

MONSANTO COMPANY
AMENDED AND RESTATED BY-LAWS
("By-Laws")

As adopted August 23, 2000

Offices

1. Registered

The name of the registered agent of the Company is The Corporation Trust Company and the registered office of the Company shall be located in the City of Wilmington, County of New Castle, State of Delaware.

2. Other

The Company shall have its General Offices in the County of St. Louis, State of Missouri, and may also have offices at such other places both within or without the State of Delaware as the Board of Directors may from time to time designate or the business of the Company may require.

Stockholders' Meetings

3. Annual Meeting

An annual meeting of stockholders shall be held on such day and at such time as may be designated by the Board of Directors for the purpose of electing Directors and for the transaction of such other business as properly may come before such meeting. Any previously scheduled annual meeting of the stockholders may be postponed by resolution of the Board of Directors upon public notice given on or prior to the date previously scheduled for such annual meeting of stockholders.

4. Business to be Conducted at Annual Meeting

(a) At an annual meeting of stockholders, only such business shall be conducted as shall have been brought before the meeting (i) pursuant to the Company's notice of the meeting, (ii) by or at the direction of the Board of Directors or (iii) by any stockholder of the Company who is a stockholder of record at the time of giving of the notice provided for in this By-Law, who shall be entitled to vote at such meeting and who shall have complied with the notice procedures set forth in this By-Law.

(b) For business to be properly brought before an annual meeting by a stockholder pursuant to Section (a)(iii) of this By-Law, notice in writing must be delivered or mailed to the Secretary and received at the General Offices of the Company, not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the meeting is advanced by more

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than 30 days or delayed by more than 60 days from such anniversary date, notice by the stockholder must be received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the tenth day following the day on which public announcement of the date of the annual meeting is first made. Such stockholder's notice shall set forth as to each matter the stockholder proposes to bring before the annual meeting (i) a brief description of the business to be brought before the annual meeting and the reasons for conducting such business at such meeting; (ii) the name and address, as they appear on the Company's books, of the stockholder proposing such business, and the name and address of the beneficial owner, if any, on whose behalf the proposal is made; (iii) the class and number of shares of the Company's stock which are beneficially owned by the stockholder, and by the beneficial owner, if any, on whose behalf the proposal is made; and (iv) any material interest of the stockholder, and of the beneficial owner, if any, on whose behalf the proposal is made, in such business. For purposes of these By-Laws, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable news service or in a document publicly filed by the Company with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

(c) Notwithstanding anything in these By-Laws to the contrary, no business shall be conducted at an annual meeting except in accordance with the procedures set forth in this By-Law. The chairman of the meeting may, if the facts warrant, determine that the business was not properly brought before the meeting in accordance with the provisions of this By-Law; and if the chairman should so determine, the chairman shall so declare to the meeting, and any such business not properly brought before the meeting shall not be transacted. Notwithstanding the foregoing provisions of this By-Law, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this By-Law. Nothing in this By-Law shall be deemed to affect any rights of stockholders to request inclusion of proposals in the Company's proxy statement pursuant to Rule 14a-8 under the Exchange Act. The provisions of this Section 4 shall also govern what constitutes timely notice for purposes of Rule 14a-4(c) of the Exchange Act.

5. Special Meetings

Special meetings of stockholders, unless otherwise provided by the law of Delaware, may be called pursuant to resolution of the Board of Directors or, until such time as Pharmacia Corporation and its affiliates cease to beneficially own 50 percent or more of the total voting power of the outstanding shares of all classes of capital stock entitled to vote generally in the election of Directors of the Company (the "Pharmacia Required Percentage"), by Pharmacia Corporation. Such person calling the meeting shall have the sole right to determine the proper purpose or purposes of such meeting. Business transacted at a special meeting of stockholders shall be confined to the purpose or purposes of the meeting as stated in the notice of such meeting. Any previously scheduled special meeting of the stockholders may be postponed by resolution of the Board of Directors upon notice by public announcement given on or prior to the date previously scheduled for such special meeting of stockholders.

6. Place of Meetings

All meetings of stockholders shall be held at the General Offices of the Company in the County of St. Louis, State of Missouri, unless otherwise determined by resolution of the Board of Directors.

7. Notice of Meetings

Except as otherwise required by the law of Delaware, notice of each meeting of the stockholders, whether annual or special, shall, at least ten days but not more than sixty days before the date of the meeting, be given to each stockholder of record entitled to vote at the meeting by mailing such notice in the United States mail, postage prepaid, addressed to such stockholder at such stockholder's address as the same appears on the records of the Company. Such notice shall state the place, date and hour of the meeting, and in the case of a special meeting, shall also state the purpose or purposes thereof.

