

Information and Communication Technology (ICT)

LICENCE BIOTECHNOLOGIE VEGETALE ET AMELIORATION
DR. BARGHOUT N.

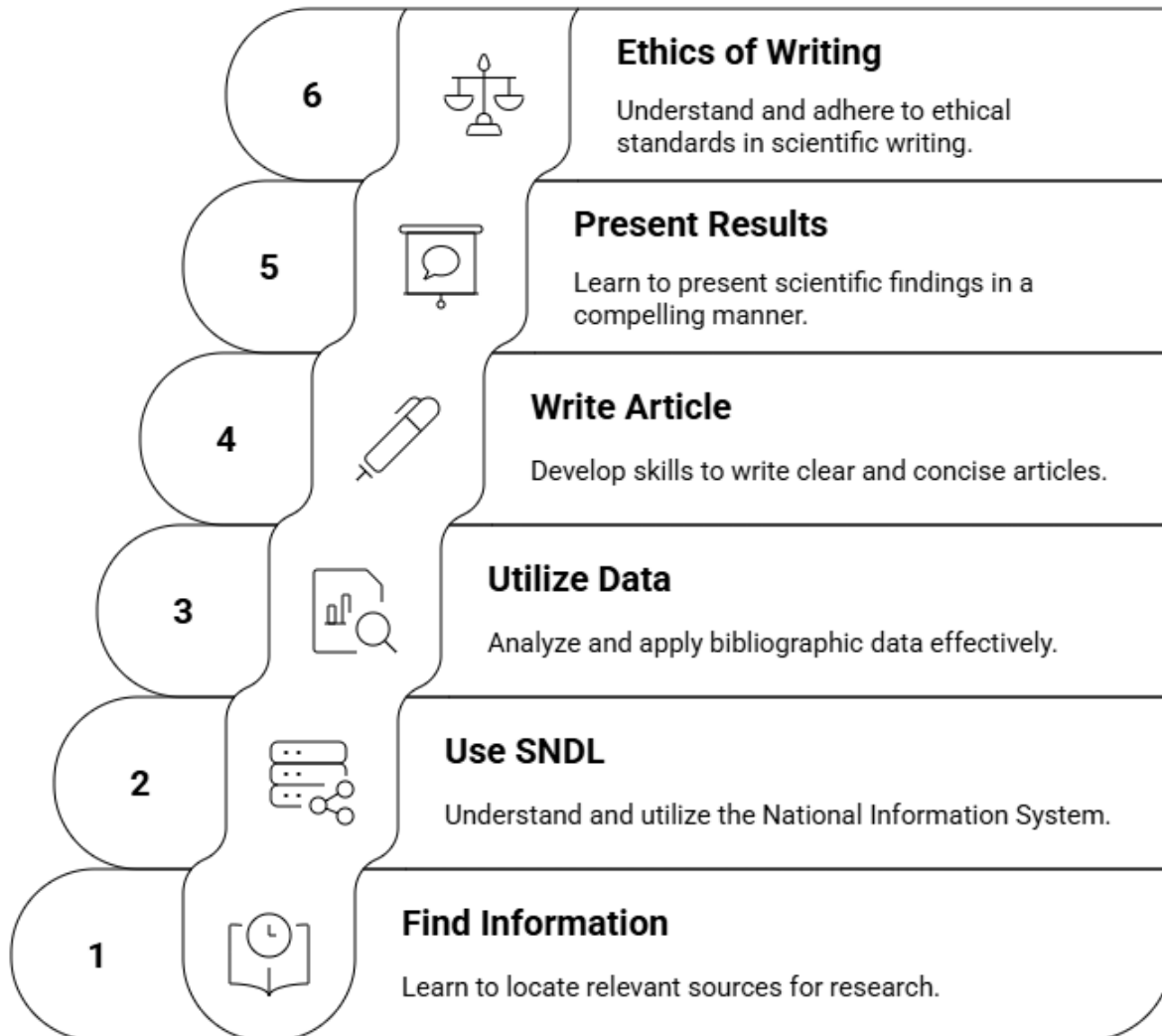
General presentation and objectives

This course is intended for third-year undergraduate students majoring in Plant Biotechnology and Plant Improvement, within the Department of Biotechnology, Faculty of Natural and Life Sciences, at Ferhat Abbas University Sétif 1. It is structured into five main chapters, each including an introductory phase, a learning process, and an assessment component through tutorials, designed to strengthen knowledge acquisition. At the end of this course, students will be able to:

- ✚ Identify, differentiate, and select the main documentary sources (books, journals, theses, dissertations) required for research work.
- ✚ Develop proficiency in using the National Online Documentation System (SNDL).
- ✚ Retrieve, organize, and synthesize information according to a specific research objective.
- ✚ Understand the principles, steps, and standards for writing a clear, well-structured scientific paper that meets academic requirements.
- ✚ Develop scientific communication skills through the preparation and presentation of oral or written reports, enabling the effective dissemination of research findings.
- ✚ Demonstrate awareness of the ethical and deontological dimensions of research and scientific writing, with an emphasis on academic integrity, plagiarism prevention, and honesty in the presentation of data and results.

✚ Conceptual carte of the course

Mastering Bibliographic Research



Semestre 5:

Unité d'enseignement découverte

Matière : TIC

Crédits : 1

Coefficient : 2

Objectifs de l'enseignement : Permettre aux étudiants d'accéder aux moteurs de recherche bibliographiques qui leur permettront d'analyser les articles et rédiger leur mémoire.

Connaissances préalables recommandées : Maîtrise de l'outil internet.

Contenu de la matière :

1- introduction à l'initiation à la recherche bibliographique

Chapitre 1- où trouver l'information

- Les ouvrages
- Les revues scientifiques
- Les thèses
- Les mémoires

Chapitre 2 - utilisation du système d'information national (SNDL)

Chapitre 3- comment exploiter les données bibliographiques

Chapitre 4- comment rédiger un article

Chapitre 5 comment exposer des résultats scientifiques

Chapitre 5: éthique de la rédaction scientifique

Mode d'évaluation : : Contrôle continu 50% et Examen semestriel 50%

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1 Sources of the information

The documents used to disseminate scientific information are diverse and available in various formats. The most common classification distinguishes between conventional and non-conventional documents, a distinction that mainly concerns their dissemination channels. A book published by a recognized publisher is considered a conventional document, whereas an unpublished report with limited distribution, produced by a laboratory or research center, is regarded as non-conventional. Other distinctions can also be made, such as between open-access and restricted-access documents, single-level documents (e.g., a book) and two-level documents (e.g., an article within a journal), or electronic and printed documents.

Access to scientific information is ensured through:

- ❖ Books
- ❖ Scientific journals
- ❖ Doctoral theses
- ❖ Master's memory

1.1 Books

Also called a monograph (when it deals with a single subject), a book is by definition a publication of more than 48 pages (Figure 1). It is identified by an **ISBN (International Standard Book Number)**. The ISBN, composed of **13 digits**, is assigned to each edition of a book. For Belgium, France, and French-speaking African countries, ISBNs are managed by the Agence Francophone pour la Numérotation Internationale du Livre (AFNIL) in Paris.



Figure 1 : book figured his ISBN.

1.1.1 The Digital Challenge

With the evolution of the Web and mobile devices, e-book technology has now reached a mature stage. Publishers and online bookstores regularly offer their titles in multiple digital formats (at least PDF and ePub), alongside printed editions. However, digital book sales have yet to take off. At present, they account for less than 10% of total book sales.

The availability of scientific e-books is nevertheless a reality—virtually all recent publications from major publishers such as Springer, Elsevier, or Wiley are available in digital format (Figure 2). Yet, purchasing an e-book still raises several unresolved issues (Figure 3). For books protected by DRM (Digital Rights Management), it is impossible to copy the file from one computer or e-reader to another.

- ↳ Lending digital books is not straightforward (how can a book be lent to multiple users simultaneously? For how long? How should this lending be reflected in the purchase price?).
- ↳ The price of e-books is not particularly attractive; they are on average only about 30% cheaper than printed books and do not benefit from a reduced VAT rate, unlike printed books, which are taxed at 6% in Belgium or 5.5% in France.



Figure 2 : The famous editors of the scientific books.

