CT- 2002-003

THE COMPETITION TRIBUNAL

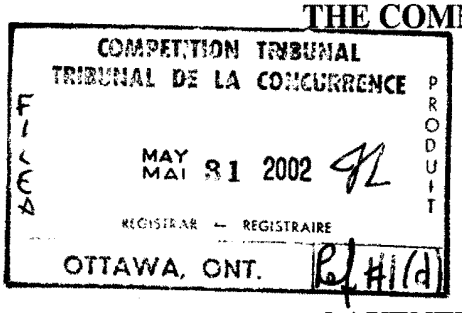
IN THE MATTER OF an application by the Commissioner of Competition for an Order pursuant to sections 92 and 105 of the *Competition Act*, R.S.C. 1985, c.C-34, as amended;

IN THE MATTER OF an application by the Commissioner of Competition for an Order pursuant to section 104 of the *Competition Act;*

AND IN THE MATTER OF the acquisition by Bayer AG of all of the shares of Aventis CropScience Holding S.A., constituting the agrochemical business of Aventis S.A. and, in Canada, the indirect acquisition by Bayer AG of all of the shares of Aventis CropScience Canada Co.

BETWEEN:

THE COMMISSIONER OF COMPETITION



Applicant

- and -

BAYER AG
and AVENTIS CROPSCIENCE HOLDING S.A.

Respondents

INDEX FOR THE STATEMENT OF GROUNDS AND MATERIAL FACTS

I. INTRODUCTION 2

II. THE PARTIES 3

A. The Applicant 3

B. The Respondents 3

III. THE ACQUISITION 5

IV. COMPETITIVE ANALYSIS 6

A. Summary 6

B. Overview of the Pesticide Industry 7

C. Agricultural Insecticides 9

(a) Relevant Market 9

(i) Product Market 9

(ii) Geographic Market 12

(b) Market Concentration 12

(c) Section 93 Factors 17

(i) Foreign Competition 17

(ii) Acceptable Substitutes 18

(iii) Removal of a Vigorous and Effective Competitor 19

(iv) Barriers to Entry 20

(v) Effective Remaining Competition 21

(vi) Change and Innovation 22

(d) Relief Sought 23

D. Seed Treatments 23

(a) Relevant Market 23

(i) Product Market 23

(ii) Geographic Market 25

(b) Market Concentration 26

(c) Section 93 Factors 32

(i) Foreign Competition 32

(ii) Acceptable Substitutes 33

(iii) Removal of a Vigorous and Effective Competitor 33

(iv) Barriers to Entry 34

(v) Effective Remaining Competition 34

(vi) Change and Innovation 34

(d) Relief Sought 35

E. Agricultural Herbicides 35

(a) Relevant Market 35

(i) Product Market 35

(ii) Geographic Market 38

(b) Market Concentration 38

(c) Section 93 Factors 42

(i) Foreign Competition 42

(ii) Acceptable Substitutes 42

(iii) Removal of a Vigorous and Effective Competitor 43

(iv) Barriers to Entry 44

(v) Effective Remaining Competition 44

(vi) Change and Innovation 45

(d) Relief Sought 45

F. Agricultural Fungicides 45

G. Professional-Use Products 46

V. CONCLUSION 46

CT- 2002-003

THE COMPETITION TRIBUNAL

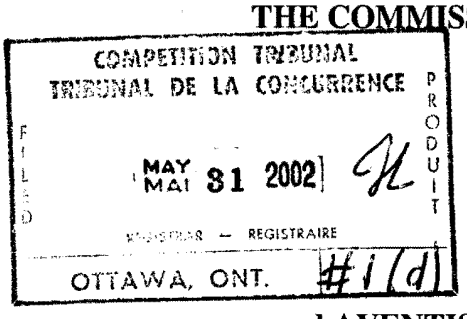
IN THE MATTER OF an application by the Commissioner of Competition for an Order pursuant to sections 92 and 105 of the *Competition Act*, R.S.C. 1985, c.C-34, as amended;

AND IN THE MATTER OF an application by the Commissioner of Competition for an Order pursuant to section 104 of the *Competition Act;*

AND IN THE MATTER OF the acquisition by Bayer AG of all of the shares of Aventis CropScience Holding S.A., constituting the agrochemical business of Aventis S.A. and, in Canada, the indirect acquisition by Bayer AG of all of the shares of Aventis CropScience Canada Co.

B E T W E E N :

THE COMMISSIONER OF COMPETITION



Applicant

- and -

BAYER AG
and AVENTIS CROPSCIENCE HOLDING S.A.

Respondents

STATEMENT OF GROUNDS AND MATERIAL FACTS

STATEMENT OF GROUNDS AND MATERIAL FACTS

I. INTRODUCTION

1. The Commissioner of Competition (the "Commissioner") brings this application for a Consent Order on the grounds that the acquisition by Bayer AG of all the shares of Aventis CropScience Holding S.A. (the "Acquisition"), is likely to lessen or prevent competition substantially in the provision of: insecticides for certain fruit and vegetable crops in Canada; seed treatments for canola in Canada; seed treatments for cereals in Canada; and, grassy weed herbicides for spring wheat in Western Canada. The Commissioner, with the consent of the Respondents, Bayer AG and Aventis CropScience Holding S.A., respectfully submits for approval a Draft Consent Order (the "DCO") which, if implemented, will eliminate the likely substantial lessening or prevention of competition found by the Commissioner.

2. The Commissioner alleges certain material facts and makes certain submissions in this Statement of Grounds and Material Facts. Bayer AG and Aventis CropScience Holding S.A. do not necessarily agree with all of the facts alleged but do not contest the facts or submissions herein for the purpose of this application and any proceeding initiated by the Commissioner relating to the DCO attached hereto at Tab 7, including any application to vary or rescind. Nothing in this application shall be taken as an admission now or in the future by Bayer AG, Aventis CropScience Holding S.A., or any of their affiliates, of any such facts or submissions.

