Insights into Canadians Perceptions on Agriculture

IHARF Soil & Crop Management Seminar

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Stuart Smyth
University of Sask.
Thank You To My Stakeholders
Regardless of what the public knows, retail caters to their views.
Personal knowledge of farming practices

- Know a lot about farming practices: 9%
- Know a little: 48%
- Know very little: 31%
- Know nothing about farming practices: 11%

When asked if consumers are interested in knowing more about agriculture, 60% of respondents indicated ‘Yes’ and 40% indicated ‘No’.

Source: Canadian Centre for Food Integrity
Direction of Canada’s Food System

Source: Canadian Centre for Food Integrity
Deciphering what the public knows

- Over the summers of 2017 & 2018, 4 consumer surveys were conducted
- One survey conducted in spring of 2019
- 500+ responses to each survey
- English only, so results are not valid for Quebec
- Results presented are representative for English speaking Canada
Confidence in Canada's food safety system

- Not at all confident: 3%
- Somewhat confident: 24%
- Moderately confident: 24%
- Confident: 36%
- Very confident: 13%
Understanding of food technology

- Genetics: 50% Very poor/poor, 36% fair, 14% good/very good
- Plant breeding: 55% Very poor/poor, 32% fair, 13% good/very good
- Genome editing: 72% Very poor/poor, 20% fair, 8% good/very good
Attitudes towards GM and GE

<table>
<thead>
<tr>
<th>% percentage of respondents</th>
<th>Transgenics</th>
<th>Genome editing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly negative / negative</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>Neutral</td>
<td>54</td>
<td>49</td>
</tr>
<tr>
<td>Positive / Strongly positive</td>
<td>16</td>
<td>29</td>
</tr>
</tbody>
</table>
Familiarity with livestock terms

Certified humane: 10% completely unfamiliar, 16% somewhat unfamiliar, 16% somewhat familiar, 40% completely familiar, 14% neither familiar nor unfamiliar, 4% don't know

rbST free: 66% completely unfamiliar, 9% somewhat unfamiliar, 6% somewhat familiar, 5% neither familiar nor unfamiliar, 1% don't know

Hormone-free: 2% completely unfamiliar, 6% somewhat unfamiliar, 8% somewhat familiar, 54% completely familiar, 28% neither familiar nor unfamiliar, 2% don't know
Familiarity with chemical terms

- **Glyphosate**: 56% completely unfamiliar, 12% somewhat unfamiliar, 8% somewhat familiar, 4% completely familiar, 11% don't know.
- **Insecticide**: 48% completely unfamiliar, 35% somewhat unfamiliar, 2% don't know.
- **Fungicide**: 49% completely unfamiliar, 20% somewhat unfamiliar, 4% don't know.
- **Herbicide**: 45% completely unfamiliar, 29% somewhat unfamiliar, 3% don't know.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Correct</th>
<th>Incorrect</th>
<th>Don't Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn grown thousands of years ago looks the same as corn grown today.</td>
<td>16</td>
<td>62</td>
<td>22</td>
</tr>
<tr>
<td>The yeast used to produce beer contains living organisms.</td>
<td>71</td>
<td>8</td>
<td>21</td>
</tr>
<tr>
<td>The cloning of living things produces genetically identical copies.</td>
<td>61</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>Organic food are created using radiation to create genetic mutations.</td>
<td>69</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Genetically modified foods are created using radiation to create genetic mutations</td>
<td>44</td>
<td>14</td>
<td>42</td>
</tr>
<tr>
<td>Tomatoes genetically modified with genes from catfish would taste like fish</td>
<td>55</td>
<td>4</td>
<td>41</td>
</tr>
<tr>
<td>It is possible to transfer animal genes to plants</td>
<td>24</td>
<td>23</td>
<td>53</td>
</tr>
<tr>
<td>Genetically-modified animals are always bigger than non-genetically modified animals</td>
<td>45</td>
<td>25</td>
<td>30</td>
</tr>
<tr>
<td>If a person eats genetically-modified fruits, their genes could be modified as a result</td>
<td>57</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>A father’s genes determinate whether the child will be a boy</td>
<td>49</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>There are some bacteria which live on wastewater</td>
<td>85</td>
<td>6</td>
<td>9</td>
</tr>
</tbody>
</table>
Familiarity with plant breeding

