

## 2021 Research and Innovation Priorities for Apples\*\*

Priority Areas	Strategic Outcomes	Investment Priorities for Research
<b>Maximizing Quality &amp; Minimizing Losses</b>	Outcome/Attained Goal: Crop maturity management and postharvest storage conditions and treatments lead to larger percentage of high quality fruit reaching market, and therefore higher returns for growers.	<ul style="list-style-type: none"> <li>• Postharvest research (storage regimes, disorders and diseases, quality, etc.)</li> <li>• Optimal harvest management – including assessing quality at harvest time (especially during extreme weather conditions, e.g. drought, heat, wind, etc.)</li> <li>• Development of new techniques, alternative control methods, products, and practices for pest management/crop protection (i.e. sudden apple decline)</li> </ul>
<b>Technology, Mechanization, Automation and Efficiencies</b>	Outcome/Attained Goal: Increased production and postharvest efficiencies through the use of the latest technologies and precision agriculture.	<ul style="list-style-type: none"> <li>• Development of new techniques, alternative control methods, products and practices for pest management/crop protection</li> <li>• weather risk mitigation</li> <li>• water use</li> <li>• Labour efficiencies</li> <li>• Modelling (crop production and quality, pest degree day models, data analytics, pathology, etc.)</li> <li>• Remote sensing, software development and robotics</li> <li>• Orchard design</li> <li>• Development of optimized spraying strategies and equipment</li> </ul>
<b>Sustainable Practices</b>	Outcome/Attained Goal: Sustainable cropping practices (crop load management, pest management, training systems, carbon capture, irrigation, fertigation, soil management, nutrition) are optimized according to variety and agro-climatic conditions.	<ul style="list-style-type: none"> <li>• lower environmental impact</li> <li>• herbicide alternatives</li> <li>• Integrated Fruit Production (IFP)</li> <li>• Organics</li> <li>• area wide practices (monitoring and control)</li> <li>• Soil health</li> <li>• Irrigation</li> <li>• Climate change adaptation i.e. greenhouse gas emissions &amp; carbon sequestration</li> <li>• Development of new techniques, alternative control methods, products and practices for pest management/crop protection</li> <li>• Clean plant program</li> </ul>
<b>Variety &amp; Rootstock Development &amp; Evaluation</b>	Outcome/Attained Goal: New varieties and rootstocks are selected according to their performance in the different Canadian apple producing regions. We will have achieved greater market share, domestically and internationally, through new variety breeding and evaluation, scion and rootstock evaluation in all Canadian apple producing regions.	<ul style="list-style-type: none"> <li>• rootstock evaluation</li> <li>• scion regional adaptation and evaluation</li> <li>• genomics</li> <li>• variety breeding and evaluation, including disease resistant cultivars</li> <li>• consumer preference studies</li> </ul>
<b>Enabling Strategy: Knowledge</b>	Outcome/Attained Goal: An adequate portion of research project budgets is dedicated to KTT, to ensure faster technology uptake,	<ul style="list-style-type: none"> <li>• Webinars</li> <li>• Grower meetings and conventions</li> <li>• Newsletters &amp; magazines</li> </ul>

<b>Translation &amp; Transfer</b>	greater awareness of the results of our research and innovation investments and reduced duplication of efforts.	<ul style="list-style-type: none"> <li>• Develop an online presence and repository to share current projects (Cluster and other programs) in each province with a short summary with links to the results (in both languages)</li> </ul>
<b>Broad Marketing Strategy</b>	Outcome/Attained Goal: Consumer preferences are identified and marketers & retailers are informed of the preferences.	<ul style="list-style-type: none"> <li>• economic impact study of Canadian apples</li> <li>• economic study on launch and distribution of new varieties, club varieties</li> <li>• evaluation of market structure and supply chain challenges</li> </ul>

\*\*including but not limited to, and not in order of importance

*In addition to the above noted strategic priorities, there is support for the creation of a National Promotional Research Agency (NPRA). It is felt that the benefits to the sector of the creation of such an agency would include better coordination, collaboration and funding on research initiatives.*