II. THE PARTIES

A. The Applicant

3. The Applicant is the Commissioner appointed pursuant to section 7 of the *Competition Act,* R.S.C. 1985, c. C-34 (the "*Act*") and is the sole person authorized to make this application to the Competition Tribunal.

B. The Respondents

4. Bayer AG, a German Aktiengesellschaft, is an international, research-based group headquartered in Leverkusen, Germany with major business in health care, agriculture, polymers and specialty chemicals. In Canada, the majority of Bayer AG's activities are carried on through Bayer Inc., headquartered in Toronto, Ontario. The majority of the pesticide products sold by Bayer Inc. are formulated and packaged by Bayer Corporation, headquartered in Kansas City, Missouri (all collectively referred to hereinafter as "Bayer").

5. In Canada, Bayer has a 50% interest in Gustafson Partnership ("Gustafson"), a joint venture with Crompton Corporation. Gustafson Partnership has its head office in Calgary, Alberta. In the United States, each of Bayer and Crompton Corporation has a

50% interest in Gustafson LLC, a Delaware corporation. Bayer provides certain active ingredients used in Gustafson's production of insecticide and fungicide seed treatment products.

6. Aventis S.A., a French societe anonyme ("Aventis"), is a worldwide producer and distributor of prescription drugs, vaccines, therapeutic proteins as well as products related to crop production and protection, animal health and nutrition. Aventis' two main business groups are Aventis Pharma and Aventis Agriculture, both of which are corporations organized and existing under the laws of France. Aventis Agriculture is further comprised of the following: Aventis CropScience (crop protection and crop production); Aventis Animal Nutrition; and Merial (a 50% equity interest in the animal health business shared with Merck & Co.). Of these business groups, only Aventis CropScience, through the sale of all of the shares of Aventis CropScience Holding S.A. ("ACS") is involved in the Acquisition. Aventis CropScience Canada Co. ("ACS Canada"), is the Canadian subsidiary of ACS and is headquartered in Regina, Saskatchewan.

III. THE ACQUISITION

7. Pursuant to definitive stock purchase agreements, signed effective October 2, 2001, among Bayer, Aventis Agriculture and Schering Aktiengesellschaft ("Schering") and SCIC Holdings LLC ("SCIC"), Bayer intends to acquire all shares in ACS.

8. Currently, the shareholders of ACS are Aventis Agriculture, a wholly-owned subsidiary of Aventis (47.93%), Hoechst A.G., a 98% owned subsidiary of Aventis (28.07%), Schering (19.83%), and SCIC, a wholly-owned subsidiary of Schering (4.17%).

9. Following the Acquisition, Bayer's crop science activities will be organized as a separate legal entity to be named "Bayer CropScience".

10. In Canada, the Acquisition involves the indirect acquisition by Bayer of ACS Canada and its direct and/or indirect subsidiaries, as a result of the acquisition of the shares of ACS. The Acquisition is expected to close in June 2002.

IV. COMPETITIVE ANALYSIS

A. Summary

11. The Acquisition involves the purchase by Bayer of ACS' world-wide business of researching, developing, manufacturing and supplying crop protection and crop production products and related chemical products.

12. In Canada, the Acquisition involves the indirect acquisition by Bayer of ACS Canada's business activities which include the manufacture and supply of the following pesticides: insecticides; seed treatments; herbicides; fungicides; and professional-use pesticides.

13. Following an extensive review of the pesticide industry and wide consultation with industry participants and experts (industry and economic), the Commissioner has identified the following four relevant product markets in which the Acquisition would be likely to substantially lessen or prevent competition: (a) insecticides for certain fruit and vegetable crops in Canada; (b) seed treatments for canola in Canada; (c) seed treatments for cereals in Canada; and (d) grassy weed herbicides for spring wheat in Western Canada.

B. Overview of the Pesticide Industry

14. Over the past several years, the worldwide pesticide industry has become increasingly concentrated. Specifically, Dow AgroSciences purchased Rohm and Haas Company's agricultural business in 2001; Novartis Agribusiness merged with Zeneca Agrochemicals to form Syngenta AG in 2000; BASF AG acquired the Cyanamid agricultural products unit of American Home Products Corp. in 2000; and, Aventis was formed as a result of a merger between Rhone-Poulenc S.A. and Hoechst AG (AgrEvo) in 1999.

15. The research-based agricultural pesticide industry in Canada is dominated by Canadian affiliates of the seven remaining large multinational agricultural chemical companies: ACS Canada; Bayer, operating through its Canadian affiliate, Bayer Inc. ("Bayer Canada"); BASF Canada Inc. ("BASF"); Dow Agrosciences Canada Inc. ("Dow"); DuPont Canada Inc. ("DuPont"); Monsanto Canada Inc. ("Monsanto"); and Syngenta Crop Protection Canada Inc. ("Syngenta").

16. In addition to selling formulated products, pesticide companies research and develop new active ingredients. An "active ingredient" is the chemical in the formulated product that is responsible for the pesticidal effect on the targeted pest. The mode of action is the process by which the pesticide kills the pest. Once discovered, active ingredients are mixed with other products or substances to create formulated products that are safe for use on the targeted plants.

17. Active ingredients belong to chemical families or classes. Newer chemistries are attractive to growers because they typically offer higher efficacy rates, an ability to overcome resistance through the introduction of a new mode of action, lower application rates, and lower toxicity levels.

18. In Canada, pesticide companies must obtain regulatory approval of new active ingredients and formulated products before they can be manufactured and sold. All products designed to manage, destroy, attract or repel pests that are used, sold or imported into Canada are regulated by Health Canada's Pest Management Regulatory Agency (the "PMRA"), which is responsible for the administration and enforcement of the *Pest Control Products Act*, R.S.C. 1985, c. P-9.