- Not at all familiar: 24%
- Slightly familiar: 45%
- Moderately familiar: 23%
- Very familiar: 5%
- Don't know: 3%
<table>
<thead>
<tr>
<th>Method</th>
<th>Not Heard</th>
<th>Heard Little</th>
<th>Moderate</th>
<th>Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biotechnology</td>
<td>7%</td>
<td>60%</td>
<td>32%</td>
<td>1%</td>
</tr>
<tr>
<td>New Plant Varieties</td>
<td>9%</td>
<td>58%</td>
<td>33%</td>
<td>1%</td>
</tr>
<tr>
<td>Hybrid Plant Breeding</td>
<td>8%</td>
<td>51%</td>
<td>40%</td>
<td>1%</td>
</tr>
<tr>
<td>Genetic Modification (or GMOs)</td>
<td>2%</td>
<td>45%</td>
<td>53%</td>
<td>0%</td>
</tr>
<tr>
<td>Gentic Engineering</td>
<td>4%</td>
<td>52%</td>
<td>44%</td>
<td>0%</td>
</tr>
<tr>
<td>Gene Editing</td>
<td>20%</td>
<td>49%</td>
<td>30%</td>
<td>1%</td>
</tr>
<tr>
<td>Mutagenesis</td>
<td>60%</td>
<td>31%</td>
<td>7%</td>
<td>2%</td>
</tr>
<tr>
<td>Cisgenesis/ Intragenesis</td>
<td>77%</td>
<td>20%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Precision Agriculture</td>
<td>60%</td>
<td>30%</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Genetic Marker Assisted Breeding</td>
<td>49%</td>
<td>40%</td>
<td>9%</td>
<td>2%</td>
</tr>
</tbody>
</table>

- I have not heard of this
- I have heard of this, but know very little about it
- I have heard of this to the point I could explain it to a friend
- Don't know
Plant breeding perceptions of natural

<table>
<thead>
<tr>
<th>Method</th>
<th>Completely natural</th>
<th>Very natural</th>
<th>Somewhat natural</th>
<th>Not at all natural</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crossbred plants and select offspring</td>
<td>22%</td>
<td>31%</td>
<td>31%</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Induce mutations in plants by exposing the seeds to chemicals</td>
<td>2%</td>
<td>20%</td>
<td>69%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Induce mutations in plants by exposing the seeds to radiation</td>
<td>2%</td>
<td>22%</td>
<td>65%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Insert genes from other species into plants</td>
<td>3%</td>
<td>19%</td>
<td>65%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Make a precise change to a plant's existing genes (e.g. switching genes on or off)</td>
<td>3%</td>
<td>24%</td>
<td>59%</td>
<td>9%</td>
<td>9%</td>
</tr>
</tbody>
</table>
Potential consequences of modern plant breeding

- More affordably-priced food: 4% Strongly disagree, 9% Disagree, 19% Neither agree nor disagree, 39% Agree, 20% Strongly agree, 9% Don't know
- More health problems: 10% Strongly disagree, 23% Disagree, 22% Neither agree nor disagree, 21% Agree, 9% Strongly agree, 15% Don't know
- More environmental problems: 7% Strongly disagree, 20% Disagree, 19% Neither agree nor disagree, 29% Agree, 13% Strongly agree, 13% Don't know
- More problems in the food supply chain: 10% Strongly disagree, 27% Disagree, 19% Neither agree nor disagree, 23% Agree, 6% Strongly agree, 15% Don't know
- Sustainable agricultural practices that are: 8% Strongly disagree, 18% Disagree, 28% Neither agree nor disagree, 26% Agree, 9% Strongly agree, 12% Don't know
Benefits of modern plant breeding