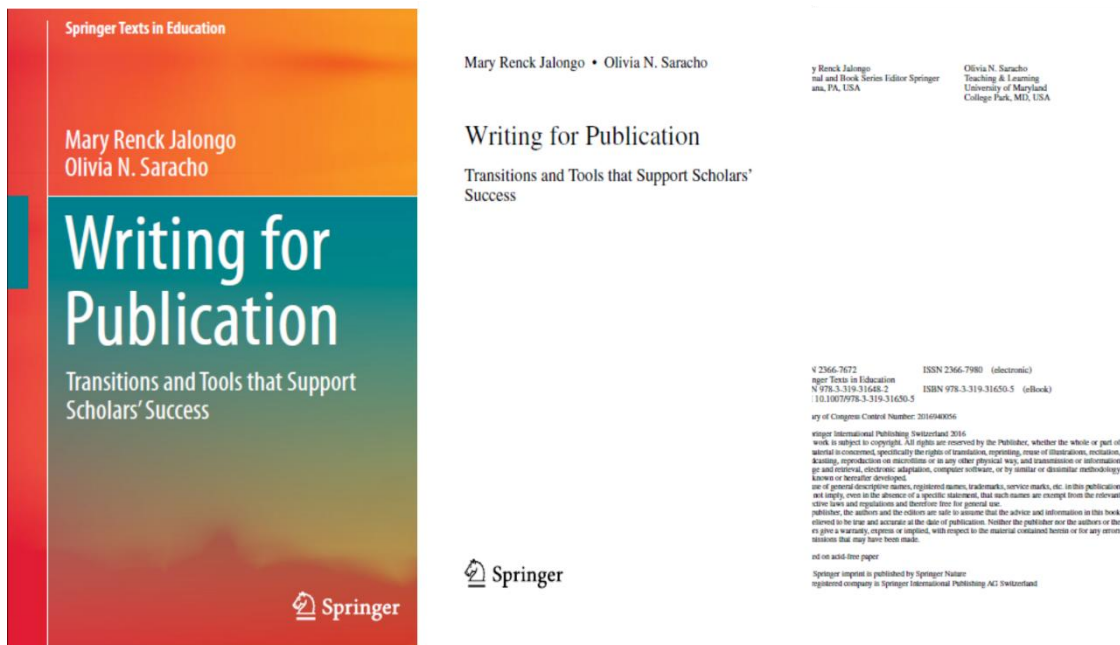


Figure 3 : Example of Springer edited book with his ISBN and eISBN.

1.2 Scientific journals

A **periodical** (Figure 4), also called a **journal** (or **revue** in French), is a **publication issued at regular intervals**. It serves as a continuous source of up-to-date scientific information. In the

scientific field, periodicals are the most important type of scientific documents, both in terms of their content and their number.

Periodicals are identified by a unique number, the **ISSN (International Standard Serial Number)** or **eISSN**. It consists of eight digits. The eISSN is assigned to electronic journals or to the online versions of printed periodicals.

A periodical generally publishes **one volume** per year. Each volume may contain several **issues** (also called “**numbers**”). For instance, a monthly journal will typically publish 12 issues per year, while a quarterly journal will publish 4. For some electronic-only journals, the concept of an issue may no longer apply, as articles are released online as soon as they are ready.

The scientific article (Figure 5) has become a fundamental component of scholarly communication. It highlights unresolved research questions, describes ongoing studies, presents the findings of recently completed research, reports applications of scientific work, and provides an overview of current knowledge in a given field.

The screenshot shows the ScienceDirect website interface for the journal Food Research International. At the top left is the ScienceDirect logo. To its right are the links 'Journals & Books', a search icon, and buttons for 'Register' and 'Sign in'. Below this is a dark blue banner for the journal. On the left of the banner is a thumbnail of the journal cover for Volume 161, Issue 11, November 2022. To the right of the thumbnail, the journal title 'Food Research International' is displayed, along with the text 'Supports open access'. Further right, the journal's CiteScore (11.1) and Impact Factor (7.425) are shown. Below the banner is a navigation bar with links for 'Articles & Issues', 'About', 'Publish', 'Order journal', 'Search in this journal', 'Submit your article', and 'Guide for authors'. The main content area is divided into two sections. The left section, titled 'Latest issue', highlights 'Volume 161' as 'In progress' for 'November 2022'. The right section, titled 'About the journal', provides a description: 'Food Research International provides a forum for the rapid dissemination of significant novel and high impact research in food science, technology, engineering and nutrition. The journal only publishes novel, high quality and high impact review papers, original research papers and letters to the ...'. A link 'View full aims & scope' is provided below the description. A 'FEEDBACK' button is located at the bottom right of the 'About the journal' section.