19. Once registration by the PMRA is obtained, companies can sell products in Canada. These products may be formulated at manufacturing facilities in or outside of Canada. Active ingredients used in the formulated products may be proprietary to the manufacturer of the formulated products or sourced from third parties. Pursuant to licence agreements, the manufacturer is authorized to use another company's proprietary active ingredient. Under supply agreements, the manufacturer is supplied with another company's active ingredient.

Many active ingredients are also "generic" (ie: patents have expired), in which case they may be manufactured by the pesticide company itself, or under contract by a third party, without the requirement for a licence.

20. Agricultural pesticide companies generally distribute their products through several distributors or wholesaler/distributors throughout Canada. These distributors or wholesalers sell pesticides to retailers who sell to growers at the local level.

C. Agricultural Insecticides

(a) Relevant Market

(i) Product Market

21. Agricultural insecticides are designed to control insects that damage cultivated plants, especially food crops.

22. Growers choose from among agricultural insecticide alternatives based on: (1) efficacy with respect to particular crops; and (2) efficacy against particular target pests.

23. A particular active ingredient may be used (alone or with other active ingredients) in a number of insecticide products. In addition, a particular insecticide product may be registered by the PMRA for a number of crop uses and for use against a broad spectrum of pests.

24. Although individual agricultural insecticides have multiple crop uses as well as several crop and pest registrations, their efficacy with respect to individual crops and against individual target pests will vary. Accordingly, the number of substitution alternatives and the level of demand-side substitution will vary across individual crop markets.

25. It is unnecessary to further delineate the product market for insecticides on the basis of target pests. Share data by insect pest is neither readily available, nor is it additionally informative. Share data for insecticides is, in this industry, typically compiled on the basis of individual crops or crop types.

26. Agricultural insecticides can be applied as a foliar spray or as an in-furrow (soil) application. These applications are substitutable and are treated as within the same product market. Agricultural insecticides may also be used as seed treatment insecticides and in such circumstances are applied to seeds prior to planting. Seed treatment insecticides are generally not considered by growers as substitutes for foliar agricultural insecticides.

27. The Commissioner has concluded that overlap between the Respondents and competition concerns exist in respect of agricultural insecticides (not including seed treatment insecticides) for use on the following relevant crops: potatoes; apples; tomatoes; and leafy vegetables (such as lettuce).

28. Although measurable shares of agricultural insecticides and the degree to which competition is affected by the Acquisition will vary among these crops, the competition concerns are the same and, as described more fully in the Consent Order Impact Statement (the "COIS"), the remedy contemplated in the DCO is designed to collectively address the competition concerns for each of these crops. For these reasons and for the purpose of this application, agricultural insecticides for use on potatoes, apples, tomatoes and leafy vegetables will be collectively referred to as "insecticides for use on certain fruit and vegetable crops".

29. There are other crops for which overlap exists between Bayer and ACS Canada, including agricultural insecticides for use on canola, cereals, corn, strawberries, blueberries and other minor crops. However, the Commissioner has concluded that there are no competition issues with respect to these crops due to the presence of effective remaining competition.

30. For the purpose of analysing the likely effects of the Acquisition in Canada, the Commissioner has concluded that the relevant product market is insecticides for use on certain fruit and vegetable crops.

(ii) Geographic Market

31. While research and development, manufacturing and formulation may occur at an international level, the marketing and selling of agricultural insecticides for use in Canada occurs within Canada.

32. Although agricultural insecticides are distributed and sold according to the region where certain crops are grown, there is limited regional deviation in the prices to distributors and wholesalers and suggested retail prices set by suppliers.

33. For the purpose of analysing the likely effects of the Acquisition in Canada, the Commissioner has concluded that the relevant geographic market for insecticides for use on certain fruit and vegetable crops is Canada.

(b) Market Concentration

34. Within Canada, there are six major research-based suppliers of agricultural insecticides: Bayer, ACS Canada, Syngenta, DuPont, BASF and Dow. Other companies (including Sumitomo Chemical Company Limited, Griffin L.L.C. and United Agri Products Inc.) also supply and sell agricultural insecticides based on older, off-patent, active ingredients. Many of the agricultural insecticide products currently sold by companies, other than Bayer, are

based on older chemistries. These insecticides are slowly being phased out of the marketplace and are being displaced by products based on newer chemistries (such as chloronicotinyls, as discussed below) due to regulatory pressures relating to the protection of the environment and due to crop resistance management issues.

35. Bayer produces an agricultural insecticide product which it markets under the brand name "Admire". Admire is the only insecticide currently available for sale in Canada that is based on the new family of chemicals known as chloronicotinyls.

36. Chloronicotinyls are effective against a broad spectrum of insect pests and are particularly effective against certain insects (Colorado Potato Beetles, flea beetles and aphids) that currently pose the most serious threats to certain crops.

37. Admire, formulated from the active ingredient imidacloprid, is currently registered for use on potatoes, apples, tomatoes and lettuce.

38. Bayer has agricultural insecticide products registered for crop uses in other countries that are formulated from another chloronicotinyl (thiacloprid). However, Bayer has no plans to register thiacloprid for any crop use in Canada for the next several years.

39. ACS Canada has developed an agricultural insecticide product, under the brand name "Assail", also based on the chloronicotinyl chemistry. Assail is formulated from the active

ingredient acetamiprid. Nippon Soda Co. Ltd. ("Nippon Soda") has provided Aventis with an exclusive licence to sell and develop acetamiprid-based agricultural field and seed treatment products, throughout most of the world.

40. Assail has not yet been introduced in Canada. Assail is, however, expected to receive temporary registration in Canada in 2002 and full registration in 2003 for use on apples, pears, leafy vegetables (such as lettuce), cole crops (such as broccoli and cauliflower), tomatoes and grapes. Registration of Assail for use on potatoes is expected within two years.

41. The Commissioner has estimated total grower expenditures on agricultural insecticides for use on fruit and vegetable crops to have amounted to approximately $35 million in 2001. Agricultural insecticides for use on potatoes represented over half of these expenditures; agricultural insecticides for use on fruit represented approximately one-third; and, agricultural insecticides for use on other vegetables represented the remaining expenditures.

