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To the Honorable Commissioner o	1543793 .ttached original documents or copy thereof
1. Submission Type:	2. Conveyance Type:
■ New 11-20-	Assignment
Resubmission (Non-Recordation)	☐ License ☐ Change of Name
Document ID#	☐ Merger ☐ Other
Correction of PTO Error	LIC COVERNMENT
Reel # Frame #	US. GOVERNMENT (For Use ONLY by U.S. Government Agencies)
Reel # Frame #	
Data Element in Question:	☐ Departmental File ☐ Secret File Total No. of pages of conveyance document including
	attachments
4. Name of conveying party(ies):	5. Name and address of receiving party(ies):
¹ Allen, Stephen M.	E. I. DU PONT DE NEMOURS AND COMPANY
² Miao, Guo-Hua	LEGAL PATENTS
³ Shi, Jinrui	1007 MARKET STREET
⁴ Lu, Guihua	WILMINGTON, DELAWARE 19898
⁵ Helentjaris, Timothy G. ⁶ Li, Chun Ping	
Additional name(s) of conveying party(ies) attached?: Yes	■ No Additional name(s) & address(es) attached? ■ Yes □ No
_	,,,,
Execution Date: 109/18/2000 209/07/2000	
³ 08/30/2000 ⁴ 09/06/2000 ⁵ 08/07/2000 ⁶ 09/01/2000	
08/07/2000 05/01/2000	
5. Application number(s) or patent number(s):	
**	the state of the application is:
If this document is being filed together with a n	ew application, the execution date of the application is:
A. Patent Application No.(s): 09/614,912	B. Patent No.(s):
Docket No.: BB-1378 US NA	
Additiona	l numbers attached: ☐ Yes ■ No
6. Correspondent Name & Address:	7. Total number of applications and patents involved: 1
THOMAS M. RIZZO	8. Total fee (37 CFR 3.41)
E. I. DU PONT DE NEMOURS AND COME	ANY 8. Total fee (37 CFR 3.41)
LEGAL-PATENTS	☐ Enclosed (Check No.:)
1007 MARKET STREET	■ Authorized to be charged to deposit account
WILMINGTON, DELAWARE 19898	
	9 Deposit account number: 04-1928
	9. Deposit account number:04-1928(Attach duplicate copy of this page if paying by deposit account)
	(Attach dapheate copy of the Fig. 1 ; c ;
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10. Statement and signature. To the best of my knowledge and belief, the foof the original document.	oregoing information is true and correct and any attached copy is a true copy
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10. Statement and signature. To the best of my knowledge and belief, the for of the original document. CAROL REEDER	oregoing information is true and correct and any attached copy is a true copy UN 2005

5. Name and address of receiving party(ies) (coninuted):

PIONEER HI-BRED INTERNATIONAL, INC. 7300 N.W. 62ND AVENUE P.O. BOX 1004 JOHNSTON, IOWA 50131-1004

PATENT REEL: 011304 FRAME: 0103

ASSIGNMENT

We, the undersigned

STEPHEN M. ALLEN, ANTHONY J. KINNEY, J. ANTONI RAFALSKI, EMIL M. OROZCO, JR., GUO-HUA MIAO, OMOLAYO O. FAMODU, JIAN-MING LEE, KARIN N. LOHMAN, ALAN R. RENDINA, HAJIME SAKAI, ZUDE WENG, PERRY G. CAIMI, YIWEN FANG, JENNIE BIH-JIEN SHEN, ILHAM L. ZOUGHI, SHAWN L. ANDERSON, JINRUI SHI, GUIHUA LU, TIMOTHY G. HELENTJARIS, and CHUN PING LI

Hereby declare that

We are the true and first inventors of an invention entitled

PLANT METABOLISM GENES

(which is identified as Case Number **BB1378 US NA**) and which is disclosed in an application for Letters Patent in the United States of America., executed the

For valuable consideration, the receipt and adequacy of which is hereby acknowledged and in fulfillment of our pre-existing obligation of assignment, we hereby:

- I. Sell, assign, and transfer unto E. I. du Pont de Nemours and Company, a corporation organized and existing under the laws of the State of Delaware in the United States of America and having its principal place of business at Wilmington, Delaware; or Pioneer Hi-Bred International, Inc., a corporation organized and existing under the laws of the State of Iowa in the United States of America and having its principal place of business at Des Moines, Iowa, (as indicated below) hereinafter referred to as the assignees, (A) the sole and entire right, title, and interest in and to: (1) the aforesaid application for Letters Patent, (2) any priority rights derived from the aforesaid application for Letters Patent by virtue of the International Convention for the Protection of Industrial Property and any other treaty or understanding for intellectual property for any and all member countries of the aforesaid International Convention or other treaty or understanding, (3) any and all our inventions, whether joint or sole, disclosed in the aforesaid application for Letters Patent, (4) any and all applications for Letters Patent for any such inventions in any country whatsoever, (5) any and all patents for any such inventions in any country whatsoever; and (B) the sole right to (1) file such applications in its name or ours, (2) file such applications under the aforesaid International Convention or other treaty or understanding, (3) have said patents granted in its name or ours, and (4) enforce said patents and to sue for and recover profits and damages for any and all infringements thereof whether past or future; and
- II. Agree, whenever requested, to communicate to said assignee, its successors, assigns, and legal representatives, any facts known to us respecting said rights, to testify in any legal proceeding respecting said rights, to execute all applications, papers or instruments necessary or required by said assignees, its successors, assigns and legal representatives, to carry into effect any of the provisions of this instrument, and generally to do everything possible to aid said assignees, its successors, assigns, and legal representatives to obtain and enforce proper patent protection for said inventions in any and all countries.

We further authorize our attorney/patent agent to insert below* the application number and filing date of the aforesaid United States application now identified as Case Number **BB1378 US NA** after the same shall have been made known to him/her by the United States Patent Office.

E. I. du Pont de Nemours and Company	E. I. du Pont de Nemours and Company
flet M. all_ (L.S.)	(L.S.)
DATE: 9/18/03	ANTHONY J. KINNEY DATE:
(L.S.)	(L.S.)
J. ANTONI RAFALSKI DATE: (L.S.)	EMIL M. OROZCO, JR. DATE:
GUO-HUA MIAO DATE: 9/7/00	OMOLAYO O. FAMODU DATE:

PATENT REEL: 011304 FRAME: 0104

(L.S.)	
	E. I. du Pont de Nemours and Company
JIAN-MING LEE	(L.S.)
DATE:	KARIN N. LOHMAN
	DATE:
ALAN R. RENDINA	ar a .
	(L.S.)
DATE:	HAJIME SAKAI
	DATE:
(L.S.)	
ZUDE WENG	(L.S.)
DATE:	PERRY G. CAIMI
	DATE:
YIWEN FANG	(T. C.)
	JENNIE BIH-JIEN SHEN
DATE:	
(L.S.)	DATE:
ILHAM L. ZOUGHI	(L.S.)
DATE:	SHAWN L. ANDERSON
	DATE:
Pioneer Hi-Bred International, Inc.	TI TO 1 T 4 1 T
JINKUI SHI DATE: 8-30-00	Pioneer Hi-Bred International, Inc. Gui kua L (L.S.) GUIHUA LU DATE: 9/6/00
DATE: 8-30-00 () with 6 bles (L.S.)	Guihua LU DATE: 9/6/00
JINKUI SHI DATE: 8-30-00 TIMOTHYG. HELENTJARIS	Guihua LU DATE: 9/6/00 (L.S.)
DATE: 8-30-00 Committee 6. Class	Guihua LU DATE: 9/6/00
JINKUI SHI DATE: 8-30-00 TIMOTHYG. HELENTJARIS DATE: 8/7/00 *The application referred to above as Case N	GUIHUA LU DATE: 9/6/00 CHUN PING LI DATE: 1-0/-00 Sumber BB1378 US NA was filed in the United States Patentication No.09/6/49/2 ay of October, 2000 KATHLEEN W. GEIGER Thomas M. R. 220
JINKUI SHI DATE: 8-30-00 TIMOTHYG. HELENTJARIS DATE: 8/7/00 *The application referred to above as Case N	GUIHUA LU DATE: 9/6/00 CHUN PING LI DATE: 1-0/-00 Sumber BB1378 US NA was filed in the United States Paten ication No. 09/6/4 9/2 ay of October, 2000 KATHLEEN W. GEIGER Thomas D. R. 220 ATTORNEY/PATENT AGENT FOR APPLICANTS
JINKUI SHI DATE: 8-30-00 TIMOTHYG. HELENTJARIS DATE: 8/7/00 *The application referred to above as Case N	GUIHUA LU DATE: 9/6/00 CHUN PING LI DATE: 1-0/-00 Sumber BB1378 US NA was filed in the United States Patentication No.09/6/49/2 ay of October, 2000 KATHLEEN W. GEIGER Thomas M. R. 220

RECORDED: 11/20/2000

Facsimile: 302-302-692-1949

PATENT REEL: 011304 FRAME: 0105