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| <p>For Authors</p> <ul style="list-style-type: none"> Track your accepted paper Journal Finder Researcher Academy Rights and permissions Journal Article Publishing Support Center | <p>For Editors</p> <ul style="list-style-type: none"> Publishing Ethics Resource Kit Guest Editors | <p>For Reviewers</p> <ul style="list-style-type: none"> Reviewer recognition |
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Journal of Food Biochemistry

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 Impact factor (2021): 3.654
 Journal Citation Reports (Clarivate, 2022): 179/296 (Biochemistry & Molecular Biology) 58/143 (Food Science & Technology)
 Online ISSN: 1745-4514
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Announcing a New Partnership

From January 1, 2023, *Journal of Food Biochemistry* will become part of a partnership between Wiley and Hindawi and will be fully open access. *Journal of Food Biochemistry* will remain a Wiley title but will be published and hosted by Hindawi and will benefit from Hindawi's experience and expertise in publishing open access titles. *Journal of Food Biochemistry* will continue to undergo a rigorous peer review process ensuring that quality remains high. Manuscripts published after January 1, 2023 will be published as open access articles, making them immediately free to read, download and share. Authors or their funder will be required to pay an Article Publication Charge upon acceptance. Learn more about [publishing with Hindawi](#).
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Figure 4 : Example of journal have an ISSN, volume and the impact factor.

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Journal of Food Biochemistry

ORIGINAL ARTICLE

Structure characterization and antioxidant activity of carboxymethylated polysaccharide from *Pholiota nameko*

Xu Zhang, Jiaxin Liu, Xi Wang, Hewen Hu, Yanrong Zhang, Tingting Liu, Hui Zhao

First published: 11 March 2022 | <https://doi.org/10.1111/jfbc.14121>

Funding information

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Abstract

The objective of this paper was to prepare the carboxymethyl polysaccharide of *Pholiota nameko* (CPPN) and further evaluate its structural characteristics, water solubility, and antioxidant activities. The optimal carboxymethylation conditions were as follows: 20%



Volume 46, Issue 7
July 2022
e14121



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Shiyang Zhou, Gangiang Huang

Chemical Biology & Drug Design

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The screenshot shows the ScienceDirect interface for a journal article. At the top, there are navigation options like 'View PDF', 'Download Full Issue', and a search bar. The article title is 'Transparency of polymeric food packaging materials' by Susana Guzman-Puyol, José J. Benítez, and José A. Heredia-Guerrero. The journal is 'Food Research International', Volume 161, November 2022, 111792. The article is marked as 'Open access'. The left sidebar contains a table of contents with sections like 'Outline', 'Highlights', 'Abstract', 'Graphical abstract', 'Keywords', and 'References'. The right sidebar features 'Recommended articles' and 'Article Metrics'. A 'FEEDBACK' button is visible at the bottom right of the article preview area.

Figure 4 : Example of scientific articles.

1.3 Doctoral theses

Like journal articles, doctoral theses (Figure 6) represent, though in a less visible way, the scientific activities of researchers. They constitute the final stage in a researcher's training process and demonstrate their ability to conduct independent research work.

A thesis is an unpublished document (not handled by a publisher) and is part of the grey literature; however, it is becoming increasingly visible. Theses are now accessible online and are often made available in open access through institutional repositories.

