

ITEM 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers

On December 20, 2010, Frank V. AtLee III resigned from the Monsanto Company Board of Directors. Mr. AtLee has not advised the Company of any disagreement with the Company on any matter relating to its operations, policies or practices. A press release regarding this matter is attached hereto as Exhibit 99.

ITEM 9.01 Financial Statements and Exhibits

(d) Exhibits. The following document is filed as an exhibit to this report:

Exhibit 99 Press Release dated December 21, 2010

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: December 22, 2010

MONSANTO COMPANY

| | |
|--------|-----------------------|
| By: | /s/ Jennifer L. Woods |
| Name: | Jennifer L. Woods |
| Title: | Assistant Secretary |

EXHIBIT INDEX

| Exhibit Number | Description of Exhibit |
|----------------|---------------------------------------|
| 99 | Press Release dated December 21, 2010 |