

Book Reviews

Emily Eaton, *Growing Resistance: Canadian Farmers and the Politics of Genetically Modified Wheat* (Winnipeg: University of Manitoba Press, 2013). 208 pp. Paperback \$27.95.

Recombinant DNA techniques are biotechnologies that splice together genetic material from several sources which share the same chemical structure in order to create, in laboratories, modified gene sequences that would not be found in nature and in so doing, introduce non-natural traits into plants. The traits found in such genetically modified, or transgenic, organisms can include resistance to specific chemicals, pests, diseases, or ecological conditions, or alterations in the nutrients of the plant. Originating in university research in the early 1970s and commercially developed in the 1980s, the first transgenic crop to be approved for cultivation was Monsanto's Flavr Savr tomato in 1994. In the two decades since that approval, genetically modified crops have reconfigured global agriculture, increasing their share of total cultivated area by a factor of 94 between 1996 and 2011, "the fastest adopted crop technology in recent history" (James, "Global status of commercialized biotech/GM crops: 2011," 2011). Transgenic crops have become an integral component of industrialized agriculture and the corporate food regime that structures the activities and operation of the world food system (Akram-Lodhi, "Contextualizing Land Grabbing: Contemporary Land deals, the Global Subsistence Crisis and the World Food System," 2012).

In 1997, Monsanto began the technical development of Roundup Ready wheat. Roundup is the trade name of a Monsanto glyphosate-based broad-spectrum herbicide used to kill weeds, which over time became the most widely used herbicide in the United States. With its patent on Roundup technology coming to an end, Roundup Ready wheat was biotechnologically engineered to be resistant to glyphosate, meaning that when the herbicide was applied to the crop, it would kill the weeds but not the wheat, and it was for this resistance in the seed that Monsanto acquired a new patent. In July 2001, when Monsanto was undertaking the field trials in western Canada necessary for the unconfined release of Roundup Ready wheat, an unprecedented coalition of farmer's organizations and marketing organizations, along with health, environmental and social justice non-governmental organizations, came together to oppose the introduction of Roundup Ready wheat into western Canada. So successful was this mobilization that in 2004, Monsanto withdrew its application to have Roundup Ready wheat released in Canada. Emily Eaton's *Growing Resistance: Canadian Farmers and the Politics of Genetically Modified Wheat* tells the story

of this mobilization.

Spanning an introduction, five substantive chapters and a conclusion, *Growing Resistance* begins by setting the stage, briefly telling the story of Monsanto and Roundup Ready wheat, as well as wheat production and wheat producer organizations in western Canada, within the context of understanding how capitalist transformations of the countryside take place, using the methodological approach contained within the problematics of the “agrarian question.” Chapter two explores how biotechnologies in Canada are regulated, detailing the conflicting role of the Canadian state as both a promoter of transgenic organisms through agriculture and Agri-Food Canada and as a regulator of transgenic organisms through the Canadian Food Inspection Agency. Crucially, the chapter introduces the concept of “substantial equivalence,” in which as long as the final product is deemed to be effectively the same as the non-transgenic organism that preceded it, no new regulatory framework is required. In Chapter three, Eaton explores the historical and cultural dimensions of wheat production in western Canada, stressing how the biology of wheat has been shaped by human interventions. Eaton extensively compares wheat to canola, not only because canola is a significant crop in western Canada but also because unlike wheat, transgenic canola has been widely adopted on the prairies. In this light, she explores the differentiated cultural politics of wheat and canola, reflecting divergent institutional and economic histories.

Chapters four and five contain the core research of the book, and are without doubt the sections that will be of most interest to readers. Eaton skillfully and engagingly demonstrates how a diverse and unusual alliance of consumer and producer groups was constructed that not only reflected citizens’ fears over the possible impact of transgenic organisms on health status, the environment, and food culture, but also reflected farmers’ concerns that the introduction of Roundup Ready wheat had the potential to threaten access to global export markets that had already restricted sales of transgenic organisms. This concern was expressed by farmer organizations, but critically was picked up by the Canadian Wheat Board, which, after gathering information that two-thirds of its buyers had reservations about transgenic wheat, became an active part of the anti-Roundup Ready wheat coalition. Keeping this group together was not, as Eaton shows, without tensions, and required an assiduous strategic move: rather than voicing farmer concerns about the extraction of profits and the corporate control of the food system, or citizen concerns about the democratic process, access to knowledge, and the environmental and health risks, western Canadian opponents of transgenic wheat appropriated the discourse that the consumer knows best. In practice, this meant articulating the concern that transgenic commodity wheat had to be avoided because buyers would avoid it. Instead, in an era of increasing international competition and declining state support, consumer preferences for high-quality niche-market wheat requires, it was argued, enhanced specialization by farmers, more sustainable farming practices, and new forms of state regulation that would allow farmers to better cater to

market demand by assuring quality. Thus, as Eaton shows in her conclusion, the language of the market was used to expose producer vulnerabilities within global agro-food commodity chains as well as the inherent conflict of interest in the public sphere between corporate agendas seeking to further capitalize and privatize Canadian agriculture and the regulation of markets that allows consumers to make ethical choices in their spending.

Growing Resistance is a very good book, and it is not surprising that it has been nominated for several awards. It is well-written, engagingly coherent, scholarly without being overly academic, and has the nuanced attention to detail necessary to tell such a compelling story. It deserves a wide and diverse readership. Eaton is to be particularly congratulated for recognizing the inherent difficulties in translating the very specific circumstances of which she writes into a more general understanding of how producer and consumer groups might unite against the introduction of unwanted biotechnologies in other landscapes and communities.

As Emily Eaton tellingly argues in *Growing Resistance*, prairie farm history is one of collective struggle and cooperation in which the welfare of farm families are entwined through common structures and experiences, and it is precisely this commonality that markets, corporations and the state try and actively break down and individualize. In the case of transgenic wheat, farmers resisted further incorporation because of the biological character of wheat, the cultural and institutional attachments to wheat, and thus the ways in which the human—nature relations embedded within farm labour reflected their moral and cultural economies in ways that can, but need not, pose an obstacle to capital. However, the success of this endeavour was only possible when a unity was forged amongst diverse interests in western Canada's food system. Thus, once again, *Growing Resistance* demonstrates that challenging corporate control over the food system requires as a foundational principle, in the telling phrase of Eric Holt-Gimenez (*Food Movements Unite! Strategies to Transform our Food Systems*, 2011), that “food movements unite.”

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