

Research and Development Director in Agri-Bio

National Occupational Standard Summary



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Definition of occupation | **Research and Development Director in Agri-Bio**

The Research and Development (R&D) Director in Agri-Bio is a lead scientist whose position entails overseeing the design, development, and implementation of research programs, projects, experiments, and/or trials, and is a senior member of the team overseeing scale-up and commercialization of the research. The R&D Director is likely to be responsible for administrative duties such as budgets, timelines, reporting to funders, and communicating the project updates and achievements, where applicable. They may also undertake responsibilities associated with the management of exempt (professional) staff, as well as ensuring compliance with protocols, guidelines, standard operating procedures (SOPs), and other applicable regulations.

The R&D Director generally reports to a vice president, providing advice and guidance to the executive team in areas such as strategic research focus and the identification and protection of intellectual property. The Director may also make scientific presentations at advisory boards, key scientific meetings, and external committee meetings. When communicating, the Director must be capable of summarizing across a broad range of research studies and presenting complex scientific ideas in a format easily understood by non-scientific personnel.

Level of education, training or designations requirements

Typical Education Required	Secondary	College	Bachelor	Master	PhD
Typical Starting Experience	0-5 yrs.	5-10 yrs.	10-15 yrs.	15-20 yrs.	20+ yrs.

- PhD or MSc with relevant experience in a related life science, biological science, or engineering field (biology, biochemistry, microbiology, animal science, plant science, immunology, biomedical engineering, biomedical sciences, toxicology, pharmacology)
- Minimum five to ten years' experience in the biotechnology industry in progressive levels of management/supervisory roles

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- Experience with project management is essential
- If clinical studies are involved in research, relevant experience in conducting and supervising clinical studies is recommended
- Peer-reviewed scientific publications in indexed journals
- Dissemination of research in international conferences
- Three or more years of postdoctoral experience abroad or at another institution than the PhD institution is an asset
- Experience in another discipline such as management or business is an asset
- Experience in supervision and training of students and postdoctoral trainees/fellows is an asset

This role works in the following subsectors:

Applicable To	Bio-Health	Agri-Bio	Bio-Industrial	Bio-Energy
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The level of complexity of the role is:

Span of Complexity Levels	Foundational	Operational	Specialist/ Management	Expert/Executive
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RESEARCH AND DEVELOPMENT DIRECTOR IN AGRI-BIOTECH COMPETENCY SUMMARY

Competencies	Complexity Level Required			
	1 Foundational	2 Operational	3 Specialist/ Manager	4 Expert/ Executive
Core				
Research Ethics				
Technical				
Budget Management				
Developing &/or Overseeing an R&D Program				
Designing an R&D Project				
Planning & Implementing R&D Projects				
Commercialization of Research Results				
Recruiting & Managing the R&D Team				
Managing Quality in R&D				
Liaising with Key Stakeholders and Influencers				
Professional Writing for R&D				
Knowledge Transfer				
Industry Regulatory Competencies				
Legal/Regulatory Compliance in R&D				
Occupational Health & Safety in R&D				

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Competencies	Complexity Level Required			
	1 Foundational	2 Operational	3 Specialist/ Manager	4 Expert/ Executive
Personal and Professional				
Collaboration				
Continuous Learning				
Creative Leadership				
Critical Thinking/Decision-Making in R&D				
Effective Interpersonal Communication				
Professionalism/Emotional Intelligence				

Core competencies

Research Ethics

Exercises integrity and professionalism in order to ensure all research and development (R&D) is performed in a responsible manner in keeping with the ethical principles of beneficence and nonmaleficence.

Technical competencies

Budget Management

Establishes, tracks, and manages budgets for the team/project, laboratory/department and/or organization to ensure sound fiscal responsibility with designated funds.

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Developing &/or Overseeing an R&D Program

Defines the focus and strategy of the laboratory/organization's R&D program, determines which projects will be included in the program, generates funding to support the program, and oversees the program from inception to commercial development if applicable.