42. Estimates of shares of grower expenditures on agricultural insecticides are available by crop from independent third party sources who undertake surveys of grower purchases of pesticide products throughout Canada. Based on survey data compiled by Léger Market Research, the Commissioner has estimated that grower expenditures on agricultural insecticides for use on potatoes in 2001 amounted to approximately $18 million in Canada. Table 1 below sets out

the Commissioner's estimates of market shares in respect of agricultural insecticides for use on potatoes in Canada.

Table 1: The Estimated Market Share of Potato Insecticides in Canada in 2001

PRODUCER	PRODUCTS	MARKET SHARE %
Bayer	Admire, Monitor, Furadan, Guthion	**83.4**
ACS Canada	Thiodan, Decis, Sevin	**2.4**
Combined		**85.8**
Syngenta	Cymbush, Ambush, Matador, Pirimor	3.6
BASF	Ripcord, Cygon, Thimet	4.5
Others		6.1
Total		**100**

43. As shown above, Bayer and ACS Canada's combined share of grower expenditures on agricultural insecticides for use on potatoes in Canada in 2001 was approximately 86%. Bayer's product Admire represented the single largest share, with approximately 75% of total grower expenditures on agricultural insecticides for potatoes in 2001.

44. The Commissioner estimates that following the introduction by ACS Canada of Assail for use on potatoes expected within the next two years, Assail will have a share of grower expenditures on agricultural insecticides for potatoes of more than 10%.

45. For other crops, information regarding shares of grower expenditures is less readily available. The Commissioner has estimated the combined share of Bayer and ACS Canada of grower expenditures on agricultural insecticides for use on apples in Canada in 2001 to have been approximately 47%. The Commissioner has estimated the combined share of Bayer and ACS Canada of grower expenditures on agricultural insecticides for use on tomatoes in Canada in 2001 to have been approximately 60%. The Commissioner has estimated the combined share of Bayer and ACS Canada of grower expenditures on agricultural insecticides for use on leafy vegetables in Canada in 2001 to have been approximately 15%.

46. The introduction by ACS Canada of Assail for foliar insecticide use on apples, tomatoes and leafy vegetables is expected for the 2002 growing season. The Commissioner has estimated that the share of Assail of grower expenditures on agricultural insecticides for use on apples, tomatoes and leafy vegetables in Canada in 2002 will likely be 4%, 10% and 20%, respectively. Furthermore, the Commissioner estimates that these shares will grow in the following two years.

47. Thus, it is expected that, absent the Acquisition, the respective shares of grower expenditures on agricultural insecticides for use on certain fruit and vegetable crops of Bayer and ACS Canada will increase as a result of the introduction of chloronicotinyl-based insecticides. In addition, it is expected that, absent the Acquisition, Bayer and ACS Canada would compete directly for grower expenditures.

(c) Section 93 Factors

(i) Foreign Competition

48. Foreign competition is limited by the regulatory environment. Although products may be manufactured, formulated and/or packaged by foreign-based companies for the Canadian market, regulatory requirements necessitate that foreign firms obtain Canadian registrations for their products to be sold in Canada. There is no evidence that foreign-based pesticide companies without an existing presence in Canada have plans to establish a presence in Canada.

49. The Commissioner has concluded that there is little evidence that foreign competition would have any timely disciplinary effects in the relevant markets.

(ii) Acceptable Substitutes

50. The Commissioner has concluded that there are currently no effective substitutes for agricultural insecticides for the control of insects that damage fruit and vegetable crops. Although organic farming may be a substitute for using agricultural chemicals, this type of farming has not received wide acceptance by growers. Because of lower crop yields typically experienced with organic farming, higher prices for organic agricultural products generally result such that organic farming would not adequately discipline the effects of the Acquisition.

51. Seed treatment insecticides can be effective in controlling soil-borne insect pests; however, seed treatment insecticides have not been developed for the majority of fruit and vegetable crops (including potatoes, apples, tomatoes and leafy vegetables). Seed treatment insecticides have been developed for field crops (such as canola, cereals and corn) but these types of seed treatments are not effective on fruit and vegetable crops.

52. Generic products with the same active ingredient as a brand name product may be substitutes for that product provided that they have been proven to be functionally interchangeable. However, newer active ingredients, including imidacloprid and acetamiprid, are still covered by patent protection and, therefore, products such as Bayer's Admire and ACS Canada's Assail do not face competition from equivalent generic products.

(iii) Removal of a Vigorous and Effective Competitor

53. ACS Canada has a strong sales force in Canada and has demonstrated an ability to compete effectively with Bayer in the supply of agricultural insecticides. ACS Canada is developing new products and new chemistries that will compete directly with Bayer to provide product choice for consumers. ACS Canada is one of only three companies with new products based on chloronicotinyls, a new chemistry that will likely have a substantial impact upon competition in agricultural insecticides in the future.

54. ACS Canada's Assail agricultural foliar insecticide is based on the same chemical family as Bayer's Admire, and is expected to be effective against the same spectrum of insects, particularly Colorado Potato Beetles, flea beetles and aphids. The Commissioner has concluded that the Acquisition will remove ACS Canada as a vigorous and effective competitor in the development as well as the sale of new agricultural insecticide products.

(iv) Barriers to Entry

55. There are significant sunk costs associated with the research and development of new pesticide products. The construction of a new manufacturing facility or conversion of an existing one, when necessary, can also mitigate against *de novo* entry of a pesticide company.

56. Significant time elapses between the discovery of a molecule and the introduction of a pesticide product. The period between the discovery of a molecule and submission to the PMRA is typically longer than five years and can last as long as ten years.

57. The use and sale of a pesticide product in Canada is prohibited unless the product has been registered by the PMRA. The product must conform to rigorous standards and be packaged and labelled as prescribed. The *Pest Control Products Regulations,* C.R.C. c. 1253 describe the data, quantity and information requirements necessary to determine the safety, merit and value of the product. The product registrant must submit a number of analytical studies including a Toxicology Report, a User Exposure Study, a Performance Assessment and Food Residue Studies.