8. Nominations of Directors

(a) Only persons who are nominated in accordance with the procedures set forth in these By-Laws shall be eligible for election as Directors. Nominations of persons for election to the Board of Directors may be made at a meeting of stockholders (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the Company who is a stockholder of record at the time of giving of the notice provided for in this By-Law, who shall be entitled to vote for the election of Directors at the meeting and who complies with the notice procedures set forth in this By-Law.

(b) Nominations by stockholders shall be made pursuant to notice in writing, delivered or mailed to the Secretary and received at the principal offices of the Company (i) in the case of an annual meeting, not less than 90 days nor more than 120 days prior to the first anniversary of the preceding year's annual meeting, provided, however, that in the event that the date of the meeting is advanced by more than 30 days or delayed by more than 60 days from such anniversary date, notice by the stockholder must be received not earlier than the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the tenth day following the day on which public announcement of the date of the meeting is first made; or (ii) in the case of a special meeting at which Directors are to be elected, not earlier than the 120th day prior to such special meeting and not later than the close of business on the later of the 90th day prior to such special meeting or the tenth day following the day on which public announcement of the date of the meeting and of the nominees proposed by the Board of Directors to be elected at such meeting is first made. In the case of a special meeting of stockholders at which Directors are to be elected, stockholders may nominate a person or persons (as the case may be) for election only to such position(s) as are specified in the Company's notice of meeting as being up for election at such meeting. Such stockholder's notice shall set forth (i) as to each person whom the stockholder proposes to nominate for election or reelection as a Director, all information relating to such person that would be required to be disclosed in solicitations of proxies for election of Directors, or is otherwise required, in each case pursuant to Regulation 14A under the Exchange Act (including such person's written

consent to being named as a nominee and to serving as a Director if elected); (ii) as to the stockholder giving the notice, the name and address, as they appear on the Company's books, of such stockholder and the class and number of shares of the Company's stock which are beneficially owned by such stockholder; and (iii) as to any beneficial owner on whose behalf the nomination is made, the name and address of such person and the class and number of shares of the Company's stock which are beneficially owned by such person. At the request of the Board of Directors, any person nominated by the Board of Directors for election as a Director shall furnish to the Secretary that information required to be set forth in a stockholder's notice of nomination which pertains to the nominee. Notwithstanding anything in this By-Law to the contrary, in the event that the number of Directors to be elected to the Board of Directors of the Company is increased and there is no public statement naming all the nominees for Director or specifying the size of the increased Board of Directors made by the Company at least 100 days prior to the first anniversary of the preceding year's annual meeting, a stockholder's notice required by this By-Law shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be delivered to the Secretary at the principal offices of the Company not later than the close of business on the 10th day following the day on which such public announcement is first made by the Company.

(c) No person shall be eligible for election as a Director of the Company unless nominated in accordance with the procedures set forth in these By-Laws. The chairman of the meeting may, if the facts warrant, determine that a nomination was not made in accordance with the procedures prescribed in this By-Law; and if the chairman should so determine, the chairman shall so declare to the meeting, and the defective nomination shall be disregarded. Notwithstanding the foregoing provisions of this By-Law, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this By-Law.

9. List of Stockholders

(a) The Secretary of the Company shall prepare, at least ten days before each meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, during ordinary business hours, for a period of at least ten days prior to the meeting, either at a place within the city where the meeting is to be held, which place shall be specified in the notice of the meeting, or, if not so specified, at the place where the meeting is to be held. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present.

(b) The stock ledger of the Company shall be the only evidence as to the identity of the stockholders entitled (i) to vote in person or by proxy at any meeting of stockholders, or (ii) to exercise the rights in accordance with Delaware law to examine the stock ledger, the list required by this By-Law or the books and records of the Company, or for any other purpose permitted under Delaware law.

10. Quorum

The holders of a majority of the voting power of the shares of capital stock issued and outstanding and entitled to vote thereat, present in person or represented by proxy, shall constitute a quorum for the transaction of any business at all meetings of the stockholders, except as otherwise provided by the law of Delaware, by the Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation") or by these By-Laws. The stockholders present at any duly organized meeting may continue to transact business until adjournment, notwithstanding the withdrawal of sufficient stockholders to render the remaining stockholders less than a quorum. Whether or not a quorum is present, either the chairman of the meeting or the holders of a majority of the voting power of the shares of capital stock entitled to vote thereat, present in person or by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting. If the adjournment is for more than thirty days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. At such adjourned meeting at which the requisite amount of voting stock shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally noticed.

