

FRALEY ROBERT T  
 Form 4  
 September 02, 2010

**FORM 4**

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
 Washington, D.C. 20549**

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
**FRALEY ROBERT T**

2. Issuer Name and Ticker or Trading Symbol  
**MONSANTO CO /NEW/ [MON]**

5. Relationship of Reporting Person(s) to Issuer  
 (Check all applicable)

(Last) (First) (Middle)  
**800 N. LINDBERGH BLVD.**  
 (Street)

3. Date of Earliest Transaction (Month/Day/Year)  
**08/31/2010**

\_\_\_\_ Director \_\_\_\_\_ 10% Owner  
 Officer (give title below) \_\_\_\_\_ Other (specify below)  
**EVP, Chief Technology Officer**

**ST. LOUIS, MO 63167**

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)  
 Form filed by One Reporting Person  
 Form filed by More than One Reporting Person

(City) (State) (Zip)

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Execution Date, if any (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price
Common Stock	07/26/2010		G	V	1,350	D	\$ 0
Common Stock	08/31/2010		F		5,582 (2)	D	\$ 52.65
Common Stock					27,559	I	By 2003 GRAT
Common Stock					0	I	By 2008 GRAT II
Common Stock					4,297	I	By 2009 GRAT I

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Common Stock	10,000	I	By 2010 GRAT I
Common Stock	10,000	I	By 2010 GRAT II
Common Stock	3,906	I	By Children's Trusts
Common Stock	10,062	I	By 401(k)

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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(9-02)

**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned**  
(e.g., puts, calls, warrants, options, convertible securities)

1. Title of Derivative Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Transaction Date (Month/Day/Year)	3A. Deemed Execution Date, if any (Month/Day/Year)	4. Transaction Code (Instr. 8)	5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5)	6. Date Exercisable and Expiration Date (Month/Day/Year)	7. Title and Amount of Underlying Securities (Instr. 3 and 4)	8. Price of Derivative Security (Instr. 5)	9. Number of Derivative Securities Owned Following Transaction (Instr. 5)
				Code	V (A) (D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares

## Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
FRALEY ROBERT T 800 N. LINDBERGH BLVD. ST. LOUIS, MO 63167			EVP, Chief Technology Officer	

## Signatures

Jennifer L. Woods,  
Attorney-in-Fact

09/02/2010

Signature of Reporting Person

Date

## Explanation of Responses:

- \* If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).
- \*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).
- (1) Includes 6,003 shares previously owned indirectly through the 2008 GRAT II and 5,703 shares previously owned indirectly through the 2009 GRAT I and excludes 10,000 shares transferred to the 2010 GRAT I and 10,000 shares transferred to the 2010 GRAT II.
- (2) On August 31, 2010, 14,360 restricted stock units became fully vested for which taxes became due and payable. 5,582 restricted stock units were used for the payment of these taxes.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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