the BUTYRAC 175 formulation (UC Ex. 3) are disallowed for the reasons already stated.

111/ UC Exs. 1-12.

112/ UC Ex. 35, pp. 8-30.

in a way which would provide cost figures for this specific effort. It is, however, to be noted that the efficacy data package was submitted to the EPA on May 2, 1973, and that Dr. McLane and Mitchell, one of the development men, participated in preparing this information.[113/] Dr. McLane's effort is included in the annual cost of $3,375 claimed for the five-man R&D administrative staff.[114/] Allowing one-third of the cost claimed for the R&D staff and also one-third of the annual cost of $4,000 claimed for Mitchell's effort, since a four-month period is involved, should provide a rough estimate of the cost of the effort in preparing the summary data for the efficacy volume. Accordingly, a cost of $2,460 will be allowed for 1973.

In 1974, the only direct cost which can be said to have been incurred in producing the test data submitted to the EPA, is the cost for the two wildlife acute toxicity studies. These were performed for Union Carbide by an independent laboratory at a cost to Union Carbide of $1,500[115/] Consequently, $1,500 will be allowed for 1974, plus 20% for monitoring such tests, or a total cost of $1,800.[116/] Costs in the amount of $126,658 are rejected for the reasons stated above.[117/]

113/ UC Ex. 30, pp. 8-20.

114/ UC Ex. 1.

115/ UC Ex. 13; Tr. 117.

116/ T-H Ex. 1, p. 23.

117/ Supra at 36-42.

To summarize, the following direct costs are allowed for production of the data submitted to the EPA and relied upon by Thompson-Hayward:

1967		$ 750
1968		1,500
1969-1972		65,600
1973		2,460
1974		1,800
	TOTAL:	$72,110

The amount of $72,110 is, of course, considerably less than the $310,431 claimed by Union Carbide. As the discussion should make clear, however, Union Carbide's cost estimates suffer from two critical defects. First, Union Carbide has included costs for work done in developing a peanut use for Butyrac which should not be charged to Thompson-Hayward under Section 3(c)(1)(D), because they were not incurred in producing the data relied on by Thompson-Hayward. Second, insofar as its costs do cover work that should be charged to Thompson-Hayward, Union Carbide has produced only estimates which in many instances cannot be accepted on their face as reliable estimates of the actual costs, and which, if anything, would appear to be slanted toward overstating the actual costs.

3. "Indirect" Costs Or Overhead

Union Carbide has included two kinds of overhead in its costs. It has included an overhead cost for the Agricultural Chemical Division, and a corporate overhead cost.[118/] The total overhead so computed amounted to $379,000.[119/]

Here, again, Union Carbide's data suffers from a lack of substantiating corporate records, so it is not entirely clear what the figures represent.

118/ UC Exs. 21, 22 and 23, and Mr. DiGiovanni's explanation of those exhibits in UC Ex. 42, pp. 3-5.

119/ UC Ex. 33.

Further, Mr. DiGiovanni's calculations were arrived at independently of Dr. Fertig's calculations, although Mr. DiGiovanni used Dr. Fertig's calculations in determining an indirect charge.[120/]

The allowable share of the Agricultural Chemical Division overhead was arrived at by taking the percentage which the indirect costs for the Division (calculated as including all costs except direct labor costs) bore to the direct labor costs and applying that percentage to Dr. Fertig's costs.[121/] One problem with this method is that it is not at all clear that Dr. Fertig's

120/ Tr. 240.

121/ UC Exs. 21 and 22. The direct labor costs included salaries, bonuses, employees' benefits, weekly wages and hourly wages with certain adjustments. There appear to be inconsistencies in Mr. DiGiovanni's figures which he was unable to explain. In 1971, for example, it appears that his calculation was made using the compensation paid to all employees in the Agricultural Chemical Division. In 1973, however, his calculation appears to have been made using the compensation paid to employees in research and development. Compare T-H Ex. 14 with T-H Exs. 15-16, and T-H Exs. 19-24. In addition, the total Division expenses used to compute indirect costs shown on UC Ex. 22 for 1970 and 1971, agree with the total expenses for the Division shown on Amchem's financial statements. See T-H Exs. 19-25, in camera. This does not appear to be the case, however, with the totals for 1972 and 1973, which are considerably smaller. Compare UC Ex. 22 with T-H Exs. 15-18. Mr. DiGiovanni did not take his figures on UC Ex. 22 from Amchem's financial statements, but from summary figures prepared by former Amchem employees which assertedly were derived from Amchem's financial statements. Tr. 614, 620-22, 636; T-H Ex. 14.