Designing an R&D Project

Defines the parameters and specifications of a research/development project, including the project scope, objective, goals, resource requirements, project timeline, and budget. Also designs the experiments and identifies the testing and validation methodologies that can be employed to create a manageable research/development project and if applicable, takes the application, translation and scale-up of research discoveries/results into consideration during the design phase.

Planning & Implementing R&D Projects

Prepares a deliverable-oriented work breakdown structure that details milestones, resources, schedules, and budget for the planned project outcomes. Also develops a risk management plan, manages activities, provides project updates, and oversees project close-out in order to ensure project outcomes are delivered on time and in budget.

Commercialization of Research Results

Works within an interdisciplinary team to assist with, manage, and oversee the research adaptation and scale-up process from inception to sustainable and profitable high-volume production in order to ensure the science developed in the lab can be translated into practical, commercially viable products/processes.

Recruiting & Managing the R&D Team

Recruits and manages a qualified workforce in order to ensure the organization's R&D program and projects are properly staffed and that the team is managed in a way that fosters not only compliance to requirements and protocols, but also high performance, strong morale, and a high retention rate.

Managing Quality in R&D

Implements and monitors the standard quality management processes in order to ensure that all R&D activities are conducted according to required standards and create reproducible results in the tests performed, the data generated, the results reported, and the products and technologies created.

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Liaising with Key Stakeholders and Influencers

Liaises with investors, government, regulatory authorities, and other influential organizations to build positive relationships and support for the laboratory/organization's R&D program.

Professional Writing for R&D

Develops and publishes scientific reports and other technical documents in order to chronicle and advance the body of R&D knowledge. Also creates project reports to ensure that all relevant R&D information is tracked and available to stakeholders as required and to demonstrate compliance with all regulatory requirements.

Knowledge Transfer

Shares and disseminates technical or scientific knowledge, experience, and ideas from one individual or source to other individuals, groups, or organizations for purposes such as building others' knowledge, training them in a new process, ensuring reproducibility in the event of absence, creating efficiencies, preserving corporate memory, and providing a foundation for scientific collaboration and development.

Industry regulatory competencies

Legal/Regulatory Compliance in R&D

Manages R&D documents, data, tools, resources, waste products, processes, and procedures in accordance with relevant safety, security, environmental, and ethical protocols—including intellectual property protection—in order to ensure legal protection and compliance with regulatory and funding requirements.

Occupational Health & Safety in R&D

Actively participates in/manages the health and safety program for R&D staff and their workplace to ensure the health and safety of staff. Also ensures the organization's compliance with legislation and regulations related to safe work practices and procedures, corporate procedures, and facility health, safety, and environmental rules.

Personal and professional competencies

Collaboration

Works effectively with others to foster trust and cooperation in the achievement of R&D goals and project objectives.

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Continuous Learning

Continuously undertakes introspection to understand current knowledge and skills in a changing environment, recognizes personal knowledge gaps, undertakes independent action to actively seek targeted opportunities to acquire new knowledge, and reflects on how new knowledge can be integrated and applied.

Creative Leadership

Creates clarity of purpose for colleagues, teams, staff, and the organization, inspiring them to transform an idea or vision into reality, cultivating innovative solutions even in the face of complex and challenging circumstances, and effectively managing change.

Critical Thinking/Decision-Making in R&D

Analyzes, synthesizes, and evaluates arguments, information, and data and exercises sound judgement in order to solve problems and make decisions that strategically benefit the laboratory/organization's R&D activities and strategy.

Effective Interpersonal Communication

Communicates in ways that create shared understanding, generate support for the achievement of goals and objectives, and facilitate conflict resolution and problem-solving.

Professionalism/Emotional Intelligence

Applies emotional and professional sensitivity to become aware of own emotions and those of others they interact with in such a way that they can manage personal and professional decorum and maintain productive relationships.

USE NATIONAL OCCUPATIONAL STANDARDS TO:

- ✓ Build a job description
- ✓ Plan professional development
- ✓ Map career progression and succession planning
- ✓ Benchmark compensation

View the full National Occupational Standards at biotalent.ca/NOS

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