- Algerian theses: Accessible through the Dspace repositories of Algerian universities.
- French theses: www.theses.fr-<https://tel.archives-ouvertes.fr>

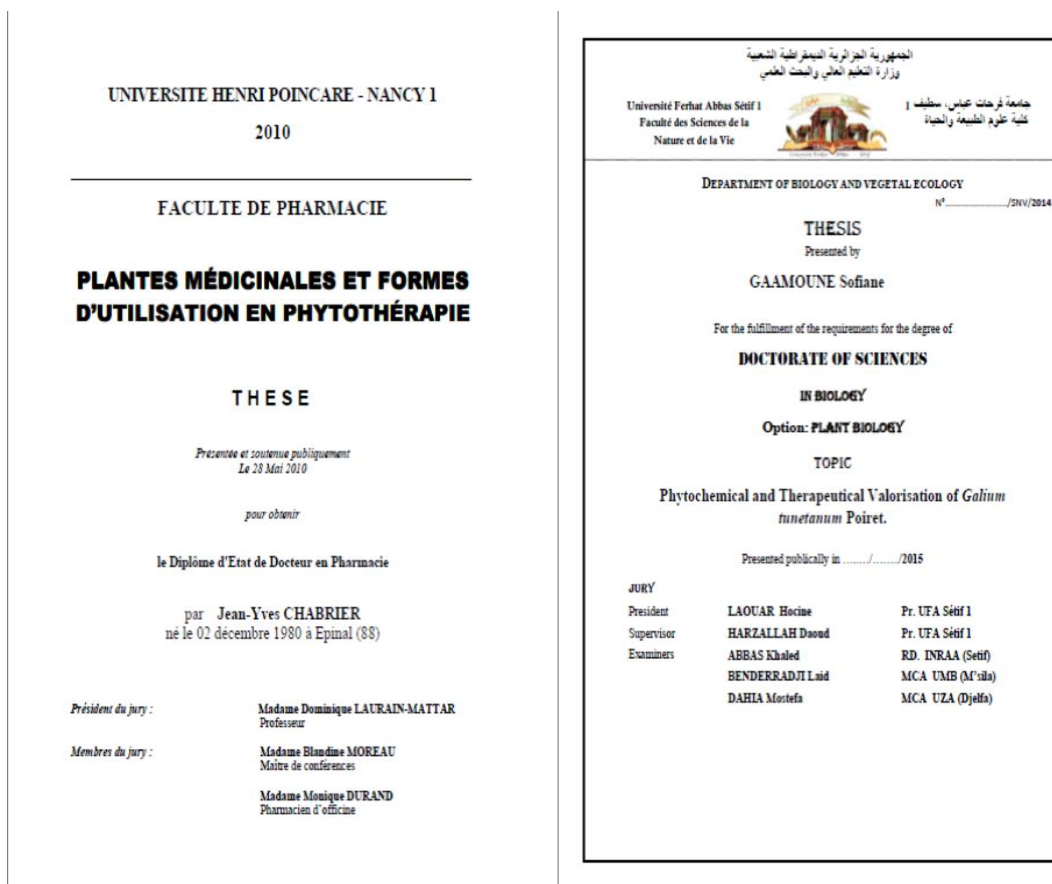


Figure 6 : Example of doctoral theses.

1.4 Master's memory

The master's memory (Figure 7) is a piece of work for which no one yet knows the “answer.” However, it demonstrates the student's mastery of the research process and familiarity with the main scholarly works related to the chosen topic. It represents both an introduction to scientific research and specialized training. Whenever possible, the thesis should constitute an original contribution.

In concrete terms, the thesis is a research report addressing a specific problem within a given field of specialization. It describes:

- what is already known;
- what has been done to address the problem(s);
- what the results mean;
- how these results relate to the research question or issue;

The new problems raised by this research and how they could be addressed—these are referred to as future perspectives or research outlooks.