"direct costs" were limited to the direct labor costs used in Mr. DiGiovanni's computations. For example, Dr. Fertig's direct costs contain an annual charge for the Greenville farm which includes utilities and maintenance of the facility.[122/] These expenses, however, would appear to have been counted as indirect costs in Mr. DiGiovanni's calculations; his direct costs were limited to employee compensation. Mr. DiGiovanni made no attempt to reconcile Dr. Fertig's costs with his own cost figures. Consequently, Mr. DiGiovanni was really unable to tell to what extent Thompson-Hayward was being charged twice for the same cost, once as a direct cost and once as an indirect cost.[123/]

In computing corporate overhead, Union Carbide took the percentage which Dr. Fertig's direct costs bore to the Agricultural Chemical Division's direct labor costs and applied it to a corporate administrative overhead expense for the Agricultural Chemical Division.[124/]

122/ Tr. 100.

123/ See Tr. 638-39.

124/ See Tr. 638-39, UC Ex. 23 in camera. In 1970 corporate administrative overhead expense was calculated by taking the percentage which research expenditures for the Agricultural Chemical Division bore to certain total expenses for the Division (manufacturing, selling, advertising, and research) and multiplying the administrative expense for the Division by that percentage. On the other hand, in 1971, the figures used for the calculation appear to have been total Amchem figures and not just the expenses for the Agricultural Chemical Division. See Tr. 644-47, and compare T-H Exs. 7 and 8 with T-H Ex. 25. The effect could be to increase the amount of overhead allocable to BUTYRAC 175.

It appears that the Agricultural Chemical Division overhead added to Dr. Fertig's direct costs represents a share of the expenses for such matters as screening of compounds, laboratory expenses, mechanical research and development expenses, analytical laboratory expenses (of which toxicity studies would appear to be a major component), patent expenses, and general technical expenses.[125/] Perhaps it may have been Amchem's practice to allocate its expenses for developing a BUTYRAC 175 peanut registration in this way.[126/] There is simply no basis, however, for allocating such expenses to the production of the data on which Thompson-Hayward relied. To cite but a few examples, the 1971 expenditures show several thousand dollars as having been disbursed as grants-in-aid. Yet, Union Carbide's total grants-in-aid for the data involved in this case amounted to only $800.[127/] Also included are the expenses for the analytical laboratory. In 1971, they amounted to several hundred thousand dollars of which over one-third is for toxicity studies.[128/] The only Union Carbide

125/ See e.g. T-H Exs. 19-24, which breaks down the total expense shown on T-H Ex. 14 for 1970 and 1971, into subtotals for the various matters described.

126/ The lack of uniformity in the methodology, however, indicates that the calculations were contrived solely for the purpose of determining compensation in this case. See supra n. 121, 124, and Tr. 621.

127/ See T-H Ex. 19, T-H Ex. 1 (Appendix). Figures for 1971 are used because the record contains rather complete financial data from Amchem's books and records for that year. See T-H Exs. 19-25.

128/ T-H Ex. 22.

toxicity studies, however, on which Thompson-Hayward relied are the two wildlife studies done in 1974. Still a third example is the patent expense which, in 1971, amounted to over a hundred thousand dollars.[129/] Patents simply played no part in developing either the efficacy or toxicity data which Thompson-Hayward relied on.

In sum, these indirect costs may be attributable to the production of data supporting the registration of 2,4-DB on peanuts, as claimed by Union Carbide.[130/] They have not been shown, however, to be attributable to the production of the efficacy and acute toxicity data relied on by Thompson-Hayward and, accordingly, are disallowed.[131/]

129/ T-H Ex. 23.

130/ Brief at 22.

131/ As to some of the indirect expenses like utilities and travel and car expense, it is unclear whether these expenses haven't already been included in Dr. Fertig's direct costs. See supra at 49.

The corporate indirect costs used by Union Carbide for its cost computations, on the other hand, appear to be general administrative costs for the entire company.[132/] Consequently, since there is no evidence to the contrary, it will be assumed that these costs apply to all corporate activities, including the production of the test data on which Thompson-Hayward relied, although the precise way in which they apply cannot be ascertained on this record. Hence, an allowance should be made for them.[133/] Following the same method for calculating corporate overhead as that used by Union Carbide, but substituting for Dr. Fertig's direct cost figures, the direct cost of $72,110 allowed herein, a corporate overhead of $27,000 is allowed.[134/]

132/ See T-H Ex, 25.

133/ The only listing of the specific items which make up the administrative cost appears to be in the financial data for 1970 and 1971 contained in T-H Ex. 25. This listing does include a cost for patent amortization which, to be consistent with the disallowance of such costs in the computation of the Division overhead, should probably also be eliminated in computing the corporate indirect cost. Judging from the 1970 and 1971 figures, however, it appears to be a very minor part of the indirect costs, having no significant effect on the overhead calculations.

