



E. I. DU PONT DE NEMOURS & COMPANY

INCORPORATED

WILMINGTON 98, DELAWARE

INDUSTRIAL AND BIOCHEMICALS DEPARTMENT

April 8, 1965

Dr. R. P. Upchurch (3)
Associate Professor
North Carolina State College
Raleigh, North Carolina

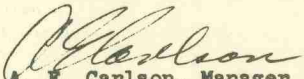
Dear Dr. Upchurch:

Confirming your discussions and correspondence with R. Sutton and J. K. Reynolds, we wish to offer a Grant-in-Aid of \$1500 to assist your program in the evaluation of various herbicide combinations and method of application. We are in agreement with your proposed program as described in your March 8 and March 22, 1965 letters to Jim Reynolds.

This grant is offered with the understanding that if results of the investigation are published, we will be furnished a copy at least ten days in advance of publication.

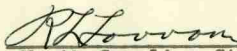
If acceptable, will you kindly have the original and one copy of this letter signed and returned to us, following which we will forward our check to you.

Sincerely,


A. E. Carlson, Manager
Product Development

JKR:fmv

N. C. Agricultural Experiment Station

Accepted:  Director of Research
North Carolina State College

E. I. DU PONT DE NEMOURS & COMPANY
WILMINGTON 98, DELAWARE

March 19, 1965

Dr. R. P. Upchurch (3)
Associate Professor
North Carolina State College
Raleigh, North Carolina

Dear Dr. Upchurch:

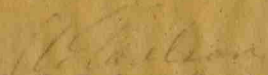
We are very much interested in your proposed plans to continue the program to investigate the biological efficiency and associated recropping possibilities from applications of "Karmex" DL diuron weed killer, "Karmex" diuron weed killer (wetttable powder), and "Lorox" linuron weed killer on cotton -- the latter two with and without surfactants.

In line with the above, we wish to offer North Carolina State College a Grant-in-Aid for \$2,400.00 in partial support of this program. It is intended that this fund will aid in covering miscellaneous expenses involved in field trials for one year. A grant for the continuation of this work in 1966 will be reviewed at the end of 1965.

It is also understood that, if results of the investigations are published, we will be furnished a copy at least ten days in advance of publication.

If acceptable, will you kindly have the original and one copy of this letter signed, as accepted, and returned to us, following which we will forward our check to you.

Very truly yours,


A. E. Carlson, Manager
Product Development

JKR:fav

Accepted: _____
North Carolina State College

Office of the Director of Research
North Carolina Agricultural Experiment Station

MEMORANDUM

To Paul H. Harvey

Attached is one Thermo-fax copy of renewal from DuPont supporting Dr. R. P. Upchurch's soil residue work.

We are returning the original and one signed copy to Dr. Upchurch for transmittal to Dupont.

ATTACHED PAPERS

- ☐ Please note and return.
- ☐ Please note, do not return.
- ☐ File.
- ☐ For your information.
- ☐ For your records.
- ☐ Hold for conference.
- ☐ Speak to me concerning.
- ☐ Please handle.
- ☐ Please answer.
- ☐ Note opinion and return.
- ☐ Needs your signature.
- ☐ Please give me all data.

Signed: R. L. Lowman

Date April 9, 1964

E. I. DU PONT DE NEMOURS & COMPANY

WILMINGTON 98, DELAWARE

April 2, 1964

Dr. R. P. Upchurch (3)
Associate Professor
North Carolina State College
Raleigh, North Carolina

Dear Dr. Upchurch:

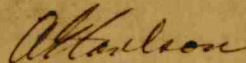
We are very much interested in your proposed plans to continue to carry out a program to investigate the biological efficiency and associated recropping possibilities from applications of "Karmex" DL diuron weed killer, "Karmex" diuron weed killer (wetttable powder), and "Lorox" linuron weed killer on cotton -- the latter two with and without surfactants.

In line with the above, we wish to offer North Carolina State College a Grant-in-Aid for \$2,400.00 in partial support of this program. It is intended that this fund will aid in covering miscellaneous expenses involved in field trials for one year. A grant for the continuation of this work in 1965 will be reviewed at the end of 1964.

