INTELLECTUAL PROPERTY AND COMMERCIALIZATION POLICY

Effective Date:	December 11, 2020
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1 EXECUTIVE SUMMARY

1.1 The Intellectual Property (IP) and Commercialization Policy is guided by RDAR's goal of maximizing the commercial benefit of intellectual property. The Policy and the actions of RDAR are to ensure that its research investments are results driven and support outcomes, innovation and competitiveness. RDAR's Policy on IP is to be supportive, not complacent, on establishing expectations and facilitating relationships that bring new technology and innovation to practice.

1.2 The IP and Commercialization Policy encourages industry partnerships inclusive of for-profit and non-profit organizations with financial and/or intellectual contributions to advance the innovation.

1.3 RDAR claims no rights of ownership of IP associated with a grant. However, the IP and Commercialization Policy provides guidelines on IP ownership through early establishment of an IP Protection Plan by the grantee which will clearly document ownership and assignment of IP. In cases where grantees are unable to follow the IP Protection Plan or maintain IP arising from the research, any arising IP will be reported to RDAR prior to any public disclosures. This is to allow RDAR to have the first option to negotiate ownership of the IP and seek out a suitable partner to reassign ownership.

1.4 The IP and Commercialization Policy provides licensing guidelines for research partnerships and recommends the first right to negotiate an exclusive or non-exclusive license be given to industry partners in exchange for supporting the costs of IP protection and/or support for follow-up research.

1.5 Research that may not yield useful IP or have an obvious commercialization path but may provide long-term benefit for the agricultural industry will be supported through open innovation networks.

2 DEFINITION OF KEY TERMS

2.1 Definitions that establish the meaning of key terms can be found at the end of the policy in Section 15.

3 PURPOSE

3.1 The IP and Commercialization Policy seeks to align to RDAR's mandate to support results-driven agriculture research priorities and programs that will increase competitiveness and profitability of Alberta's agriculture industry. It establishes guidelines and recommendations for RDAR staff, grantees and partners in consideration of intellectual property that may arise from RDAR's programs.

4 GUIDELINES

4.1 RDAR-funded research should be focused on questions that address problems or opportunities for Alberta agriculture. In addition, preference will be given to the translation of research results into solutions that stimulate economic growth. RDAR has a flexible and inclusive approach to research funding that reflects the diverse nature of the Canadian agricultural industry and its academic partners. However, RDAR will give preference to research projects that include industry partners that collaborate in planning and funding the research as well as executing a path to commercialization.

5 BENEFITS TO ALBERTA PRODUCERS AND CANADIAN AGRICULTURE

5.1 Research proposals must articulate potential benefits to Alberta producers and Canadian agriculture. This will include documentation of benefits to producers as well as an estimate of commercial value for the industry partner(s).

6 COMMERCIALIZATION

6.1 The path from early-stage research ideas to commercialization can be long, difficult, and unpredictable. Significant additional late-stage investments and knowledge of the marketplace are required for successful commercialization. It is rare for researchers to succeed in this journey on their own. To avoid RDAR-funded innovation stalling on the way to market, applicants will be highly encouraged to seek an industry partner(s). Commercialization of late-stage research is benefitted by clear arrangements for licensing of IP to an industry partner(s).

7 INDUSTRY PARTNERSHIPS

7.1 Applicants are expected to describe a path to commercialization or broad dissemination of results to producers. Given RDAR's objective, applicants are encouraged to seek an industry partner(s) with operations in Canada that can contribute financially (in-kind and/or cash) and intellectually (research and/or market knowledge). Industry partners are expected to be capable in the translation of research outcomes into innovations valuable in the marketplace as well as support go-to-market activities. Industry partners may range from for-profit companies to non-profit organizations. If an applicant is unfamiliar with Canadian agricultural industry, RDAR could provide links to industry agricultural organizations that may lead to effective research partners. (partnership guidance) (guidance for academic partners) (guidance for industry partners) ·

8 INTELLECTUAL PROPERTY (IP) PROTECTION

8.1 Applicants are encouraged to perform a preliminary search for existing IP related to the research prior to applying for funding. To safeguard discoveries and speed the path to commercialization, RDAR will require grantees to articulate an IP Protection Plan regarding how arising IP from the research will be protected and maintained and who is responsible for executing the plan.