11. Voting and Required Vote

Subject to the provisions of the Certificate of Incorporation, each stockholder shall, at every meeting of stockholders, be entitled to one vote for each share of capital stock held by such stockholder. Subject to the provisions of the Certificate of Incorporation and Delaware law, Directors shall be chosen by the vote of a plurality of the votes cast by the holders of the shares present in person or represented by proxy at the meeting; and all other questions shall be determined by the affirmative vote of the holders of a majority of the voting power of the shares present in person or represented by proxy at the meeting. In all matters, votes cast in accordance with any method adopted by the Company shall be valid so long as such method is permitted under Delaware law.

12. Proxies

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy, in any manner permitted by law. No proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period.

13. Inspectors of Election; Polls

Before each meeting of stockholders, the Chairman of the Board, the President or another officer of the Company designated by resolution of the Board of Directors shall appoint one or more inspectors of election for the meeting and may appoint one or more inspectors to replace any inspector unable to act. If any of the inspectors appointed shall fail to attend, or refuse or be unable to serve, substitutes shall be appointed by the chairman of the meeting. Each inspector shall have such duties as are provided by law, and shall take and sign an oath faithfully

to execute the duties of inspector with strict impartiality and according to the best of such person's ability. The chairman of the meeting shall fix and announce at the meeting the date and time of the opening and closing of the polls for each matter upon which the stockholders will vote at the meeting.

14. Organization

The Chairman of the Board of Directors, or in the Chairman's absence, (i) the President, if a member of the Board of Directors, (ii) one of the Vice Chairmen of the Board who is a member of the Board of Directors, if any, in such order as may be designated by the Chairman of the Board, in that order, or (iii) in the absence of each of them, a chairman chosen by a majority of the Directors present, shall act as chairman of the meetings of the stockholders. The order of business and the procedure at any meeting of stockholders shall be determined by the chairman of the meeting.

15. Stockholder Action by Written Consent

(a) Until such time as Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, any action required or permitted to be taken by the stockholders of the Company may be effected, without prior notice and without a vote, if a consent or consents in writing, setting forth the action so taken shall be signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote thereon were present and voted.

(b) At such time as Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, any action required or permitted to be taken by the stockholders of the Company must be effected at a duly called annual or special meeting of stockholders of the Company and may not be effected by any consent in writing in lieu of a meeting of such stockholders.

Board of Directors

16. General Powers, Number, Term of Office

(a) The business of the Company shall be managed under the direction of its Board of Directors. Subject to the rights of the holders of any series of preferred stock, par value \$0.01 per share, of the Company ("Preferred Stock") to elect additional Directors under specified circumstances, the number of Directors of the Company which shall constitute the whole Board shall be not less than five nor more than 20. The exact number of Directors within the minimum and maximum limitation specified in the preceding sentence shall be fixed from time to time exclusively by resolution of a majority of the whole Board.

(b) At the first annual meeting of stockholders (the "First Meeting") following the time, if any, when Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, the Directors, other than those who may be elected by the

holders of any outstanding series of Preferred Stock or any other series or class of stock as set forth in the Certificate of Incorporation, shall be divided into three classes, as nearly equal in number as possible and designated Class I, Class II and Class III. Class I shall be initially elected for a term expiring at the first annual meeting of stockholders following the First Meeting, Class II shall be initially elected for a term expiring at the second annual meeting of stockholders following the First Meeting, and Class III shall be initially elected for a term expiring at the third annual meeting of stockholders following the First Meeting. Members of each class shall hold office until their successors are elected and qualified. At each succeeding annual meeting of the stockholders of the Company, the successors of the class of Directors whose term expires at that meeting shall be elected for a term expiring at the annual meeting of stockholders held in the third year following the year of their election. In case of any increase or decrease, from time to time, in the number of Directors, other than those who may be elected by the holders of any outstanding series of Preferred Stock or any other series or class of stock as set forth in the Certificate of Incorporation, the number of Directors in each class shall be apportioned as nearly equal as possible. Directors need not be stockholders of the Company or residents of the State of Delaware.

17. Vacancies

Subject to the rights, if any, of the holders of any outstanding series of Preferred Stock, newly created directorships resulting from any increase in the authorized number of Directors or any vacancies in the Board resulting from death, resignation, retirement, disqualification, removal from office or other cause shall be filled solely by the affirmative vote of a majority of the remaining Directors then in office, even though less than a quorum of the Board. Any Director so chosen shall hold office until his or her successor shall be elected and qualified and, if the Board at such time is classified, until the next election of the class for which such Directors shall have been chosen. No decrease in the number of Directors shall shorten the term of any incumbent Director.