58. The completion of the data generation and collection phase can last between four and seven years. Once the data is summarized and analysed, a PMRA submission package is prepared. This extensive data package is then reviewed by the PMRA. The science review at the PMRA for a new active ingredient and end-use product takes an additional two to three years. The cost of developing the necessary Canadian data package to support registration can be in excess of $5 million depending upon the complexity of the product, label requirements and the intended crops.

59. Existing patent protection, including patents for active ingredients, formulated products and processes can prevent and deter new entry.

60. The Commissioner has concluded, on the basis of the foregoing, that new entry is not likely to occur within two years to discipline the exercise of market power by the merged firm.

(v) Effective Remaining Competition

61. Remaining competitors in the agricultural insecticides business include Syngenta, BASF, DuPont and Dow and a number of manufacturers of generic products.

62. Among the research-based competitors, only Dow and Syngenta are expected to sell agricultural insecticides for use on certain fruit and vegetable crops based on new chemistries (Spinosad and Thiamethoxam, respectively), within the next two years. However, the Commissioner has concluded that these companies and generic producers will not likely be effective in disciplining an exercise of market power by the merged entity in the relevant time frame.

(vi) Change and Innovation

63. Companies engaged in the pesticide business continually develop new products to provide growers with the ability to adapt to changes in the environment and to control pests that develop resistance to older pesticides after long-term use. Competitors' products based on new chemistries may discipline an incumbent's market position provided they have equal or higher efficacy rates.

64. The Commissioner has concluded that the level of change and innovation in agricultural insecticides for use on certain fruit and vegetable crops is not likely to discipline the exercise of market power by the merged entity in the relevant time frame.

(d) Relief Sought

65. The Commissioner has concluded that the acquisition of ACS Canada by Bayer is likely to prevent or lessen competition substantially in the provision of agricultural insecticides for certain fruit and vegetable crops in Canada. It is submitted that this substantial prevention or lessening of competition will be eliminated by the implementation of the DCO, as explained more fully in the COIS attached hereto at Tab 5.

D. Seed Treatments

(a) Relevant Market

(i) Product Market

66. Seed treatments are designed to protect seeds and young plants from seed and soil-borne diseases and soil-borne insects. Most seed treatments are chemical fungicide or insecticide products applied to a seed before planting. Seed treatment fungicides are used to control seed and soil-borne diseases of seeds and seedlings, but not later infection by leaf diseases. Seed treatment insecticides are used to control insect pests, particularly soil-borne pests. Seed treatment fungicides and seed treatment insecticides may be sold separately or sold as combinations of fungicide and insecticide products known as "dual-use" seed treatments.

67. Growers choose from among seed treatment alternatives based on their efficacy on particular crops. Because each crop may be endangered by a different spectrum of pests, or because of differing seed characteristics across crops, seed treatments are generally not functionally interchangeable or substitutable among crops.

68. Seed treatments are used in various field crops including canola[1], cereals (wheat and barley), corn, chickpeas, dry beans, field peas and lentils.

69. The Commissioner has concluded that overlap between the businesses of the Respondents and competition concerns in respect of seed treatments exist in the following relevant crops: canola, barley and wheat.

70. Although measurable shares and the degree to which competition is affected by the Acquisition will vary slightly between seed treatments for wheat and seed treatments for barley, the competition concerns are the same and, as described more fully in the COIS, the remedy contemplated in the DCO is designed to collectively address the competition concerns for each of these crops. For these reasons and for the purpose of this application, seed treatments for wheat and seed treatments for barley will be collectively referred to as "seed treatments for cereals".

---

[1] Canola and mustard seed treatment are generally the same. Canola, as used herein, includes mustard.

71. Although overlap exists between Bayer and ACS Canada in seed treatments for corn, the Commissioner has concluded that there are no competition issues with respect to corn as a result of low combined shares of grower expenditures on seed treatments for this crop.

72. For the purpose of analysing the likely effects of the Acquisition in Canada, the Commissioner has concluded that the relevant product markets are seed treatments for canola and seed treatments for cereals.

(ii) Geographic Market

73. While research and development, manufacturing and formulation may occur at an international level, the marketing and selling of seed treatments for use in Canada occurs within Canada.

74. Suppliers' published list prices to distributors and wholesalers and suggested retail prices do not vary by region. Shares of grower expenditures on seed treatments by crop in Canada are typically compiled on a Canadian basis.

75. For the purpose of analysing the likely effects of the Acquisition, the relevant geographic market for seed treatments is Canada.

(b) Market Concentration

76. Within Canada, there are three major suppliers of seed treatments: Gustafson, ACS Canada and Syngenta. Bayer has a 50% interest in Gustafson and, absent the remedy proposed in the DCO, Gustafson would be responsible for the marketing and selling of all seed treatment products purchased from ACS Canada as a result of the Acquisition. For this reason and for the purpose of analysing the Acquisition, Bayer and Gustafson are treated as a single entity.

77. Based on survey data compiled by independent third parties, grower expenditures on seed treatments for Canadian crops amounted to approximately $145 million in 2001. Canola seed treatments represented approximately $45 million of these expenditures and cereal seed treatments represented approximately $69 million.

78. Approximately 95% of seeded acres of canola in Canada are treated with seed treatment products.

79. Based on grower expenditures on canola seed treatments in 2001, including expenditures on seed treatments with lindane, which was de-registered for canola during the 2001 growing season, Gustafson and ACS Canada had a combined share of grower expenditures on canola seed treatments in 2001 of approximately 87%. However, as a result of a dramatic change in the canola seed treatment business, 2001 shares of grower expenditures are no longer

indicative of the state of competition in this market. Until recently, virtually all canola seed-treated acres were treated with dual-use products containing lindane, a low-cost insecticide active ingredient. Such products included ACS Canada's Foundation, Gustafson's Vitavax RS and Syngenta's Premier Plus. The PMRA removed canola from the labels of products containing lindane effective July 1, 2001.