8.2 An IP Protection Plan between academic and industry partners regarding ownership and licensing of IP will be considered an advantage in the selection process. If a research project is funded with an industry partner but without an IP Protection Plan between the parties, the grantee(s) are encouraged to revise their project plan to include an IP Protection Plan prior to commencement of the research project.

8.3 Should the grantee fail to follow the IP Protection Plan, RDAR reserves the right to pursue IP protection with assistance from the grantee(s) as needed. Where innovations arising from the research are not protectable, the grantee(s) will describe a plan to effectively disseminate innovations to the Alberta agriculture industry. (additional guidance)

9 Publication and Data Sharing

9.1 Results of the research cannot be kept secret. Peer-reviewed publication and resource sharing are an important part of research projects funded by RDAR. The grantee must provide other partners the opportunity to review proposed publications. Prior to publication, a reasonable amount of time must be assumed by research partners to pursue IP protection if possible and to suggest changes to publications that preserves IP. RDAR requires publications be made freely accessible online in a central or institutional repository as soon as possible after the publication date and after IP is protected. ·

10 Confidentiality

10.1 Previously existing IP and arising IP assets of all participants must be respected. A partner's proprietary data, commercially sensitive information and potentially valuable results or ideas must be protected from unauthorized, inadvertent, or untimely disclosure. Publication of research results should not expose a partner's proprietary information without the partner's expressed permission to do so. However, if student training is part of the research project, research partners will not delay academic progression of the student (e.g. thesis defense or publication).

11 Ownership of IP

11.1 RDAR claims no rights of ownership of IP associated with a grant, however, research agreements between research partners need to include an IP Protection Plan arising from the research.

11.2 In cases where grantees are unable to follow the IP Protection Plan or maintain IP arising from the research, any arising IP will be reported to RDAR prior to any public disclosures. In this instance and within a reasonable amount of time, RDAR has the first option to negotiate ownership of the IP. In the case that RDAR takes ownership, RDAR will seek out a suitable partner to reassign ownership.

12 Licensing of IP by Grantee

12.1 When industry partners co-sponsor research, research agreements between parties can become stalled in the negotiation of ownership and licensing of IP. To enable a smoother path to market and encourage simpler negotiation between parties, RDAR recommends that the industry partner be given the first right to negotiate an exclusive or non-exclusive license. In some cases, a non-exclusive, royalty-free (NERF) license could be negotiated by the industry partner in exchange for supporting the costs of IP protection and/or support for follow-up research.

12.2 If the grantee(s) have not successfully commercialized, assigned or licensed arising IP within three (3) years from official project completion, the grantee will submit a renewed commercialization strategy to RDAR for review and comment. At this point, RDAR will have first option to negotiate for ownership and reassignment of any IP resulting from the project as described in 11.2.

12.3 Should RDAR forego the option to negotiate for ownership of IP, and if warranted, the grantee may be encouraged to apply for additional RDAR funding to continue development of the arising IP.

13 OPEN INNOVATION NETWORKS

13.1 Early-stage research often follows a long and uncertain path to application and commercialization. Therefore, allowance will be made to support research that is not expected to yield useful IP nor have an obvious commercialization path but may provide long-term benefit for the agricultural industry (e.g. environmental and consumer benefits). To support early-stage research in high-value research areas, RDAR will consider projects that are part of an open-innovation network in targeted areas of interest. Participation in open-innovation networks and effective publication and dissemination of results may preclude the need for industry partners and a commercialization strategy.

14 ADDITIONAL GUIDANCE

14.1 Intellectual Property:

14.1.1 Executing a signed research agreement prior to commencing a research project is a best practice for the management of IP. The ownership and protection of IP generated in the collaborative research partnerships should be carried out according to the policy described above. Participants are urged to discuss intellectual property issues at the earliest stages in the development of a partnership.

14.1.2 Academic partners often have specific policies regarding ownership of IP arising from research carried out at the institution. These policies usually apply to faculty, students, postdoctoral fellows and staff involved in the research, and they must be consistent with the collective agreement between the institution and its faculty.

14.1.3 While institutional IP policies may differ with respect to ownership, obligation to disclose, royalty-sharing and conflict of interest, they have a common mandate to facilitate the transfer and commercialization of IP wherever appropriate. In addition to the academic policy, other factors that influence IP ownership include intellectual contributions, financial and in-kind contributions, existing (background) IP and conventions within the field of research.

14.1.4 IP arising during a research project can be owned by either partner, or combination of the partners involved in and/or supporting the research, depending on the policies of the academic institutions and/or research agreements in place.