- Increase productivity: 5% strongly disagree, 13% disagree, 49% neither agree nor disagree, 24% agree, 7% strongly agree.
- Create foods with enhanced nutrients: 5% strongly disagree, 16% disagree, 31% neither agree nor disagree, 24% agree, 11% strongly agree.
- Reduce chemical residues in food: 6% strongly disagree, 18% disagree, 24% neither agree nor disagree, 20% agree, 9% strongly agree.
- Reduce chemical residues in the environment: 10% strongly disagree, 16% disagree, 22% neither agree nor disagree, 19% agree, 11% strongly agree.
- Offer a solution to the world food problem: 7% strongly disagree, 9% disagree, 17% neither agree nor disagree, 38% agree, 19% strongly agree.
- Reduce hand weeding: 4% strongly disagree, 25% disagree, 34% neither agree nor disagree, 16% agree, 20% strongly agree.
- Reduce land tillage: 9% strongly disagree, 26% disagree, 26% neither agree nor disagree, 10% agree, 27% strongly agree.
- Increase water use efficiency: 7% strongly disagree, 24% disagree, 32% neither agree nor disagree, 13% agree, 23% strongly agree.
- Increase the farmer's ability to farm more land: 6% strongly disagree, 22% disagree, 36% neither agree nor disagree, 19% agree, 2% strongly agree.
<table>
<thead>
<tr>
<th>Potential risk</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither agree nor disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead to loss of biodiversity</td>
<td>9%</td>
<td>19%</td>
<td>33%</td>
<td>18%</td>
<td>2%</td>
<td>19%</td>
</tr>
<tr>
<td>Reduce bee populations</td>
<td>9%</td>
<td>20%</td>
<td>22%</td>
<td>18%</td>
<td>3%</td>
<td>29%</td>
</tr>
<tr>
<td>Reduce butterfly populations</td>
<td>10%</td>
<td>20%</td>
<td>23%</td>
<td>15%</td>
<td>3%</td>
<td>30%</td>
</tr>
<tr>
<td>Increase chemical residues in the soil</td>
<td>16%</td>
<td>21%</td>
<td>21%</td>
<td>14%</td>
<td>3%</td>
<td>25%</td>
</tr>
<tr>
<td>Increase chemical residues in the water</td>
<td>4%</td>
<td>15%</td>
<td>21%</td>
<td>21%</td>
<td>3%</td>
<td>25%</td>
</tr>
<tr>
<td>Increase chemical residues in food products</td>
<td>4%</td>
<td>17%</td>
<td>22%</td>
<td>20%</td>
<td>3%</td>
<td>25%</td>
</tr>
<tr>
<td>Increase cases of farmer pesticide poisoning</td>
<td>5%</td>
<td>15%</td>
<td>23%</td>
<td>14%</td>
<td>3%</td>
<td>34%</td>
</tr>
</tbody>
</table>
Why do you think that farmers grow GM crops?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate pressure</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>Increased profit</td>
<td>71%</td>
<td>29%</td>
</tr>
<tr>
<td>Require less water</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>Require less fertilizer</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>Require fewer chemicals</td>
<td>33%</td>
<td>68%</td>
</tr>
<tr>
<td>Require less land</td>
<td>28%</td>
<td>72%</td>
</tr>
<tr>
<td>Increase output (for consumers)</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Improved seeds</td>
<td>21%</td>
<td>79%</td>
</tr>
</tbody>
</table>
How many chemicals are approved for organic crops?
Willingness to consume food products

<table>
<thead>
<tr>
<th>Product</th>
<th>Yes</th>
<th>No</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM Salmon</td>
<td>27</td>
<td>53</td>
<td>20</td>
</tr>
<tr>
<td>GM Papaya</td>
<td>20</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>GM sweet corn</td>
<td>25</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>GE Potato</td>
<td>29</td>
<td>48</td>
<td>21</td>
</tr>
<tr>
<td>GE Apple</td>
<td>29</td>
<td>43</td>
<td>24</td>
</tr>
<tr>
<td>GE Milk</td>
<td>21</td>
<td>36</td>
<td>38</td>
</tr>
<tr>
<td>Org Beef</td>
<td>13</td>
<td>79</td>
<td>9</td>
</tr>
<tr>
<td>Org Apple</td>
<td>9</td>
<td>83</td>
<td>7</td>
</tr>
<tr>
<td>Org wheat/bread</td>
<td>21</td>
<td>62</td>
<td>17</td>
</tr>
</tbody>
</table>
Trust in organizations regarding information about food safety