18. Regular Meetings

The Board of Directors by resolution may provide for the holding of regular meetings and may fix the times and places at which such meetings shall be held. Notice of regular meetings shall not be required, provided that whenever the time or place of regular meetings shall be fixed or changed, notice of such action shall be given promptly to each Director, as provided in Section 19 below, who was not present at the meeting at which such action was taken.

19. Special Meetings

Special meetings of the Board of Directors shall be held whenever called by the Chairman of the Board of Directors or the President, or in the absence of each of them, by any Vice Chairman of the Board, or by the Secretary at the written request of a majority of the Directors.

20. Notices

Notice of any special meeting of the Board of Directors shall be addressed to each Director at such Director's residence or business address and shall be sent to such Director by mail, electronic mail, telecopier, telegram or telex or telephoned or delivered to such Director personally. If such notice is sent by mail, it shall be sent not later than three days before the day on which the meeting is to be held. If such notice is sent by electronic mail, telecopier, telegram or telex, it shall be sent not later than 12 hours before the time at which the meeting is to be held. If such notice is telephoned or delivered personally, it shall be received not later than 12 hours before the time at which the meeting is to be held. Such notice shall state the time, place and purpose or purposes of the meeting.

21. Quorum

One-third of the total number of Directors constituting the whole Board, but not less than two, shall constitute a quorum for the transaction of business at any meeting of the Board of Directors, but if less than such required number of Directors for a quorum is present at a meeting, a majority of the Directors present may adjourn the meeting from time to time without further notice. Except as otherwise specifically provided by the law of Delaware, the Certificate of Incorporation or these By-Laws, the act of a majority of the Directors present at a meeting at which a quorum is present shall be the act of the Board of Directors.

22. Supermajority Approval

Until such time as Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, the unanimous written consent, or the affirmative vote of Directors constituting at least 80 percent of the total number of Directors constituting the whole Board shall be required to authorize the following matters: (i) transactions, capital expenditures, additional debt or other non-ordinary course financial commitments including litigation settlements by the Company, valued at \$100 million or more, other than as specifically approved as part of the Company's annual operating or capital budgets; (ii) any issuance or repurchase of equity securities or other equity interests of the Company, except pursuant to the exercise of employee stock options or stock appreciation rights or under compensation plans approved by the Company's Board of Directors, unless, after giving effect to such proposed issuance or repurchase, the aggregate amount of equity securities or other equity interests issued or repurchased, respectively, since the initial public offering of the Company's common stock without the approval required by this By-Law would not exceed one percent of the Company's common stock outstanding on the date of such proposed issuance or repurchase; (iii) approval of the Company's annual operating and capital budgets and annual strategic plan; (iv) selection, compensation and removal of the Company's Chief Executive Officer; and (v) any change in the size of the Company's Board of Directors.

23. Organization

At each meeting of the Board of Directors, the Chairman of the Board or, in the Chairman's absence, (i) the President, if a member of the Board of Directors, (ii) one of the Vice

Chairmen of the Board who is a member of the Board of Directors, if any, in such order as may be designated by the Chairman of the Board, in that order, or (iii) in the absence of each of them, a chairman chosen by a majority of the Directors present, shall act as chairman of the meeting, and the Secretary or, in the Secretary's absence, an Assistant Secretary or any employee of the Company appointed by the chairman of the meeting, shall act as secretary of the meeting.

24. Resignations

Any Director may resign at any time by giving written notice to the Chairman of the Board, the President or the Secretary of the Company. Such resignation shall take effect upon receipt thereof or at any later time specified therein; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

25. Removal

Subject to the rights of the holders of any outstanding series of Preferred Stock or any other series or class of stock as set forth in the Certificate of Incorporation to elect additional Directors under specified circumstances, any Director or the entire Board may be removed from office at any time with or without cause, but only by the affirmative vote of the holders of at least 70 percent of the voting power of the stock of the Company entitled to vote, voting together as a single class; provided, however, that at such time as Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, a Director may be removed from office only for cause and only by the affirmative vote of the holders of at least 70 percent of the voting power of the outstanding stock of the Company entitled to vote, voting together as a single class.

26. Action Without a Meeting

Unless otherwise restricted by the Certificate of Incorporation or these By-Laws, any action required or permitted to be taken at any meeting of the Board of Directors or of any committee thereof may be taken without a meeting if all members of the Board or committee, as the case may be, consent thereto in writing, and the writing or writings are filed with the minutes of proceedings of the Board or committee.

27. Location of Books

Except as otherwise provided by resolution of the Board of Directors and subject to the law of Delaware, the books of the Company may be kept at the General Offices of the Company and at such other places as may be necessary or convenient for the business of the Company.