134/ See UC Ex. 23. The cost for each year is given in Appendix B below.

4. The Allocable Cost of "Losses"

Included in Union Carbide's claim for compensation is the amount of $481,011 said to be the share of Union Carbide's cost of research on non-commercialized products which should be assigned to the development of the commercially successful peanut use. The allocation is made by taking the proportion which the claimed direct and indirect Butyrac peanut data costs bore to total Amchem research and development expenditures during the eight years period 1967-1974.[135/] The argument seems to be that Thompson-Hayward, having benefited from Union Carbide's development of the peanut use, should pay its "fair" share of the expenses of maintaining the research organization which made possible that development.

The argument is presented as being simply one of equitably dividing the data development costs between it and Thompson-Hayward within the intent of Section 3(c)(1)(D), but closer examination discloses that including a cost of research done on noncommercialized products in determining compensation would work contrary to the purposes of Section 3(c)(1)(D).

Union Carbide argues that from its standpoint there must be taken into account in determining reasonable compensation, Congress' concern with preserving the incentive for research and development.[136/] This is true but it is difficult to see, nevertheless, that there would be any real harm to research and development if the costs claimed for the non-commercial research were disallowed as an element of compensation.

No doubt, the profit expected or realized from research and development provides the incentive for carrying on such work with the risk of coming up with "losers" as well as "winners." Union Carbide, however, does not

135/ See UC Ex. 27 as recalculated in Union Carbide's proposed findings and conclusions.

136/ Union Carbide's trial brief at 8.

appear to count the Butyrac peanut use as a loser even with Thompson-Hayward's entry into the market. In fact, there is nothing in this record to indicate that notwithstanding Thompson-Hayward's entry, the profits realized and still to be realized from the Butyrac peanut use would not in themselves have been a sufficient incentive for the effort spent in developing the peanut use.[137/]

So far as Union Carbide's argument is more general in scope and raises the fear of research and development being discouraged if companies like Thompson-Hayward can rely on the benefits, but don't have to share in the costs, of research and development, that fear would seem to be speculative. Patent or trade secret protection as well as the competitive advantages from being first in developing the product and in putting it on the market are still present as incentives and may justify any additional costs the producer may incur vis-a-vis the "me-too" registrant by maintaining a research and development organization.

On the other hand, while it is doubtful that including a cost for research on "losers" in determining compensation under Section 3(c)(1)(D) would significantly affect research and development by data procducers, there can be no doubt about the effect upon subsequent data users of including such a cost. If this case is any example, that effect would be to increase the costs over what it would probably cost the "me-too"

137/ See Tr. 46-47.

registrant to do its own testing by 70%.[138] It is evident that calculating costs in a manner which would make it much more expensive for subsequent registrants to rely on the first registrant's test data than to do their own testing would probably result in subsequent registrants doing their own testing, if they could afford it, rather than relying on the mandatory licensing provision of Section 3(c)(1)(D).[139] This, of course, would be directly opposed to the Congressional goal for having mandatory licensing in order to avoid unnecessarily wasteful duplicative testing.[140]

5. Cost of Money

Another cost claimed by Union Carbide is the cost of money expended during the development process. This is arrived at by taking the historic direct and indirect costs and applying to them an interest factor to reflect

138/ According to Union Carbide, it costs $689,000 to develop the data for a peanut use for Butyrac. The allocable cost of research of noncommercialized products is computed as amounting to $481,000. UC Ex. 33 (as recalculated in Union Carbide's proposed findings). The 70% additional cost for research of noncommercialized products assumes that Thompson-Hayward's costs for developing data would be the same as those claimed by Union Carbide. It is to be noted that Union Carbide does not contend that Thompson-Hayward needed a research and development organization to develop its own toxicity and efficacy data, and the record does not indicate that it did. The wildlife toxicity tests were purchased from an independent laboratory and it appears that organizations can also be hired to do efficacy testing. Tr. 314.

139/ These subsequent registrants who could not afford to do their own testing would presumably be barred from the market unless they were able to obtain the data producer's consent to use his data at a lower cost.

140/ S. Rep. No. 92-838 (Part II), supra n. 22 at 72-73.

the interest that was lost by expending the money in the production of Butyrac data. The amount claimed is $150,355.[141/]

Thompson-Hayward does not really question Union Carbide's claim that the cost of money is properly taken into account in determining the cost of developing test data.[142/] Consequently, it is held to be a reasonable cost in determining the cost of the data which is to be shared.