It is also understood that, if results of the investigations are published, we will be furnished a copy at least ten days in advance of publication.

If acceptable, will you kindly have the original and one copy of this letter signed, as accepted, and returned to us, following which we will forward our check to you.

Very truly yours,



A. E. Carlson
Sales Manager, Biochemicals

HGO:fmv

N.C. Agricultural Experiment Station

Accepted:



North Carolina State College

Director

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON 98, DELAWARE

March 14, 1963

Dr. R. P. Upchurch (3)
Associate Professor
North Carolina State College
Raleigh, North Carolina

Dear Dr. Upchurch:

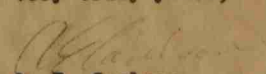
We are very much interested in your proposed plans to continue to carry out a program to investigate the biological efficiency and associated recropping possibilities from applications of "Karmex" DL diuron herbicide, "Karmex" diuron weed killer (wetttable powder), and "Lorox" weed killer on cotton -- the latter two with and without surfactants.

In line with the above, we wish to offer North Carolina State College a Grant-in-Aid for \$2,400.00 in partial support of this program. It is intended that this fund will aid in covering miscellaneous expenses involved in field trials for one year. Grants for the continuation of this work over an additional two-year period will be reviewed annually.

It is also understood that, if results of the investigations are published, we will be furnished a copy at least ten days in advance of publication.

If acceptable, will you kindly have the original and one copy of this letter signed, as accepted, and returned to us, following which we will forward our check to you.

Very truly yours,


A. E. Carlson
Sales Manager, Biochemicals

HCO:fmv

Approved: _____
Director of Sales

Authorized: _____
Assistant General Manager

Accepted: _____
North Carolina State College



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
WILMINGTON 98, DELAWARE

INDUSTRIAL AND BIOCHEMICALS DEPARTMENT

February 27, 1962

Dr. R. P. Upchurch (3)
Associate Professor
North Carolina State College
Raleigh, North Carolina

Dear Dr. Upchurch:

We are very much interested in your proposed plans to carry out a program to investigate the biological efficiency and associated recropping possibilities from applications of "Karmex" DL Diuron Herbicide, "Karmex" Diuron Weed Killer (wetable powder), and "Lorox" Weed Killer on cotton - the latter two with and without surfactants.

In line with the above, we wish to offer North Carolina State College a Grant-in-Aid for \$2,400.00 in partial support of this program. It is intended that this fund will aid in covering miscellaneous expenses involved in field trials for one year. Grants for the continuation of this work over an additional three-year period will be reviewed annually.

It is also understood that, if results of the investigations are published, we will be furnished a copy at least ten days in advance of publication.

If acceptable, will you kindly have the original copy of this letter signed, as accepted, and returned to us, following which we will forward our check to you.

Very truly yours,

A. E. Carlson
Sales Manager, Biochemicals

RHL:MBW

Approved: _____

W. J. Latimore
Director of Sales

Authorized: _____

B. J. Schlemmer
Assistant General Manager

Accepted: _____

R. P. Upchurch
North Carolina State College

Proposed Herbicide Residue Study
N. C. Agricultural Experiment Station
February 26, 1962

I. Objectives:

1. To Establish the Influence or Lack of Influence of Selected Cotton Weed Control Treatments on the Yield and Quality of Crops Grown in Rotation with Cotton.
2. To Establish the Pattern of Diuron Persistence in Soil with Respect to Time.

II. Proposed Location: Upper Coastal Plain Research Station, Rocky Mount, N. C.

III. Soil types: Two, one representing the sandy loam soils of the Coastal Plains (Norfolk) and one representing the heavier darker soils (yet a soil on which tobacco could be grown).