28. Dividends

Subject to the provisions of the Certificate of Incorporation and the law of Delaware, dividends upon the capital stock of the Company may be declared by the Board of

Directors at any regular or special meeting. Dividends may be paid in cash, in property, or in shares of the Company's capital stock.

29. Compensation of Directors

Directors shall receive such compensation and benefits as may be determined by resolution of the Board for their services as members of the Board and committees. Directors shall also be reimbursed for their expenses of attending Board and committee meetings. Nothing contained herein shall preclude any Director from serving the Company in any other capacity and receiving compensation therefor.

30. Additional Powers

In addition to the powers and authorities by these By-Laws expressly conferred upon it, the Board of Directors may exercise all such powers of the Company and do all such lawful acts and things as are not by statute or by the Amended and Restated Certificate of Incorporation or by these By-Laws directed or required to be exercised or done by the stockholders.

Committees of Directors

31. Designation, Power, Alternate Members

The Board of Directors may, by resolution or resolutions passed by a majority of the whole Board, designate an Executive Committee and one or more additional committees, each committee to consist of two or more of the Directors of the Company. Any such committee, to the extent provided in said resolution or resolutions and subject to any limitations provided by law, shall have and may exercise the powers of the Board of Directors in the management of the business and affairs of the Company. The Board of Directors may designate one or more Directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. The term of office of the members of each committee shall be as fixed from time to time by the Board; provided, however, that any committee member who ceases to be a member of the Board shall automatically cease to be a committee member.

32. Quorum, Manner of Acting

At any meeting of a committee, the presence of one-third, but not less than two, of its members then in office shall constitute a quorum for the transaction of business; and the act of a majority of the members present at a meeting at which a quorum is present shall be the act of the committee; provided, however, that in the event that any member or members of the committee is or are in any way interested in or connected with any other party to a contract or transaction being approved at such meeting, or are themselves parties to such contract or transaction, the act of a majority of the members present who are not so interested or connected, or are not such parties, shall be the act of the committee. Each committee may provide for the holding of regular meetings, make provision for the calling of special meetings and, except as

otherwise provided in these By-Laws or by resolution of the Board of Directors, make rules for the conduct of its business.

33. Minutes

The committees shall keep minutes of their proceedings and report the same to the Board of Directors when required; but failure to keep such minutes shall not affect the validity of any acts of the committee or committees.

Advisory Directors

34. Advisory Directors

The Board of Directors may, by resolution adopted by a majority of the whole Board, appoint such number of senior executives of the Company as Advisory Directors as the Board may from time to time determine. The Advisory Directors shall have such advisory responsibilities as the Chairman of the Board may designate and the term of office of such Advisory Directors shall be as fixed by the Board.

Officers

35. Designation

The officers of the Company shall be a Chairman of the Board, a Chief Executive Officer, a President, a Chief Financial Officer, one or more Vice Presidents, a Secretary, a Treasurer and a Controller. The Board of Directors may also elect one or more Vice Chairmen of the Board, one or more Vice Chairmen of the Company, one or more Executive Vice Presidents, Senior Vice Presidents, Group Vice Presidents, Deputy and Assistant Secretaries, Deputy and Assistant Treasurers, Deputy and Assistant Controllers and such other officers as it shall deem necessary. Any number of offices may be held by the same person. The Chairman of the Board of Directors shall be chosen from among the Directors.

36. Election and Term

At least annually, the Board of Directors of the Company shall elect the officers of the Company and at any time thereafter the Board may elect additional officers of the Company and each such officer shall hold office until the officer's successor is elected and qualified or until the officer's earlier death, resignation, termination of employment or removal.

37. Removal

Any officer shall be subject to removal or suspension at any time, for or without cause, by the affirmative vote of a majority of the whole Board of Directors.

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38. Resignations

Any officer may resign at any time by giving written notice to the Chairman of the Board, the President or to the Secretary. Such resignation shall take effect upon receipt thereof or at any later time specified therein; and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective.

39. Vacancies

A vacancy in any office because of death, resignation, removal or any other cause may be filled for the unexpired portion of the term by the Board of Directors.

40. Chairman of the Board

The Chairman of the Board shall preside at all meetings of the stockholders and of the Board of Directors, except as may be otherwise required under the law of Delaware. The Chairman shall act in an advisory capacity with respect to matters of policy and other matters of importance pertaining to the affairs of the Company. The Chairman, alone or with the President, one or more of the Vice Chairmen of the Board, and/or the Secretary shall sign and send out reports and other messages which are to be sent to stockholders from time to time. The Chairman shall also perform such other duties as may be assigned to the Chairman by these By-Laws or the Board of Directors.