Thompson-Hayward argues that such a cost is usually included in a company's overhead figures rather than stated as a separate cost.[143/] That argument, however, appears to be based on Dr. Zick's testimony and there is nothing in his testimony to indicate that Dr. Zick included the cost of money in his overhead figure of 20% which was used in computing costs here, or that Union Carbide included in its overhead costs.[144/]

It is, of course, true that the amount claimed by Union Carbide is overstated since it covers expenditures on work for which it has been held Thompson-Hayward should not be charged. Accordingly, using

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141/ UC Exs. 31; 42, p. 8.

142/ Dr. Zick agreed that the cost of money would be included in budgeting for the cost of developing data. Tr. 411-13.

143/ Reply brief at 39.

144/ See T-H Ex. 1, p. 23, where Dr. Zick describes his 20% overhead estimate as including the cost of supervising the research programs and of supplying chemical examples, etc., to the field development men. Thompson-Hayward cites Dr. Zick's testimony that he included such cost in his budgeting at Velsicol. See Tr. 397. This, however, does not prove that he also included such a cost in his own overhead estimates for this case, in view of his description of what that estimate included. Nor does the testimony of Dr. Zick at Tr. 546, cited by Thompson-Hayward, prove that Union Carbide included such a cost in its overhead costs.

Union Carbide's interest rate factors, since they have not been shown to be incorrect in determining the cost of money expended in developing the data, but applying them to the costs which have been held to be compensable in this proceeding, a cost of $22,673 will be allowed.[145/]

B. How The Cost Is To Be Shared

Union Carbide contends that the cost should be divided equally between itself and Thompson-Hayward, since it is argued Thompson-Hayward is able to obtain the same benefits from use of the data as Union Carbide. Thompson-Hayward, on the other hand, contends that its share of the cost should be determined by its share of total domestic production of formulated 2,4-DB during the four years 1977-1980, 1977 being the first year after its registration was granted in which Thompson-Hayward produced 2,4-DB.[146/] In support of its position, it cites Ciba-Geigy v. Farmland where the cost was apportioned between the parties according to their respective shares of total domestic sales.[147/]

In computing its market share, Thompson-Hayward relies on figures furnished by the EPA showing total production of formulated 2,4-DB for the years 1975-1980. These figures were not offered into evidence, but Thompson-Hayward argues that it assumed that since I obtained the figures from the EPA at the request of Thompson-Hayward and then turned them over at the

145/ See UC Ex. 31. The cost for each year is given in Appendix B below.

146/ Tr. 497.

147/ Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 40-42.

hearing to counsel, the information had been placed into evidence by me.[148/] There is no basis, either in my request to the EPA for the data, or in my turning over the data to counsel at the hearing for any such assumption.[149/]

The production figures were derived from the annual reports which pesticide producers are required to submit to the EPA on their production of pesticides.[150/] Thompson-Hayward suggests that the information is the kind of which official notice could be taken. Undoubtedly, official notice could be taken of the fact that these figures are production figures from the EPA's files. That, however, would not settle the question at hand, which is the validity of using this information in conjunction with the production data furnished by Thompson-Hayward to determine market shares. To resolve this question, I would need to know more about the EPA's figures than simply that they were obtained from production reports

148/ See Thompson-Hayward's reply brief at 11.

149/ See Tr. 4-5, 185-186. In my memorandum of October 22, 1981, to the EPA's Director of Pesticides and Toxic Substances Enforcement Division, I pointed out that Thompson-Hayward had requested "the release" of the production data, and that Union Carbide intends to oppose the motion. I then stated as follows:

> The hearing on this matter is scheduled for October 28, 1981. It now appears that I may not be able to rule on the matter until the hearing. In order not to delay the hearing, it is requested that you make the data available to me now on a confidential basis. If it is determined to grant Respondent's request, I will turn over the data to the parties' outside counsel, subject to a protective order because of the confidential status of the data under FIFRA, Section 7.

150/ See FIFRA, Section 7, 7 U.S.C. 136e; 40 CFR 167.5.

filed with the EPA.[151/] Since the only relevant purpose for taking official notice of the EPA's production figures is to use them to determine Thompson-Hayward's market share, I decline to take official notice of them.

Thompson-Hayward also offers the EPA's production figures into evidence. That offer is rejected for the reason that Union Carbide is entitled to have the figures identified by a qualified witness who would be available for cross-examination on the kind of information that is included in the total figures.[152/] In short, Union Carbide's objection that there is no credible evidence in the record on which a market share determination can be made is well-taken.[153/]

151/ For example, unknown about the EPA's figures is the extent to which there are duplications in the total which would make them unacceptable as a universe for determining market shares. Also unknown is the extent to which the total includes repackaging that has been excluded by Thompson-Hayward in its production figures. See Tr. 471-74, 497-99. Production for purposes of the EPA's reports appears to be broadly defined to include repackaging and otherwise changing containers, as well as processing. See 40 CFR 167.1.