80. Although seeds already treated with lindane may be sold by distributors (not manufacturers) in 2002 (comprising an estimated 25% of total seed treatments sold for use on canola in 2002), after this year, no products containing lindane will be sold in Canada. As a result, suppliers have been developing new seed treatment products for canola with new active ingredients to replace lindane.

81. Gustafson has replaced lindane with imidacloprid, an active ingredient already registered for sale in Canada as an insecticide-only seed treatment marketed under the brand name "Gaucho". Gustafson has introduced a dual-use product, branded "Gaucho Canola System". Early indications estimate a share of application acres of approximately 5% for Gaucho Canola System in 2002. Gustafson also has seed treatment products in development that are formulated from the active ingredient clothianidin, a chloronicotinyl, and sells Vitavax RS fungicide, based on the active ingredient carbathiin.

82. ACS Canada plans to replace lindane with acetamiprid through the product branded "Assail ST". Assail ST, an insecticide-only seed treatment based on acetamiprid has not yet been introduced in Canada. Currently Assail ST is being reviewed by the PMRA and registration is expected in late 2002 or 2003 for use in the 2003 growing season. Upon receiving such registration, ACS Canada plans to introduce a dual-use product, branded "Foundation Premium", which is comprised of two separate products, Assail ST and Foundation Lite. Foundation Lite is an existing iprodione-based fungicide seed treatment already being marketed by ACS Canada.

83. Syngenta has already introduced a dual-use seed treatment for use on canola, "Helix", which is comprised of a fungicide seed treatment and an insecticide active ingredient, thiamethoxam. Imidacloprid, clothianidin, acetamiprid and thiamethoxam are all chloronicotinyls, a new class of chemistry and the preferred replacement for lindane products.

84. For the next several years, Gustafson, ACS Canada and Syngenta are likely to be the only companies to develop and introduce new seed treatments based on chloronicotinyls. Although Syngenta is projected to sell the vast majority of new canola seed treatment products in 2002, the Acquisition would result in the combination of the Gustafson and ACS Canada seed treatment businesses, including two of the three chloronicotinyl-based seed

treatments expected to be in the canola seed treatment market in 2003 and beyond, which the Commissioner has concluded would result in a substantial lessening or prevention of competition in the canola seed treatment market.

85. Although dual-use products also exist in the barley and wheat seed treatment markets, fungicide-only products are predominant in these markets. The Commissioner's estimates of Canadian market shares based on survey data on application acres compiled by Stratus AgriMarketing are set out in Table 2 below in respect of seed treatments for use on barley and in Table 3 below in respect of seed treatments for use on wheat.

Table 2: The Estimated Market Share of Barley Seed Treatment Companies in Canada in 2001

PRODUCER	PRODUCT	MARKET SHARE %
ACS Canada	Charter (based on the active ingredient triticonazole)	**20**
Gustafson	Vitaflow Dual, Vitavax Dual (dual-use products), Baytan, Raxil FL, Raxil 250 FL, Raxil 312FS, Raxil SP, Vitaflow 280, Vitavax Single Solution, Vitavax SP or Vitavax Powder	**67**
TOTAL (ACS Canada and Gustafson)		**87**
Syngenta	Dividend	6
Other		7
TOTAL		**100**

Table 3: The Estimated Market Share of Wheat Seed Treatment Companies in Canada in 2001

PRODUCER	PRODUCT	MARKET SHARE %
ACS Canada	Charter (based on the active ingredient triticonazole)	**21**
Gustafson	Vitaflow Dual, Vitavax Dual (dual-use products), Baytan, Raxil FL, Raxil 250 FL, Raxil 312FS, Raxil SP, Vitaflow 280, Vitavax Single Solution, Vitavax SP or Vitavax Powder	**46**
TOTAL (ACS Canada and Gustafson)		**67**
Syngenta	Dividend	26
Other		7
TOTAL		**100**

86. Based on the above estimates, the Commissioner has concluded that Gustafson and ACS Canada's combined share of seed treatments application acres in 2001 amounted to approximately 87% for barley seed treatments and approximately 67% for wheat seed treatments.

87. The cereal seed treatment market is not affected by the withdrawal of lindane and the Commissioner has concluded that the 2001 company share estimates for cereal seed treatments given above are indicative of expected company shares that would prevail for 2002, absent the Acquisition.

(c) Section 93 Factors

(i) Foreign Competition

88. Foreign competition is limited by the regulatory environment. Although products may be manufactured, formulated and/or packaged by foreign based companies for the Canadian market, regulatory requirements necessitate that foreign firms obtain Canadian registrations for their products to be sold in Canada. There is no evidence that foreign-based seed treatment companies without an existing presence in Canada have plans to establish a presence in Canada.

89. The Commissioner has concluded that there is little evidence that foreign competition would have any timely disciplinary effects in the relevant markets.

(ii) Acceptable Substitutes

90. The Commissioner has concluded that foliar fungicides or insecticides are generally not considered by growers to be adequate substitutes for seed treatment fungicides or insecticides for canola and cereals.

(iii) Removal of a Vigorous and Effective Competitor

91. ACS Canada has a strong sales force in Canada and has demonstrated an ability to compete effectively with Gustafson and Syngenta in the supply of seed treatments. ACS Canada is developing new seed treatment products and new chemistries that will compete directly with Gustafson and Syngenta to provide product choice for consumers. ACS Canada is one of only three companies with new products based on chloronicotinyls, a new generation class of chemistries that will likely have a substantial impact upon competition in canola seed treatments in the future. ACS Canada has also been effective in introducing Charter as a fungicide seed treatment for use on cereals.

(iv) Barriers to Entry

92. As described more fully in paragraphs 55 - 60, significant barriers to entering the pesticide industry or entering a specific pesticide market include: sunk facility and research and development costs; lengthy and expensive product development and product registration processes; and patent protection.