41. Chief Executive Officer

The Chief Executive Officer shall have the general and active management and supervision of the business of the Company. The Chief Executive Officer shall see that all orders and resolutions of the Board of Directors are carried into effect. The Chief Executive Officer shall also perform such other duties as may be assigned to the Chief Executive Officer by these By-Laws or the Board of Directors. The Chief Executive Officer shall designate who shall perform the duties of the Chief Executive Officer in the Chief Executive Officer's absence.

42. President

The President, if a member of the Board of Directors, shall, in the absence of the Chairman of the Board, preside at all meetings of the stockholders and of the Board of Directors. The President shall perform such other duties as may be assigned to the President by these By-Laws, the Board of Directors or the Chief Executive Officer.

43. Vice Chairmen of the Board; Vice Chairmen

The Vice Chairmen of the Board, if a member of the Board of Directors, shall, in the absence of the Chairman of the Board and the President, and in such order as may be designated by the Chairman of the Board, preside at all meetings of the stockholders and of the Board of Directors. The Vice Chairmen of the Board and the Vice Chairmen shall perform such

other duties as may be assigned to them by these By-Laws, the Board of Directors or the Chief Executive Officer.

44. Chief Financial Officer

The Chief Financial Officer shall act in an executive financial capacity. The Chief Financial Officer shall assist the Chairman of the Board and the President in the general supervision of the Company's financial policies and affairs.

45. Executive, Senior, Group and other Vice Presidents

Each Executive Vice President, Senior Vice President, Group Vice President and each other Vice President shall perform the duties and functions and exercise the powers assigned to such officer by the Board of Directors or the Chief Executive Officer.

46. Secretary

The Secretary shall attend all meetings of the Board of Directors and of the stockholders and record all votes and the minutes of all proceedings in a book to be kept for that purpose. The Secretary shall give, or cause to be given, notice of all meetings of the stockholders and special meetings of the Board of Directors and, when appropriate, shall cause the corporate seal to be affixed to any instruments executed on behalf of the Company. The Secretary shall also perform all duties incident to the office of Secretary and such other duties as may be assigned to the Secretary by these By-Laws, the Board of Directors, the Chairman of the Board or the Chief Executive Officer.

47. Assistant Secretaries

The Assistant Secretaries shall, during the absence of the Secretary, perform the duties and functions and exercise the powers of the Secretary. Each Assistant Secretary shall perform such other duties as may be assigned to such Assistant Secretary by the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the Secretary.

48. Treasurer

The Treasurer shall have the custody of the funds and securities of the Company and shall deposit them in the name and to the credit of the Company in such depositories as may be designated by the Board of Directors or by any officer or officers authorized by the Board of Directors to designate such depositories; disburse funds of the Company when properly authorized by vouchers prepared and approved by the Controller; and invest funds of the Company when authorized by the Board of Directors or a committee thereof. The Treasurer shall render to the Board of Directors, the Chief Executive Officer, or the Chief Financial Officer, whenever requested, an account of all transactions as Treasurer and shall also perform all duties incident to the office of Treasurer and such other duties as may be assigned to the Treasurer by these Amended and Restated By-Laws, the Board of Directors, the Chief Executive Officer, or the Chief Financial Officer.

49. Assistant Treasurers

The Assistant Treasurers shall, during the absence of the Treasurer, perform the duties and functions and exercise the powers of the Treasurer. Each Assistant Treasurer shall perform such other duties as may be assigned to the Assistant Treasurer by the Board of Directors, the Chief Executive Officer, the Chief Financial Officer or the Treasurer.

50. Controller

The Controller shall serve as the principal accounting officer of the Company and shall keep full and accurate account of receipts and disbursements in books of the Company and render to the Board of Directors, the Chief Executive Officer, or the Chief Financial Officer, whenever requested, an account of all transactions as Controller and of the financial condition of the Company. The Controller shall also perform all duties incident to the office of Controller and such other duties as may be assigned to the Controller by these By-Laws, the Board of Directors, the Chief Executive Officer, or the Chief Financial Officer.

51. Assistant Controllers

The Assistant Controllers shall, during the absence of the Controller, perform the duties and functions and exercise the powers of the Controller. Each Assistant Controller shall perform such other duties as may be assigned to such officer by the Board of Directors, the Chief Executive Officer, the Chief Financial Officer or the Controller.

52. Other Officers

The Board of Directors may appoint such other officers as it shall deem necessary, who shall hold their offices for such terms and shall exercise such powers and perform such duties as shall be determined from time to time by the Board.

53. Additional Powers

In addition to the powers and authorities by these By-Laws expressly conferred upon them, any officer, assistant officer or deputy officer, or any of their delegates, may execute, or grant a power of attorney for others to execute, any documents relating to permits or registrations from governmental agencies or allowing the Company to obtain rights from or otherwise interact with such agencies in the normal course of business.