152/ The production data with the covering memorandum of the Director, Pesticides and Toxic Substances, Enforcement Division, dated October 27, 1981, is marked as Thompson-Hayward Ex. 26, for identification and included in the record as a rejected exhibit.

153/ Union Carbide also argues that the production data is not adequate because it is not limited to the production of 2,4-DB for sale for a peanut use. There would be merit to this argument if it were shown that Thompson-Hayward, in determining market shares, was comparing production or sales for a peanut use against production or sales for all uses of 2,4-DB. As Thompson-Hayward points out, however, its registration of KLEAN-UP was for use both on soybeans and peanuts, UC Ex. 15. Presumably, therefore, its production data included production for both uses. Whether or not there would still be a distortion in the data for purposes of determining compensation would depend on whether these two uses constituted the major uses for 2,4-DB, and whether there was reason to believe that Thompson-Hayward had a greater share of the peanut market than of the soybean market. It is not necessary to decide this question since the total production figures have been rejected for the purpose of determining market share.

There is also a defect in Thompson-Hayward's own production figures which would make them unsatisfactory even if there were valid total production figures available, and which should be addressed because it arises from a misreading of Ciba-Geigy v. Farmland. In Ciba-Geigy v. Farmland costs were prorated on the basis of Farmland's share of total sales.[154/] Here, however, Thompson-Hayward has used production figures which admittedly do not cover all 2,4-DB sold by Thompson-Hayward during the first five years following its registration, the period it has used to determine market shares.[155/]

Thompson-Hayward has given no reasons in its brief for allocating cost on the basis of production and not on sales as was done in Ciba-Geigy v. Farmland. The explanation is probably to be found in its claim in seeking release of the EPA's production figures, namely, that these were the only total figures it knew of which could be used as a basis for determining market shares.[156/] It has completely misread Ciba-Geigy v. Farmland, however, if it has assumed that this was a sufficient ground on which to justify its market share computations. In Ciba-Geigy v. Farmland sales were considered to be a fair measure of the benefit which a user of the data derived or expected to derive from the data.[157/] It does not appear that Thompson-Hayward's production figures can or should

154/ Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 43-44.

155/ The production figures, for example, do not include all 2,4-DB which Thompson-Hayward repackaged, nor do they include 2,4-DB which it relabeled. Tr. 471-74, 498-99, 505-08, 511; UC Ex. 45.

156/ Motion filed October 8, 1981.

157/ Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 43-44.

be considered as a fair measure of the benefit that Thompson-Hayward has derived or expects to derive from its use of the data.[158/]

Union Carbide, in opposition to Thompson-Hayward's market share figures asserts that costs should be divided equally between it and Thompson-Hayward because this involves the application of "objective" criteria which, unlike sales or production, cannot be manipulated by the subsequent registrant to its advantage, and recognizes each's ability to capture the market share they can upon an equal footing.

Ciba-Geigy v. Farmland makes clear that the theoretical possibility that a subsequent registrant might juggle its sales in order to decrease its compensation liability does not preclude using market shares based on sales, when the sales data reliably demonstrates the scale of the subsequent registrant's participation in the market. In this case, however, the production figures do not reliably demonstrate Thompson-Hayward's participation in the 2,4-DB peanut use market. Not only are they not equivalent to sales, but there is no evidence from which it could be determined whether in themselves they represent production at full capacity,

158/ Production data would, of course, be a fair measure of the benefit if they were shown to be substantially equivalent to sales. I do not understand Thompson-Hayward, however, to be offering its production figures on this ground and the record would not support a finding that production was equivalent to sales, since the sales data from Thompson-Hayward's records which is in evidence has been compiled differently than the production data. See Tr. 504-11.

or some lesser production attributable to special conditions existing in 1976-1980, which would make them unsuitable as a measure for determining compensation.[159/]

It must be concluded, then, that on the basis of this record there is merit to Union Carbide's position that market shares should not be used as a basis for determining compensation. This is so, it should be emphasized, not because of the possibility that Thompson-Hayward manipulated its sales in order to reduce its liability for compensation, but because of the deficiency in the production data used to compute market shares. In place of basing compensation on market shares, Union Carbide agrues that it should give recognition to the fact that Thompson-Hayward's ability to compete in the market and to benefit from the data was equal to Union Carbide's by dividing the cost equally between the two. In other words, what is assumed in the argument is that what should be taken into account is that Thompson-Hayward was potentially capable of sharing the market equally with Union Carbide, and not whether it actually did so. This argument is not as irrelevant as Thompson-Hayward would make it.[160/] There would be no warrant in construing Section 3(c)(1)(D) so as to make the data available to a subsequent registrant on a risk-free basis. Yet, this would be the effect if compensation were governed solely

159/ In Ciba-Geigy v. Farmland, Farmland's sales were determined on the basis of its planned plant capacity for producing atrazine, the pesticide involved in that proceeding, it being assumed that Farmland's sales were equivalent to its production. See Initial Decision at 42, and Order Denying Motion For Reconsideration at 5. Such an assumption cannot be made in this case.