14.1.5 Access to the research results may fall under any one of the following cases, depending on the research agreement put in place: open dissemination with no restrictions, non-exclusive licensing, exclusive licensing, joint ownership, partial assignment of ownership, or full assignment of ownership.

14.2 Research Partnerships:

14.2.1 Whether research by an academic partner is carried out in collaboration with industry and/or other non-academic partners, a research agreement must be executed prior to the start of the project. The agreement covers matters relating to intellectual property, including the rights of each party to ownership and/or access to any IP generated by the project, how the IP will be protected and disseminated, and the impact of IP on publication, confidentiality and liability.

14.2.2 Individual academic institutions and industry partners often have specific requirements. The industry liaison office of the academic partner often can provide advice and services to facilitate the protection, development, transfer and commercialization of IP, including the development of the research agreement and negotiation of the terms of the agreement. The industry liaison office should be consulted at the outset.

14.3 Guidance for the Academic Partner:

14.3.1 The goals and issues of an industry partner are often different from those of the academic partner. The underlying goal of the industry partner is to make a profit and provide value to investors and/or shareholders. The industry partner will often seek to obtain a competitive advantage from the research collaboration for as long as possible.

14.3.2 Usually, the industry partner will integrate results from many different internal and external sources to address a problem or create a new product and results from an academic research project may only provide one component of a solution. Academic research discoveries may represent only a portion of the cost of bringing a new product or service to market. The cost and risk of launching a new product can be extensive relative to the cost of the initial research.

14.3.3 The significance of the industry partner's background IP and the extent of their contribution to the research collaboration, both at the outset and during the execution of the research, should be recognized. There is a sense of urgency in business, particularly in small and medium enterprises (SME), and timelines are often much shorter in industry than in the research setting. Project management and quality standards are more rigorously managed in industry. Timelines may make some projects unsuitable for an industry collaboration.

14.3.4 There are different cultures and approaches to handling information within academia and industry. Academic researchers want to submit journal articles relating to their research as quickly as possible and often on short notice. Some industry partners will want to maintain the confidentiality of the research results for as long as possible; others want to maintain confidentiality of the results until a patent application has been filed.

14.3.5 SMEs often protect their formula, process, design, instrument, or data as trade secrets. The requirement for confidentiality of research results should be discussed early in the process to identify whether or not a collaboration can actually take place and whether or not significant differences exist that may not be able to be dealt with during the balance of the negotiation process.

14.4 Guidance for the Industry Partner:

14.4.1 Academic collaborations can be very beneficial for the industry partner in terms of generating new ideas and important research results, validating the science and/or explaining the science behind the technology. In addition, the collaboration can provide access to potential employees—partners often hire graduates involved in a collaborative project. It is also the case that industry may be more advanced in certain areas than academia, and academic researchers should see

industry partners as a useful, up-to-date source of knowledge and wisdom that should be consulted throughout the project.

14.4.2 Due to conflicting needs, not all industry-sponsored research is appropriate for collaborative research involving graduate student training. For example, research projects that focus on the application of existing technology, provide routine data collection and analysis are not suitable for projects that include student training. The industry partner needs to be aware of the important differences between industry and academic research, the concerns and issues of the academic researchers, and the policies of the academic institution where the collaboration is taking place.

14.4.3 The goal of the academic researcher is to develop and disseminate new knowledge and to educate. Tenure, promotion and funding decisions are usually strongly influenced by the number and impact of the researcher's publications in the scientific literature.

14.4.4 Much of the research conducted by the academic partners is carried out by students and postdoctoral fellows. The participation of students and postdoctoral fellows in academic research projects will have an impact on the structure and timeline of a project. Recruiting students and postdoctoral fellows to work on the research may delay the start of the project. Students must take courses and meet other academic requirements, which can affect the progress of the research. Students need projects that involve a challenging academic research question rather than only product developmental activities, and since their graduate studies cover several years, short-term projects may not be suitable. Students may be required to defend their thesis, and all theses will eventually be published by being sent to the academic library and deposited with the National Library of Canada.

14.4.5 Academic institutions across the country have different policies relating to ownership of IP (owned by the academic partner, industry partner or a combination), and industry partners may find this an added complexity when working with different institutions. These policies are usually based on the institution's collective agreement with the faculty and may not be negotiable.