IV. Test Crops: For objective 1: tobacco, corn, peanuts, small grain, cotton;
For objective 2: soybeans

V. Herbicide Treatments (all to be applied on a broadcast basis).

For objective 1: (1) 1 lb/A diuron¹ Pre-emergence + 0.6 lb/A diuron² Lay-by
(2) 1 lb/A diuron¹ Pre-emergence + 1.2 lb/A diuron² Lay-by
(3) 1 lb/A diuron¹ Pre-emergence + 1.2 lb/A linuron² Lay-by
(4) Check

For objective 2: (1) 0.0 lb/A diuron¹ Pre-emergence + 0.0 lb/A diuron² Lay-by
(2) 0.0 lb/A diuron¹ Pre-emergence + 0.6 lb/A diuron² Lay-by
(3) 0.0 lb/A diuron¹ Pre-emergence + 1.2 lb/A diuron² Lay-by
(4) 0.0 lb/A diuron¹ Pre-emergence + 2.4 lb/A diuron² Lay-by
(5) 1.0 lb/A diuron¹ Pre-emergence + 0.0 lb/A diuron² Lay-by
(6) 1.0 lb/A diuron¹ Pre-emergence + 0.6 lb/A diuron² Lay-by
(7) 1.0 lb/A diuron¹ Pre-emergence + 1.2 lb/A diuron² Lay-by
(8) 1.0 lb/A diuron¹ Pre-emergence + 2.4 lb/A diuron² Lay-by

- 1/ Use "Karmex DL"
2/ Use "Karmex diuron herbicide" + wetting agent
3/ Use "Lorox" + wetting agent

VI. Experimental Lay-Out

Plot Size: 6' x 20' for objective 1; 18' x 20' for objective 2

Size of Herbicide Treatment blocks

For objective 1: 30' x 20' (Five crops x 6' = 30')

For objective 2: 18' x 20'

Borders: 15' between blocks at end of rows; 6' (two soybean rows) between herbicide treatments for objective 1.

Replications: For objective 1: Six. For objective 2: Five.

VII. Area Required: Approximately 3.0 acres for each soil type.

VIII. Treatment Systems: Two

System One: Herbicide treatments to be applied to cotton in 1962 and 1964.
Test crops to be grown in 1963 and 1965.

System Two: Herbicide treatments to be applied to cotton in 1962, 1963 and 1964. Test crops to be grown in 1965.

IX. Total Number of test plots (including both soil types)

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Tobacco	0	48	0	96
Corn	0	48	0	96
Peanuts	0	48	0	96
Small Grain	0	48	0	96
Cotton	0	48	0	96
Soybeans	0	80	0	160

X. Data to be recorded.

For objective 1: crop yield, crop quality, crop vigor, crop symptoms

For objective 2: same as for 1 plus information at 3 month intervals on the level of herbicide percent in the soil based on chemical analysis and bioassays using soils from 0-4" and 4-12" depths (160 assays and 160 analyses per 3 month period)

XI. Crop Varieties

Approximate Planting or Transplanting Date

Tobacco - NC 95	May 7
Corn - Dixie 82	May 1
Peanuts - NC 2	May 1
Wheat - Wakeland	October 20
Cotton - Coker 100 A	May 1
Soybeans - Lee	May 1

XII. Production Practices: During the years of herbicide treatment the cotton herbicides would be supplemented with hoeing and cultivation as necessary to control weeds. In the years of the test crops no herbicides would be used but clean plots would be maintained by conventional hoeing and cultivation. Other production practices would be those practices (fertilization, insect control, etc.) required for good production.

XIII. Proposed Responsibility

Agricultural Experiment Station

1. Provide and supervise application of herbicides.
2. Lay out plots
3. Provide tractor
4. Supervise harvests (except for tobacco)
5. Take soil samples and run chemical analysis and bioassays

Research Station:

1. Provide all supplies except herbicides
2. Provide labor for planting, growing and harvesting the crops.
3. Supervise harvest and curing of tobacco plots
4. Supervise production of crops

XIV. Comment on Plot Technique

In order to have the number of replications necessary for detecting the small differences in crop yield which are of interest, two row plots without borders are being used for objective 1. Both rows will be harvested. The yield of these rows will undoubtedly be influenced by the adjacent two rows of a different crop, but the assumption here will be that the same influence will be exerted in the check plot. The difference between the performance of the check plot and the plot having previously received herbicide is the critical information desired.