- Health Canada
  - Completely distrust/Distrust: 4%
  - Neither trust not distrust: 15%
  - Trust/Completely Trust: 79%
  - Don't know: 2%

- The Canadian Food Inspection Agency (CFIA)
  - Completely distrust/Distrust: 5%
  - Neither trust not distrust: 18%
  - Trust/Completely Trust: 74%
  - Don't know: 3%

- Provincial agriculture agencies
  - Completely distrust/Distrust: 5%
  - Neither trust not distrust: 26%
  - Trust/Completely Trust: 64%
  - Don't know: 5%

- Agriculture and Agri-food Canada
  - Completely distrust/Distrust: 4%
  - Neither trust not distrust: 23%
  - Trust/Completely Trust: 67%
  - Don't know: 7%

- Animal welfare advocacy organizations
  - Completely distrust/Distrust: 18%
  - Neither trust not distrust: 40%
  - Trust/Completely Trust: 37%
  - Don't know: 6%

- Farmer organization
  - Completely distrust/Distrust: 6%
  - Neither trust not distrust: 31%
  - Trust/Completely Trust: 58%
  - Don't know: 4%

- Environmental advocacy organization
  - Completely distrust/Distrust: 11%
  - Neither trust not distrust: 39%
  - Trust/Completely Trust: 44%
  - Don't know: 6%

- Consumer advocacy organizations
  - Completely distrust/Distrust: 6%
  - Neither trust not distrust: 41%
  - Trust/Completely Trust: 48%
  - Don't know: 5%

- Retailers
  - Completely distrust/Distrust: 18%
  - Neither trust not distrust: 49%
  - Trust/Completely Trust: 31%
  - Don't know: 2%

- Governments agencies/authorities
  - Completely distrust/Distrust: 9%
  - Neither trust not distrust: 30%
  - Trust/Completely Trust: 59%
  - Don't know: 2%

- Universities
  - Completely distrust/Distrust: 4%
  - Neither trust not distrust: 26%
  - Trust/Completely Trust: 64%
  - Don't know: 6%

- Food processors
  - Completely distrust/Distrust: 22%
  - Neither trust not distrust: 46%
  - Trust/Completely Trust: 28%
  - Don't know: 4%
Top 3 consumer food values

- Nutrition: 26% 2nd, 22% 1st, 16% 3rd
- Price: 14% 1st, 18% 2nd, 25% 3rd
- Taste: 19% 1st, 20% 2nd, 16% 3rd
- Safety: 17% 1st, 11% 2nd, 10% 3rd
- Origin: 11% 1st, 7% 2nd, 7% 3rd
- Naturalness: 6% 1st, 8% 2nd, 6% 3rd
- Convenience: 3% 1st, 4% 2nd, 8% 3rd
- Appearance: 2% 1st, 4% 2nd, 5% 3rd
- Environment impact: 4% 1st, 3% 2nd, 3% 3rd
- Fairness: 1% 1st, 3% 2nd, 3% 3rd
- Tradition: 1% 1st, 1% 2nd, 1% 3rd

% of respondents
Trust in Canada’s food system

- **42%** Farmers/Producers
- **39%** University Researchers
- **36%** Canadian agriculture overall
- **30%** Canada’s food system overall
- **22%** Grocery stores
- **15%** Restaurants
- **15%** Government
- **14%** Food Processors/Manufacturers*

Source: Canadian Centre for Food Integrity
Concluding thoughts

- The Canadian public knows little about farming
- Some consumers don’t want to learn more
- Farmers are trusted sources of information about food
- The challenge is in establishing communication paths
- Perhaps the biggest challenge Canadian ag faces is the relentless number of lies being spread by activist organizations
- Much of mainstream media and especially the CBC is anti-ag and anti-innovation, which compounds the challenge
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