15 Definition of Key Terms

15.1 Commercialization is the process by which IP generated during a RDAR-supported project is introduced into the marketplace. Commercialization is often broken into phases – capturing the full lifecycle of a technology from initial idea, through the launch of a product or technology, to its mass adoption.

15.2 Industry Partner is a Canadian organization active in Alberta agriculture that is interested in partnering and co-sponsoring the research. This can be a corporation, cooperative, partnership, association, etc. that can provide a useful, up-to-date source of knowledge and wisdom that should be consulted throughout the project. Industry partners also will provide co-funding (cash and in-kind) and be a natural receptor for the outcomes from the research.

15.3 Academic Partner is an academic organization that takes the lead in performance of the research. The research partner will most often be an accredited post-secondary academic institution or research institute that has the capabilities to carry out the proposed research and actively collaborate with the industry partner(s).

15.4 Research Partners are industry and academic partners that collaborate in submission of the RDAR funding application and in performance and reporting of the research. The research partners both contribute to setting objectives and milestones, interpreting results, protecting arising IP and translating research outcomes into useable innovations.

15.5 Intellectual Property (IP) is the term given to knowledge and created works where ownership or a right to use may be legally protected. It includes proprietary and/or technical information and knowledge, including scientific and technical discoveries and any knowledge in a form which is useful and transferable, and which may be protected by law. It can be legally protected through various mechanisms, including patents, copyrights, trademarks, trade secrets, industrial designs and plant breeders' rights.

15.6 Grantee is the organization that is submits the research application and receives research funding from RDAR.

15.7 Research Agreement is a legal agreement between research partners that stipulates, among other details, cash and/or in-kind contributions, confidentiality, publication policy, IP ownership and the IP protection plan.

15.8 IP Protection Plan is the documentation of the strategy that the grantee(s) will follow to protect and maintain IP arising from the project prior to public disclosures (e.g. publications or conference presentations.

15.9 IP Maintenance is required to maintain the value of arising IP. This includes the continued privacy of trade secrets, filing of provisional or non-provisional patent applications, national patent or trademark filings and payment of maintenance costs for granted patents or trademarks.

15.10 Existing IP (aka "Background IP") refers to IP that was developed prior to the start of a project. It will often include existing testing methods, procedures, models, tools, know-how, etc. Background IP can be in any form of IP, whether protectable or not.

15.11 Arising IP (aka "Foreground IP") refers to IP generated during a RDAR-funded project. Arising IP typically includes the project outcomes but may include anything created using project funding or resources.

15.12 Patents are a form of IP that provide the legal right to exclude others from making, using, or selling an invention for a limited period of years in exchange for publishing an enabling public disclosure of the invention. In most countries, patent rights fall under private law and the patent holder must sue someone infringing the patent to enforce his or her rights. Patents can provide an essential advantage in highly competitive fields.

15.13 Trade Secret is a form of IP that loses its value when revealed, independently created or reverse engineered. There is currently no uniform definition of 'trade secrets' or confidential information that has been adopted by Canadian courts. Some trade secrets may be patentable inventions, while others are not. Unlike a patent, a trade secret is a non-registerable form of IP.

15.14 Copyright is the exclusive right to produce, reproduce and publish an original work of authorship (e.g. a technical report, manuscript, presentation slide), artistic work (e.g. technical drawings, photos, videos, artists renderings), software code, etc. By law, copyright protection vests with the author automatically as soon as the work is created.

15.15 Trademark is a type of intellectual property consisting of a recognizable sign, design, or expression which identifies products or services of a particular source from those of others.

15.16 License is a written contractual agreement between the owner of IP (the licensor) granting permission to another party (the licensee) to use the IP under specific conditions. Licenses typically include a term (period of time during which the IP is licensed), a territory (geographic scope of the license), a field of use (extent of permissible use or application of the IP), and a royalty (payment structure). The license defines whether the licensee is receiving exclusive, or non-exclusive rights to practice the IP.

15.17 Early-Stage Research (aka “basic research”) refers to fundamental research with the aim of improving scientific theories for better understanding and prediction of natural or other phenomena.

15.18 Late-Stage Research (aka “applied or translational research”) refers to uses the outcomes of early-stage research to develop technology or innovations which can be used to improve products, reduce cost or shorten production time.

15.19 Open-Innovation Networks allow knowledge to flow freely between partners to accelerate innovation and expand potential uses of that innovation. Open innovation can be understood as the antithesis of the traditional vertical integration approach where internal R&D activities lead to internally developed products that are then distributed externally.