Company Checks, Drafts and Proxies

54. Checks, Drafts

All checks, drafts or other orders for the payment of money by the Company shall be signed by such person or persons as from time to time may be designated by the Board of Directors or by any officer or officers authorized by the Board of Directors to designate such

signers; and the Board of Directors or such officer or officers may determine that the signature of any such authorized signer may be facsimile.

55. Proxies

Except as otherwise provided by resolution of the Board of Directors, the Chairman of the Board, the President, any Vice Chairman of the Board, the Chief Financial Officer, any Vice President, the Treasurer and any Assistant Treasurer, the Controller and any Assistant Controller, the Secretary and any Assistant Secretary of the Company, shall each have full power and authority, in behalf of the Company, to exercise any and all rights of the Company with respect to any meeting of stockholders of any corporation in which the Company holds stock, including the execution and delivery of proxies therefor, and to consent in writing to action by such corporation without a meeting.

Capital Stock

56. Stock Certificates and Transfers

The interest of each stockholder of the Company shall be evidenced by certificates or by registration in book-entry accounts without certificates for shares of stock in such form as the appropriate officers of the Company may from time to time prescribe. The shares of the stock of the Company shall be transferred on the books of the Company by the holder thereof in person or by his attorney, upon surrender for cancellation of certificates for the same number of shares, with an assignment and power of transfer endorsed thereon or attached thereto, duly executed, with such proof of the authenticity of the transfer and payment of any applicable transfer taxes as the Company or its agents may reasonably require or by appropriate book-entry procedures.

Certificates of stock shall be signed by, or in the name of the Company by, the Chairman of the Board, the President, the Chief Financial Officer, any Vice Chairman of the Board, any Executive Vice President, any Senior Vice President, any Group Vice President or any other Vice President, and by the Secretary or any Assistant Secretary of the Company, certifying the number of shares owned by such holder in the Company. Any of or all the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Company with the same effect as if such person were such officer, transfer agent or registrar at the date of issue.

57. Record Ownership

The Company shall be entitled to treat the person in whose name any share, right or option is registered as the owner thereof, for all purposes, and shall not be bound to recognize any equitable or other claim to or interest in such share, right or option on the part of any other person, whether or not the Company shall have notice thereof, except as otherwise provided by the law of Delaware.

58. Record Dates

In order that the Company may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof, or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date, which shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors and which shall not be more than sixty nor less than ten days before the date of such meeting, nor more than sixty days prior to any other action.

59. Lost, Stolen or Destroyed Certificates

The Board of Directors may authorize a new certificate or certificates to be issued in place of any certificate or certificates theretofore issued by the Company alleged to have been lost, stolen or destroyed, upon the making of an affidavit of the fact by the person claiming the certificate of stock to be lost, stolen or destroyed. When authorizing such issue of a new certificate or certificates, the Board of Directors may, in its discretion and as a condition precedent to the issuance thereof, require the owner of such lost, stolen or destroyed certificate or certificates, or the owner's legal representative, to give the Company a bond sufficient to indemnify it against any claim that may be made against the Company on account of the alleged loss, theft or destruction of such certificate or the issuance of such new certificate.

60. Terms of Preferred Stock

The provisions of these By-Laws, including those pertaining to voting rights, election of Directors and calling of special meetings of stockholders, are subject to the terms, preferences, rights and privileges of any then outstanding class or series of Preferred Stock as set forth in the Certificate of Incorporation and in any resolutions of the Board of Directors providing for the issuance of such class or series of Preferred Stock; provided, however, that the provisions of any such Preferred Stock shall not affect or limit the authority of the Board of Directors to fix, from time to time, the number of Directors which shall constitute the whole Board as provided in Section 16 above, subject to the right of the holders of any class or series of Preferred Stock to elect additional Directors as and to the extent specifically provided by the provisions of such Preferred Stock.

Indemnification

61. Indemnification

(a) The Company shall indemnify and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended, any person who was or is made or is threatened to be made a party or is otherwise involved in any claim, action, suit, or proceeding, whether civil, criminal, administrative or investigative (a "proceeding") by reason of the fact that the person, or a person for whom he or she is the legal representative, is or was a Director or officer of the Company or is or was serving at the request of the Company as a

director, officer or fiduciary of another corporation or of a partnership, joint venture, trust, non-profit entity, or other enterprise, including service with respect to employee benefit plans, against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such person. The right to indemnification conferred in this By-Law shall be a contract right. Except as provided in paragraph (c) of this By-Law with respect to proceedings seeking to enforce rights to indemnification, the Company shall indemnify a person in connection with a proceeding initiated by such person or a claim made by such person against the Company only if such proceeding or claim was authorized by the Board of Directors of the Company.