160/ See Thompson-Hayward's reply brief at 6.

by the subsequent registrant's success, or lack of success, in obtaining sales at any given point in time. In Ciba-Giegy v. Farmland, it is to be noted that sales figures for 1975 and 1976 were rejected because they were not considered to be as representative of the market share which Farmland was capable of achieving as were the sales in the next two years, when for the first time Farmland's plant was operating at full capacity.[161/]

Thompson-Hayward further argues that if compensation was to be based on ability to compete, the burden was on Union Carbide to prove that Thompson-Hayward was equal in ability to Union Carbide.[162/] To the contrary, the burden on Union Carbide was to show that its method of determining compensation was reasonable. In the absence of evidence dictating a different result, it is reasonable to assume that all users of the data share equally in the benefits and, therefore, should share equally in the costs.

Thompson-Hayward further argues, however, that the fact that it stopped formulating 2,4-DB in 1980, should be proof that it did not have the ability to compete equally with Union Carbide. For the reasons already given, however, its production figures cannot be taken as proof of Thompson-Hayward's ability to compete during the years 1977-1980,

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161/ Ciba-Geigy v. Farmland, supra n. 11, Order Denying Motion for Reconsideration at 5-6.

162/ Thompson-Hayward's reply brief at 6.

because they cannot be considered as truly representing its capacity to produce and sell 2,4-DB. Accepting for the sake of argument that Thompson-Hayward discontinued production of 2,4-DB in 1980, because of its lack of success in capturing sales, that in itself would not be a basis for reducing compensation. As already noted, Section 3(c)(1)(D) was not intended to shield the subsequent registrant from the risks normally associated with marketing a product, including the risk that a particular product may be unprofitable, or may not result in as great a volume of sales as expected.

Consequently, Thompson-Hayward's share of the cost will be determined on its ability to compete and share in the market rather than on market shares with one important modification to the equal division of costs proposed by Union Carbide. As Thompson-Hayward indicates, the record indicates that Rhone-Poulenc (formerly Rhodia, Inc.) has also obtained a registration in reliance on the data.[163/] It would appear, then, that Thompson-Hayward shares the 2,4-DB market with both Rhone-Poulenc and Union Carbide and that it would be fairer, therefore, to charge Thompson-Hayward with one-third of the cost rather than one-half.[164/]

163/ See Tr. 604-05, UC Ex. 48. See also statement and certification of Union Carbide Agricultural Products Company, Inc. pursuant to Section 2(e) of the rules of procedure, filed March 25, 1980, which is included in the pleadings of this case. The data appears to have been made available to Rhone-Poulenc under an arrangement by which the companies agreed to share in the development data for registering 2,4-DB. Tr. 605; Union Carbide's trial brief at 2.

164/ It is recognized that the method of allocating followed here is essentially the "per-capita" method which, as noted in Ciba-Geigy v. Farmland, can present problems in attempting to apply it to other registrants who may rely on the data. See Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 42-43. Whether this per-capita method is to be used in resolving claims against other registrants, and if so, in what way, are questions to be answered in proceedings under Section 3(c)(1)(D) involving those registrants, if such cases arise.

C. How The Cost Is To Be Adjusted

As pointed out in Ciba-Geigy v. Farmland, the obligation to pay compensation arose when the subsequent registrant made its offer to pay compensation and relied upon the data in obtaining its registration. Consequently, in that case, compensation was based not on original cost, but on reproduction cost in 1975, when the subsequent registrant obtained its registration. Compensation, in short, was valued as of the time the liability arose.[165/]

Thompson-Hayward, relying on Ciba-Giegy v. Farmland, does not really dispute basing compensation on 1975 reproduction costs. Union Carbide, however, contends that compensation should be based on 1980 reproduction costs. The difference between 1975 and 1980 reproduction costs can be considerable. Under Union Carbide's calculations, it would add over $275,000 to the amount to be paid by Thompson-Hayward.[166/]

It is to be noted Union Carbide does not seek 1980 reproduction costs as a substitute for interest. It apparently accepts as dispositive the ruling in Ciba-Geigy v. Farmland that a subsequent registrant should not be charged interest for the time taken to have his liability for compensation determined under Section 3(d)(1)(D), unless the subsequent registrant

165/ See Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 41.

