

Fields Janice L
 Form 4
 September 03, 2010

FORM 4

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

OMB APPROVAL

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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 *
 Fields Janice L

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

ST. LOUIS, MO 63167

(City) (State) (Zip)

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

3. Date of Earliest Transaction
 (Month/Day/Year)
 09/01/2010

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

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director 10% Owner
 Officer (give title below) Other (specify below)

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

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 Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|
| | | | Code | V | Amount (A) or (D) Price | | |
| Common Stock | 09/01/2010 | | A | | 3,612 (1) \$ 53.99 | 9,664 | D |

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

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SEC 1474 (9-02)

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

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| 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 Beneficially (Instr. 5) |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|--|
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|--|

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|--------------------------------|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |

| | | | | |
|--|--|---|--|--|
| Fields Janice L 800 N. LINDBERGH BLVD. ST. LOUIS, MO 63167 | | X | | |
|--|--|---|--|--|

Signatures

| | |
|--|------------|
| Jennifer L. Woods, Attorney-in-Fact | 09/03/2010 |
|--|------------|

 **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) Represents shares of deferred common stock deliverable upon termination as a director under the Monsanto Company Non-Employee Director Equity Incentive Compensation Plan. Shares of deferred stock are credited in the form of hypothetical shares to a stock unit account in installments on the last day of each plan month during the director's term and for the payment of dividends. Shares of deferred stock not credited to the stock unit account because of termination as a director before the end of the director's term are forfeited.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.