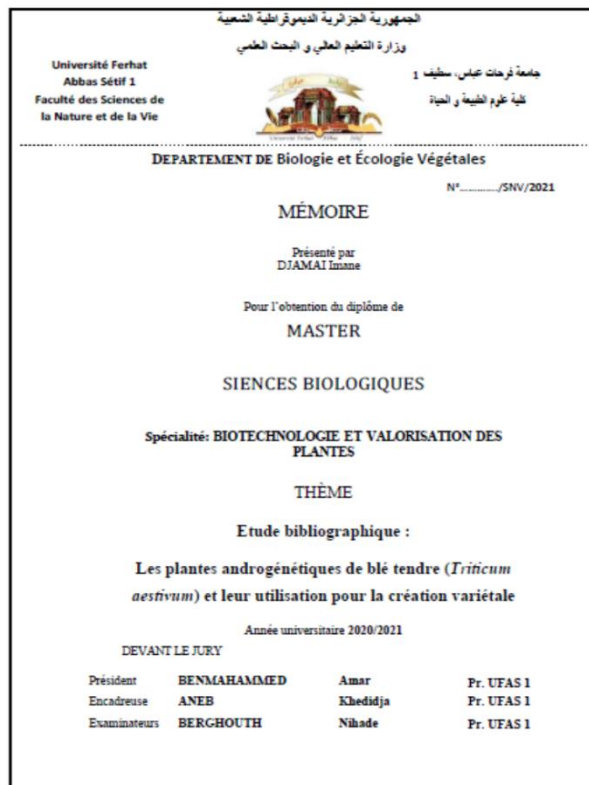


Figure 7 : Example of Master's memory.

2 SNDL: Système National de Documentation en Ligne

Le SNDL (le système National de Documentation en Ligne) (figure 8) was ceated by CERIST (Figure 9) (centre de recherche sur l'information scientifique et technique) under the supervision of DGRSDT (direction générale de la recherche scientifique et du développement technologique). It was officially launched on November 1st, 2011. It is intended for postgraduate students, faculty members, and researchers.

The CERIST also leads a project aimed at identifying, processing, and indexing national scientific output, as well as making it available online. Several resources are already accessible through this portal, including the Algerian Scientific Journals Portal (WebReviews), the Algerian Union Catalog (CCDZ), the National Thesis Reporting Portal (PNST), and the bibliographic databases ALGERIANA and ASA.



Figure 8 : logo of SNDL



Figure 9 : logo of « centre de recherche sur l'information scientifique et technique »

Le SNDL provides access to an extensive and diverse collection of national and international electronic resources, covering all fields of education and scientific research. It offers electronic documentation that is:

- ✓ Varied, including journals, scientific articles, e-books, audiovisual materials, and academic courses.

- ✓ Produced at the national level, developed by CERIST in collaboration with national and international institutions (theses, journals, and databases).
- ✓ Trilingual (English, French, and Arabic).
- ✓ Comprehensive, encompassing all fields of education and scientific research, including life and earth sciences, social and human sciences, and multidisciplinary areas.

2.1 International documentation (acquired through subscriptions)

In terms of access, this documentation is divided into two categories:

- ✚ The first category is freely accessible to all students, faculty members, and permanent researchers within university campuses and research centers.
- ✚ The second category, however, relates specifically to research activities. It is reserved for faculty members, permanent researchers, postgraduate students (PhD and Magister), as well as final-year engineering and Master 2 students.
- ✚ Access to this second category of documentation is location-independent but requires obtaining an individual account.

The account creation process is straightforward and managed by:

- ✚ The laboratory director (or research center/unit director) for faculty members affiliated with a research laboratory (or center/unit) and for postgraduate students (PhD and Magister).
- ✚ The head of the central library, for faculty members not yet affiliated with a research laboratory, as well as for Master 2 and final-year engineering students.

2.2 Procedure for accessing various resources and downloading documents or data

To search for and download documents (see Figures 10–12):

- ♣ Access the SNDL portal: www.sndl.cerist.dz
- ♣ Click on the Login icon.
- ♣ Enter your username and password.