166/ UC Ex. 33, as recalculated in its proposed findings.

rather than by the costs to the data producer was rejected. It was pointed out that allowing the data producer to charge the maximum price that conceivably it could extract from the subsequent registrant would, in effect, minimize any cost savings that could be realized from the licensing of the data, and would work contrary to the purpose of Section 3(c)(1)(D) of doing away with unnecessary duplicative testing costs.[170/] Here, arguably, Union Carbide is not asking for the maximum price, but this does not make any less objectionable its request that Thompson-Hayward should pay for the value of what it is receiving and not just share in the cost of the data.

It is undoubtedly true that Thompson-Hayward, by relying on Union Carbide's data, has been able to obtain a registration more quickly than if it produced its own data. It is also understandable that Union Carbide may regard this as giving Thompson-Hayward an advantage which Union Carbide did not have. There has been no showing, however, that it gives Thompson-Hayward some cost advantage over Union Carbide. Indeed, the whole purpose of this proceeding is to levy on Thompson-Hayward some fair share of the costs, and this includes the cost of money invested in developing the data.

The reason for paying Union Carbide for the advantage of early entry gained by Thompson-Hayward, although not specifically stated, is presumably to preserve Union Carbide's incentive for maintaining a research

170/ See Ciba-Geigy v. Farmland, supra n. 11, Initial Decision at 32-34. It was also stated in Ciba-Geigy v. Farmland that "[c]onsidering the benefit to the user in apportioning the cost of the data. . .is a different matter than utilizing the benefit to the user as a justification for awarding compensation in excess of cost. . . ." Initial Decision at 43-44.

was responsible for delays in the proceeding.[167] Instead, Union Carbide claims that use of the 1980 reproduction cost will serve the purpose of including a payment by Thompson-Hayward for the benefit which accrued to it by reason of not having to wait four to six years to generate its own data, assuming that it's decision to obtain a registration for 2,4-DB was made in 1975.[168]

One objection to awarding 1980 reproduction costs even for the purpose stated by Union Carbide, is that it is not at all clear that it would have taken Thompson-Hayward four to six years to generate its own data in lieu of relying on Union Carbide's efficacy and toxicity data. It was Dr. Zick's opinion that Thompson-Hayward, if it had been necessary for it to produce its own data, could have probably done so in a year and a half to two years' time.[169]

There is, however, a more fundamental reason why the claim for 1980 reproduction costs should be rejected. In Ciba-Geigy v. Farmland, the proposition that compensation should be determined by the value of the benefits accruing to the subsequent registrant from the use of the data

167/ Ciba-Geigy v. Farmland, supra n. 11, Order Denying Motion for Reconsideration at 2-4. Here Union Carbide does not claim that Thompson-Hayward was responsible for delays in the proceeding. In fact, the proceedings were stayed at the request of Union Carbide from March, 1976, until February, 1980.

168/ Union Carbide's trial brief at 27.

169/ Tr. 423.

organization, by compensating it for whatever losses in profits and sales it may have suffered by Thompson-Hayward's entry. The argument, however, that making it easier for a competitor to enter the market will discourage the incentive for research and development, is simply repeating in another form the argument already rejected, namely, that Section 3(c)(1)(D) was intended to encourage research and development by shielding the data developer from competition.

Nor does it appear that any useful purpose would be served by increasing the cost to the subsequent registrant because of the advantage gained in being able to enter the market sooner than if it had to develop its own data. If it be assumed that the purpose of Section 3(c)(1)(D) is to minimize the costs imposed by federal testing requirements, and the legislative history does support such an assumption, then it would appear that the delay entailed in meeting these registration requirements is in effect, a form of cost which should also be kept to a minimum. Thompson-Hayward is being required in this case to share in the costs related to the loss of earnings from money invested in developing the data during the six-year period prior to registration. Thus, it has not escaped the burden attributable to the time taken to develop the data, so far as this has imposed a cost on the data producer. Over and above this, requiring it to pay additional compensation by reason of the fact that by relying on Union Carbide's data it was able to enter the market quicker than if it developed its own data, merely increases the expense of relying on someone else's data and by doing so, the incentive, for the subsequent registrant to produce its own data. This

would seem to work directly contrary to the purpose of Section 3(c)(1)(D). Consequently, 1980 reproduction costs are rejected and compensation will be determined on the basis of 1975 reproduction costs. Using the same inflation rates as Union Carbide, the 1975 costs are $132,579.[171/]

D. The Compensation Payable

For the reasons stated above, I conclude that compensation is to be determined on the basis of the 1975 reproduction costs for reproducing the data relied on by Thompson-Hayward, which has been found herein to amount to $132,579, plus the cost of the money used by Union Carbide to finance the development of the data, which has been found to amount to $22,763. I further conclude that Thompson-Hayward should pay one-third of this total cost of $155,342, or $51,760, and that such amount is reasonable compensation for the data which it has relied upon.

