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Cotton Concentration Report

An Assessment of Monsanto's Proposed Acquisition of Delta and Pine Land

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Executive Summary

On August 15, 2006, Monsanto announced that it would acquire the Delta and Pine Land Company (DPL). DPL is the eleventh largest seed company in the world, sells over half of the cotton seed in the U.S., and holds a pivotal position as the only major cotton seed firm that is not also a biotechnology trait provider. Monsanto dominates the market for biotechnology traits in cotton and other crops, and is also the largest seed firm in the world. The proposed merger deserves close scrutiny, particularly in light of the extraordinarily high degree of concentration already existing in the cotton industry.

Cotton Industry Already Highly Concentrated Pre-Merger

Cotton seed: Just three firms sell 92% of U.S. cotton seed to farmers (Section 2.1.1, Figure 1, Appendix 1), a much higher concentration than other major crops (Appendix 2)

Biotechnology traits: Over 87% of U.S. cotton is biotech. 96% of biotech cotton contains Monsanto traits, and 95% contains *only* Monsanto traits (Section 2.1.2, Figure 2)

Research and development: Monsanto has similar dominance in R&D for future cotton traits, accounting for 94% of the experimental biotech cotton planted in the U.S. from the 2000 to present (Section 3.4.3, App. 5)

Cotton farms: The average size of U.S. cotton farms more than doubled from 1987 to 2002. One of every five cotton farms ceased operations in just the five years from 1997 to 2002 (Section 2.1.3, Figure 3).

Market Power and Anticompetitive Effects

High cost of cotton seed: The cost of cotton seed has risen 3.4-fold from 1995 to 2005, due primarily to rising technology fees charged for biotech traits (Section 2.2, Figures 4 & 5, Table 1, Appendix 3). The value added by biotech traits does not justify these steep premiums (Section 2.3), as the trend of increasing cotton yield since 1930 has not accelerated during the biotech era (Appendix 4)

Limited choice: Farmers have fewer choices of quality conventional cotton seed, and fewer choices of cotton varieties with one trait vs. two, as cotton seed firms and trait providers aggressively pursue "increased technology penetration" to maximize profits (Sections 2.4 & 2.5, Figures 7 & 8)

Agronomic, Environmental Consequences of Monsanto's Trait Monopoly

Crop failures: Monsanto's biotech cotton has failed numerous farmers since its introduction, often resulting in sharp drops in yield. Near-total reliance on any agricultural technology, including one company's limited set of biotech traits, is unwise (Section 2.6)

Resistant weeds: The dramatically increased use of glyphosate-based herbicides (e.g. Roundup) associated with Roundup Ready cotton and other crops has fostered a rapid and dangerous development of weeds resistant to the herbicide, a threat to the cotton industry compared by one expert to the boll weevil (Section 2.7)

Other impacts: Recent scientific studies suggest that excessive use of glyphosate, which has increased six-fold from 1992-2002, is linked to plant disease, crop mineral deficiencies, reduced yields and (in the case of Roundup) amphibian mortality, and may pose a long-term threat to the productivity of American agriculture (Section 2.8).

Anticompetitive Effects of the Merger

Oligopoly to duopoly? USDA data show that the number of significant cotton seed firms other than the top three has declined by more than half from 2003 to 2006. Bayer's rising market share since 1999 is concentrated in the Southwest, and has not diversified other regional seed markets. A divested Stoneville may well be uncompetitive and ripe for takeover, possibly resulting in a cotton seed duopoly controlling > 90% of the market (Section 3.1).

Reduced choice: Monsanto's commitment to "increased technology penetration" would lead to accelerated phase-out of DPL's conventional cotton varieties, which comprised 40% of conventional lines planted in 2006, and fewer high-quality "generation one" and "single-trait" options, reducing choices for farmers (Sections 3.2 & 3.3).

Increasing cotton seed prices: Monsanto's pledge to "invest in penetration of higher-margin traits in DPL offerings" would accelerate the steep rise in cotton seed prices (Section 3.3, Table 2)

Consolidation of trait monopoly: DPL is the only seed firm among the top four (Bayer, Monsanto-Stoneville, Dow-Phytogen) that is not also a trait provider. Acquisition of DPL by Monsanto would likely result in exclusion of non-Monsanto traits in over half of U.S. cotton, extending Monsanto's current trait monopoly in cotton (Section 3.4) and other crops (Section 3.5) well into the future. It would also exacerbate the adverse agronomic and environmental impacts of trait monopoly in all crops. The high failure rate in agricultural biotechnology means that conduct-based solutions, such as compulsory licensing agreements to force Monsanto to deploy competitors' traits in DPL germplasm, are risky and likely to fail to achieve their competitive ends (Section 3.11).

Other Likely Impacts of the Merger

Organic cotton: The booming market in organic cotton is threatened by transgenic contamination, herbicide spray drift damage, and potentially by decreased conventional seed availability. The proposed combination would exacerbate such risks for organic cotton growers in the U.S. and overseas, and potentially reduce U.S. consumers' choice of organic cotton products (Section 3.7).

Seed sterility: DPL holds major patents on seed sterility technology (i.e. Terminator), a biological means to eliminate the millennia-old farmer's practice of saving and replanting seeds. Monsanto is known for aggressive prosecution of farmers who (allegedly) save its patented seeds. The merger would increase the likelihood that internationally-condemned Terminator cotton and other crops will be introduced, to the detriment of the world's farmers (Section 3.8).

International impacts: Monsanto is known for questionable business practices to promote its interests overseas, including illegal actions such as bribery of Indonesian government officials, which resulted in SEC prosecution and a \$1.5 million fine in 2002. Acquisition of DPL's substantial international cotton seed business would give Monsanto, already the world's largest seed firm (Appendix 6), additional scope for such activities (Section 3.9).

Conclusion and Recommendations

The proposed combination would negatively impact farmers through reduced seed choices, increased seed prices, rising production costs and increased reliance on one company's technology well into the future. The merger would also increase the cotton industry's already near-total dependence on one company's herbicide-tolerance traits, exacerbating glyphosate-resistant weeds and potentially endangering the productivity of American agriculture through the effects of excessive glyphosate use. Finally, acquisition of DPL would invest Monsanto with more power to pursue questionable business practices overseas, and increase the likelihood of introduction of internationally-condemned sterile seed technology.

The Center for Food Safety and International Center for Technology Assessment call on the Department of Justice (DoJ) to unconditionally oppose the proposed acquisition of Delta and Pine Land by Monsanto, and to oppose future acquisitions leading to increased concentration in the cotton seed industry. We also urge the U.S. Dept. of Agriculture to increase funding for public-sector development of affordable, conventional seed varieties neglected by the public sector and to deny applications by entities seeking to field test any seed sterility technology.