(v) Effective Remaining Competition

93. Syngenta is the only other significant competitor in the seed treatment industry in Canada. The Commissioner has concluded that the presence of Syngenta alone is not sufficient to provide effective remaining competition to discipline the exercise of market power by the merged entity.

(vi) Change and Innovation

94. The seed treatment industry is one characterized by change and innovation. However, as stated above, only three companies, Gustafson, ACS Canada, and Syngenta have seed treatment products in development in Canada.

95. The Commissioner has concluded that the level of change and innovation in this market is not likely to discipline the exercise of market power by the merged entity in the relevant time frame.

(d) Relief Sought

96. The Commissioner has concluded that the acquisition by Bayer of ACS Canada's seed treatment business would likely prevent or lessen competition substantially in the provision of canola seed treatments and cereal seed treatments in Canada. It is submitted that this substantial lessening or prevention of competition will be eliminated by the implementation of the DCO, as explained more fully in the COIS.

E. Agricultural Herbicides

(a) Relevant Market

(i) Product Market

97. Agricultural herbicides prevent or reduce weeds affecting crops.

98. Growers choose from among agricultural herbicide alternatives based on: (1) efficacy with respect to particular crops; and (2) efficacy against particular target weeds.

99. The active ingredients that are used in formulated herbicide products and the herbicides themselves are typically registered by the PMRA for a limited number of crop uses (in many cases, only one crop use) and for a broad spectrum of weeds.

100. Cereals (wheat and barley), canola and corn are among the most important crops on which herbicides are used in Canada. Herbicides for these crops are generally not substitutable. Certain herbicides for use on wheat are not substitutable for certain herbicides for use on barley and certain herbicides are only effective for use on certain types of wheat (spring wheat, durum wheat or winter wheat). Accordingly, the number of substitution alternatives and the level of demand-side substitution will vary across individual crops and within individual crops.

101. There are two main classes of weeds: grassy and broadleaf. Grassy weed herbicides and broadleaf herbicides have different underlying chemistries and are not substitutes. Grassy weed herbicides and broadleaf herbicides are complementary products, often mixed by growers in a single tank ("tank-mixed") for application together.

102. Agricultural herbicide products can also be classified as either pre-emergent or post-emergent. Pre-emergent agricultural herbicides are applied before the crop germinates. Post-emergent agricultural herbicides are applied early in the growing season and during a fairly limited application window. Pre-emergent herbicides are an imperfect substitute for post-emergent herbicides.

103. For the reasons stated above, the product markets for agricultural herbicides have been defined on the basis of the following: crop variety; class of weeds; and application timing.

104. Although Bayer and ACS Canada have overlapping products in respect of agricultural herbicides for use on corn, pulse crops, soybeans, vegetables, and potatoes, these crops do not raise competition concerns because of low combined shares of grower expenditures on agricultural herbicides for these crops.

105. For the purpose of analysing the likely effects of the Acquisition in Canada, the Commissioner has concluded that the relevant product market is post-emergent grassy weed herbicides for use on spring wheat ("wheat grass herbicides").

(ii) Geographic Market

106. While research and development, manufacturing and formulation may occur at an international level, the marketing and selling of agricultural herbicides for use in Canada occurs within Canada.

107. Because of different climate and soil conditions, the types of crops grown across Canada will vary by region. Spring wheat is almost exclusively grown in Western Canada. Manufacturers' published list prices to distributors and wholesalers and suggested retail prices do not vary within Western Canada.

108. For the purpose of analysing the likely effects of the Acquisition in Canada, the Commissioner has concluded that the relevant geographic market for wheat grass herbicides is Western Canada.

(b) Market Concentration

109. Within Canada, there are seven major suppliers of grassy weed herbicides: Bayer, ACS Canada, Syngenta, DuPont, BASF, Dow and Monsanto.

110. Table 4 sets out the Commissioner's estimates of market shares based on survey data of grower expenditures on wheat grass herbicides in Western Canada in 2001 compiled by Léger Market Research.

Table 4: The Estimated Market Share of Post-Emergent Wheat Grass Herbicides in Western Canada in 2001

PRODUCER	PRODUCT	MARKET SHARE %
Syngenta	Horizon, Achieve	45.8
ACS Canada	Puma, Hoe Grass, Triumph, Laser	**24.5**
DuPont	Harmony Total, K2	12.4
Bayer	Everest	**3.3**
Monsanto	Sundance	7.7
BASF	Assert, Accord, Avenge	4.8
Others		1.5
Total		100
Bayer/ACS Canada		**27.8**

111. Reflected in the above grower expenditure share data is the fact that Syngenta is the market leader and post-merger, the combined share of grower expenditure on wheat grass herbicides of Syngenta, Bayer and ACS Canada will near or exceed 70%. It is important to note that DuPont's Harmony Total is a "co-pack" that packages DuPont's broadleaf herbicide with Horizon (Syngenta). DuPont's K2 is a co-pack with Everest (Bayer).

112. Additional market research indicates that the present level of concentration will grow. Everest is a recently introduced product. The Commissioner estimates that, absent the Acquisition, Bayer's share of grower expenditures on wheat grass herbicides would have increased to between 15-25% within the next two to five years. The Acquisition may reduce the incentive for Bayer to promote and price Everest as aggressively as it would have in the absence of the merger. Bayer, post-merger, could be concerned about cannibalizing sales of ACS Canada's Puma. The incentive to grow the market share of Everest could be reduced. Bayer could have an incentive to charge higher prices for both Everest and Puma. Bayer could position Everest as a niche product or invest less in one or both products, thereby limiting product choice. The entry dynamics associated with a new active ingredient that is highly effective and priced to gain market share may be forestalled by the change in Bayer's incentives.