FINAL ORDER[172/]

In this proceeding under the Federal Insecticide, Fungicide and Rodenticide Act, Section 3(c)(1)(D), as amended by the Federal Environmental Pesticide Control Act of 1972, Pub. L. No. 92-516, 86 Stat. 979-80,

171/ See UC Ex. 29. The cost for each year is given in Appendix C below.

172/ Pursuant to Section 29(c) of the rules of procedure issued herein, this order becomes the final order of the Administrator within forty-five (45) days after transmission thereof by the Hearing Clerk to the Administrator unless (1) an appeal is taken by a party to the Administrator pursuant to Section 22 of the Rules; or (2) the Administrator elects, sua sponte, to review the initial decision.

it is hereby determined that the amount of $51,760 is reasonable compensation for test data produced by Union Carbide Agricultural Products Company, Inc. (formerly known as Amchem Products, Inc.), and submitted in support of an application for registration by said Union Carbide Agricultural Products Company, Inc., and subsequently relied upon by Thompson-Hayward Chemical Company in support of its application for registration of KLEAN-UP 2,4-DB AMINE (EPA Reg. No. 148-113). Said amount of $51,760 shall be paid by Thompson-Hayward Chemical Company to Union Carbide Agricultural Products Company, Inc. within thirty (30) days from the date this order becomes final as provided in the rules of procedure issued herein.

Gerald Harwood

Gerald Harwood
Administrative Law Judge

July 13, 1982

APPENDIX A

Federal Insecticide, Fungicide and Rodenticide Act. Section 3(c)(1)(D), as amended by the Federal Environmental Pest Control Act of 1972, Pub. L. No. 92-516, Section 2, 86 Stat. 979-980:

> 3(c)(1). . .Each applicant for registration of a pesticide shall file with the Administrator a statement which includes
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> * * *
>
> (D) if requested of the Administrator, a full description of the tests made and the results thereof upon which the claims are based, except that data submitted in support of an application shall not, without permission of the applicant, be considered by the Administrator in support of any other application for registration unless such other applicant shall have first offered to pay reasonable compensation for producing the test data to be relied upon and such data is not protected from disclosure by section 10(b). If the parties cannot agree on the amount and method of payment, the Administrator shall make such determination and may fix such other terms and conditions as may be reasonable under the circumstances. The Administrator's determination shall be made on the record after notice and opportunity for hearing. If the owner of the test data does not agree with said determination, he may, within thirty days, take an appeal to the federal district court for the district in which he resides with respect to either the amount of the payment or the terms of payment, or both. 'In no event shall the amount of payment determined by the court be less than that determined by the Administrator. . . .

APPENDIX B

Historic Costs And Costs of Money Reimbursement Recalculated

a/

		1967	1968	1969	1970	1971	1972	1973	1974	TOTAL
1.	Direct Costs	$750	$1,500	$14,700	$14,700	$14,700	$21,500	$2,460	$1,800	$72,110
2.	Corporate Overhead	360	668	2,577	1,813	4,715	13,442	1,820	1,611	27,006
3.	Cost of Money Reimbusement	537	976	8,120	5,614	3,240	3,844	342	- 0 -	22,673

a/ Yearly costs for 1969-1972 were determined by taking one-fourth of the total cost computed for the period after subtracting from the total $6,800 for the cost of the demonstration plots, and adding to 1972 the cost of the demonstration plots, since it appears that these were all done in 1972. See UC Ex. 35.

APPENDIX C

Reproduction Costs As Of 1975

		1967	1968	1969	1970	1971	1972	1973	1974	TOTAL
1.	Direct and Corporate Overhead costs a/	$1,110	$2,168	$17,277	$16,513	$19,415	$34,942	$4,280	$3,411	$99,116
2.	Cost Inflator b/	1.606	1.541	1.463	1.381	1.324	1.282	1.207	1.087	
3.	June 1975 Reproduction Cost	$1,783	$3,341	$25,276	$22,804	$25,705	$44,796	$5,166	$3,708	$132,579

a/ Lines 1 and 2 of Exhibit B

b/ From UC Ex. 24.