(b) The Company shall pay the expenses incurred in defending any proceeding in advance of its final disposition, provided, however, that if and to the extent required by law the payment of expenses incurred by any person covered hereunder in advance of the final disposition of the proceeding shall be made only upon receipt of an undertaking by or on behalf of the affected person to repay all amounts advanced if it should ultimately be determined that such person is not entitled to be indemnified under this By-Law or otherwise.

(c) If a claim for indemnification or payment of expenses under this By-Law is not paid in full within thirty days, or such other period as might be provided pursuant to contract, after a written claim therefor has been received by the Company, the claimant may file suit to recover the unpaid amount of such claim or may seek whatever other remedy might be provided pursuant to contract. In any such action the Company shall have the burden of proving that the claimant was not entitled to the requested indemnification or payment of expenses under applicable law. If successful in whole or in part, claimant shall be entitled to be paid the expense of prosecuting such claim. Neither the failure of the Company (including its Directors, independent legal counsel or stockholders) to have made a determination prior to the commencement of such action that indemnification of the claimant is proper in the circumstances because the claimant has met the applicable standard of conduct set forth in the General Corporation Law of the State of Delaware, nor an actual determination by the Company (including its Directors, independent legal counsel or stockholders) that the claimant has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that the claimant has not met the applicable standard of conduct.

(d) Any determination regarding whether indemnification of any person is proper in the circumstances because such person has met the applicable standard of conduct set forth in the General Corporation Law of the State of Delaware shall be made by independent legal counsel selected by such person with the consent of the Company (which consent shall not unreasonably be withheld).

(e) The Company may, but shall not be required to, indemnify and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended, any person who was or is made or is threatened to be made a party or is otherwise involved in any claim, action, suit, or proceeding, whether civil, criminal, administrative or investigative (a "proceeding") by reason of the fact that the person, or a person for whom he or she is the legal representative, is or was an employee or agent of the Company or is or was

serving at the request of the Company as an employee or agent of another corporation or of a partnership, joint venture, trust, non-profit entity, or other enterprise, including service with respect to employee benefit plans, against all expense, liability and loss (including attorneys' fees, judgments, fines, ERISA excise taxes or penalties and amounts paid or to be paid in settlement) reasonably incurred or suffered by such person.

(f) The rights conferred on any person by this By-Law shall not be exclusive of any other rights which such person may have or hereafter acquire under any statute, provision of the Certificate of Incorporation, these By-Laws, agreement, vote of stockholders or disinterested Directors or otherwise.

(g) Any repeal or modification of the foregoing provisions of this By-Law shall not adversely affect any right or protection hereunder of any person with respect to any act or omission occurring prior to or at the time of such repeal or modification.

Miscellaneous

62. Corporate Seal

The seal of the Company shall be circular in form, containing the words "Monsanto Company" and the word "Delaware" on the circumference surrounding the word "Seal." Said seal may be used by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

63. Fiscal Year

The fiscal year of the Company shall begin on the first day of January in each year.

64. Auditors

The Board of Directors shall select certified public accountants to audit the books of account and other appropriate corporate records of the Company annually and at such other times as the Board shall determine by resolution.

65. Waiver of Notice

Whenever notice is required to be given pursuant to the law of Delaware, the Certificate of Incorporation or these By-Laws, a written waiver thereof, signed by the person entitled to notice, whether before or after the time stated therein, shall be deemed equivalent to notice. Attendance of a person at a meeting of stockholders or the Board of Directors or a committee thereof shall constitute a waiver of notice of such meeting, except when the stockholder or Director attends such meeting for the express purpose of objecting, at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders or the Board of Directors or committee thereof need be

specified in any written waiver of notice unless so required by the Certificate of Incorporation or by these By-Laws.

Amendment to By-Laws

66. Amendments

Notwithstanding any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any series of Preferred Stock of the Company required by law, the Certificate of Incorporation or any Preferred Stock designation, the affirmative vote of the holders of at least 70 percent of the voting power of all of the then-outstanding shares of the Company's voting stock, voting together as a single class, shall be required for the stockholders to amend or repeal the By-Laws or to adopt new By-Laws. The By-Laws may also be amended or repealed, and new By-Laws may be adopted, by (i) until such time as Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, the affirmative vote of at least 80 percent of the whole Board of Directors at any regular or special meeting of the Board of Directors, or (ii) at such time as Pharmacia Corporation and its affiliates cease to beneficially own the Pharmacia Required Percentage, the affirmative vote of a majority of the whole Board of Directors at any regular or special meeting of the Board of Directors.