113. Horizon (Syngenta), Puma (ACS Canada) and Everest (Bayer) are considered to be the closest competitors with respect to wild oat control. Wild oats are, by far, the most important target weed in the spring wheat industry. Puma and Everest are additionally recognized for their efficacy on wild millet (green foxtail), the second most important target weed. A number of the other products listed above have been "niched" in the market as products that target other specific weeds or as products that can be used when resistance has developed.

114. As reflected in the shares of grower expenditures on wheat grass herbicides outlined above, the wheat grass herbicides industry is already highly concentrated and this concentration would increase with the Acquisition.

115. The high level of market concentration as well as high barriers to entry, multimarket presence and a history of joint ventures among competitors are factors that suggest a possible interdependent exercise of market power.

116. The Acquisition could facilitate interdependent behaviour by creating two relatively large firms with highly effective products, Syngenta and Bayer. In the absence of the Acquisition, the market would likely enjoy significantly greater potential competition from Bayer's newly-introduced product, Everest.

(c) Section 93 Factors

(i) Foreign Competition

117. Foreign competition is limited by the regulatory environment. Although products may be manufactured, formulated and/or packaged by foreign-based companies for the Canadian market, regulatory requirements necessitate that foreign firms obtain Canadian registrations for their products to be sold in Canada. There is no evidence that foreign-based pesticide companies without an existing presence in Canada have plans to establish a presence in Canada.

118. The Commissioner has concluded that there is little evidence that foreign competition would have any timely disciplinary effects in the relevant market.

(ii) Acceptable Substitutes

119. New hybrid varieties of herbicide-resistant wheat are scheduled to be introduced in Canada. These strains of wheat are resistant to highly effective herbicides. Because of their high cost, the Commissioner has concluded that it is unlikely that these products would discipline the exercise of market power by the merged entity. Other genetically-modified varieties of

wheat may also become available. Because of sensitivity to their use (especially in countries to which Canada exports wheat), these products are not expected to capture significant market share within two years. The herbicides used on both hybrid wheat and genetically-modified wheat would damage normal spring wheat. For these reasons, the Commissioner has concluded that these products are not acceptable substitutes for existing wheat grass herbicides.

120. Bayer manufactures a grassy weed herbicide for winter wheat, "Olympus", formulated from the active ingredient propoxycarbazone. Olympus is not, however, registered for use in Canada and such registration is not expected because of the relatively small Canadian market for winter wheat. Olympus would not be a substitute for wheat grass herbicides.

(iii) Removal of a Vigorous and Effective Competitor

121. ACS Canada has a strong sales force in Canada and has previously demonstrated an ability and incentive to position Puma as a price competitor to Syngenta's products. The Commissioner has concluded that the Acquisition will result in the removal of ACS Canada as a competitor.

(iv) Barriers to Entry

122. As described more fully in paragraphs 55 - 60, significant barriers to entering the pesticide industry or entering a specific pesticide market include: sunk facility and research and development costs; lengthy and expensive product development and product registration processes; and patent protection.

(v) Effective Remaining Competition

123. While there are numerous competitors remaining in the wheat grass herbicides industry in Canada, the largest of these by far is Syngenta. The Commissioner has concluded that the presence of Syngenta is not sufficient to provide effective remaining competition. Syngenta's product has a high price and it is unlikely that Syngenta would discipline an increase in prices.

124. The other competitors' products are not as effective or have been niched with respect to the weeds against which they are effective. A number of these products are experiencing declining market share.

(vi) Change and Innovation

125. The Commissioner has concluded that the level of change and innovation in this market is not likely to discipline the exercise of market power by the merged entity within the relevant time frame; rather, it is likely that the level of change and innovation would be hindered or delayed by the Acquisition.

(d) Relief Sought

126. The Commissioner has concluded that the acquisition by Bayer of ACS Canada's agricultural herbicide business would likely prevent competition substantially in the provision of wheat grass herbicides in Western Canada. It is submitted that this substantial prevention of competition will be eliminated by the implementation of the DCO, as explained more fully in the COIS.

F. Agricultural Fungicides

127. Agricultural fungicides are used to prevent the deterioration of plants through fungi and moulds prior to harvesting. Bayer has only one fungicide registered for emergency use in Canada. The product does not overlap with those of ACS Canada.

G. Professional-Use Products

128. Professional-use products refers to turf and ornamental insecticides used by professional applicators. Competition concerns do not arise in this market as a result of the Acquisition.

V. CONCLUSION

129. The Commissioner has concluded that the Acquisition would likely result in a substantial lessening or prevention of competition in a number of relevant markets. It is respectfully submitted that the likely substantial lessening or prevention of competition in each market as identified by the Commissioner will be eliminated by the implementation of the DCO, as explained more fully in the COIS.

130. The Commissioner therefore seeks, pursuant to paragraph 92(1)(e) and section 105 of the *Competition Act*, the issuance of the DCO attached hereto at Tab 7 to avoid any substantial prevention or lessening of competition in the relevant markets referred to herein.

CT-

IN THE MATTER OF an application by the Commissioner of Competition for an Order pursuant to sections 92 and 105 of the *Competition Act*, R.S.C. 1985, c. C-34 as amended;

AND IN THE MATTER OF an application by the Commissioner of Competition for an Order pursuant to section 104 of the *Competition Act*;

AND IN THE MATTER OF the acquisition by Bayer AG of all of the shares of Aventis CropScience Holding S.A., constituting the agrochemical business of Aventis S.A. and, in Canada, the indirect acquisition by Bayer AG of all of the shares of Aventis CropScience Canada Co.

BETWEEN:

THE COMMISSIONER OF COMPETITION

Applicant

- and -

BAYER AG and AVENTIS CROPSCIENCE HOLDING S.A.

Respondents

STATEMENT OF GROUNDS AND MATERIAL FACTS

JOSEPHINE A.L. PALUMBO
Department of Justice
Competition Law Division
Place du Portage, Phase I
50 Victoria Street, 22nd Floor
Gatineau, QC K1A 0C9

Tel: (819) 953-3902
Fax: (819) 953-9267

Counsel to the Commissioner of Competition