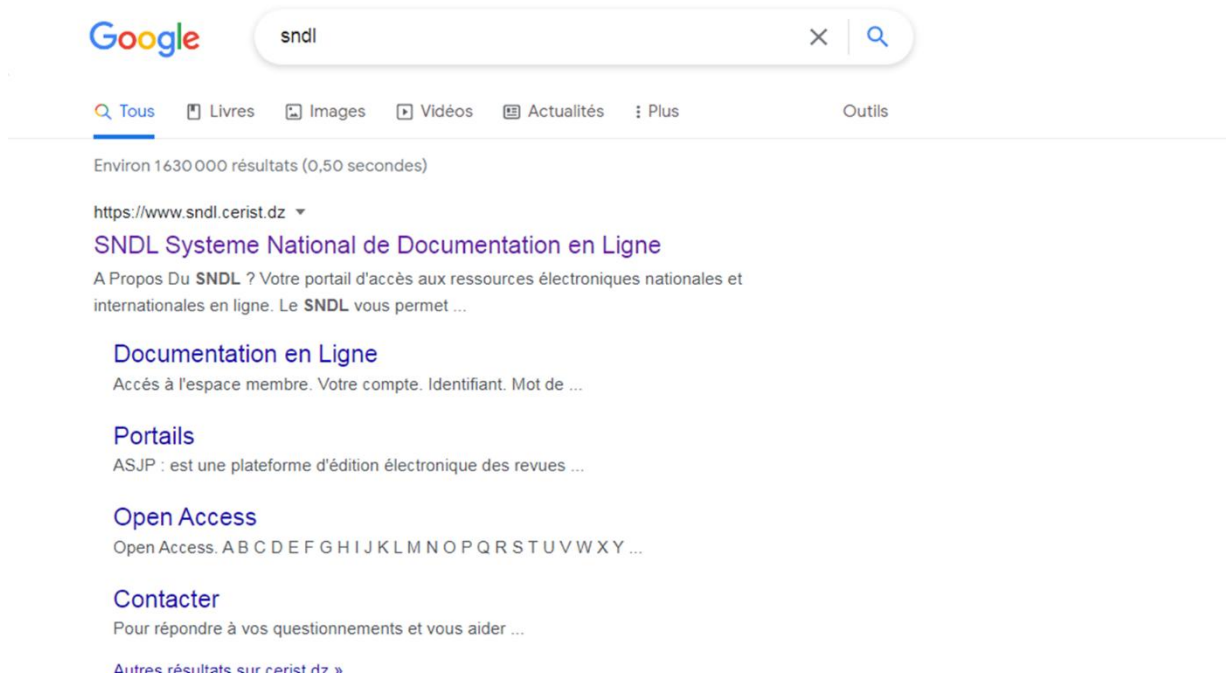


Figure 10 : search of SNDL on google

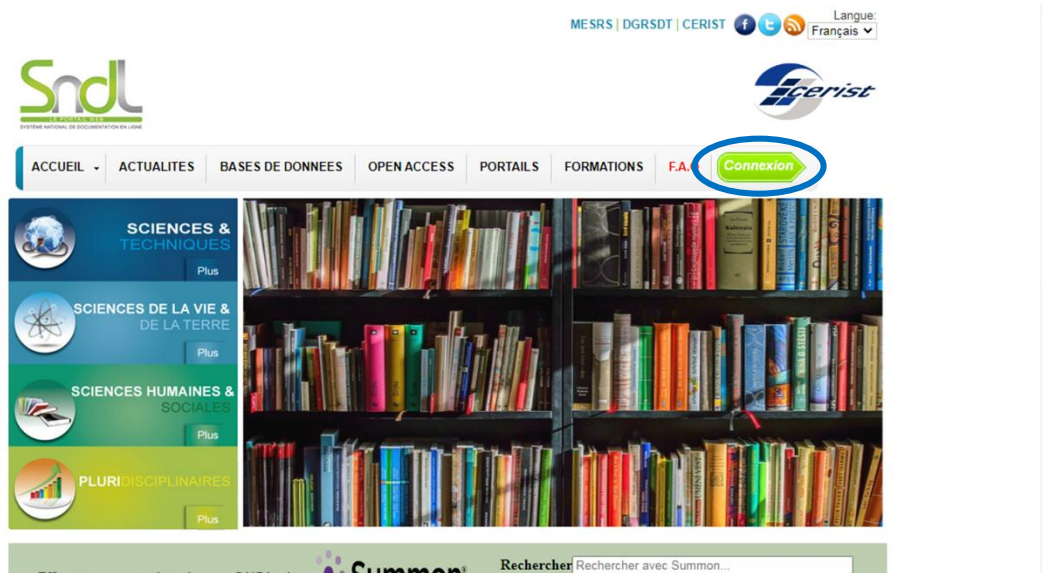


Figure 11 : the home page of SNDL.

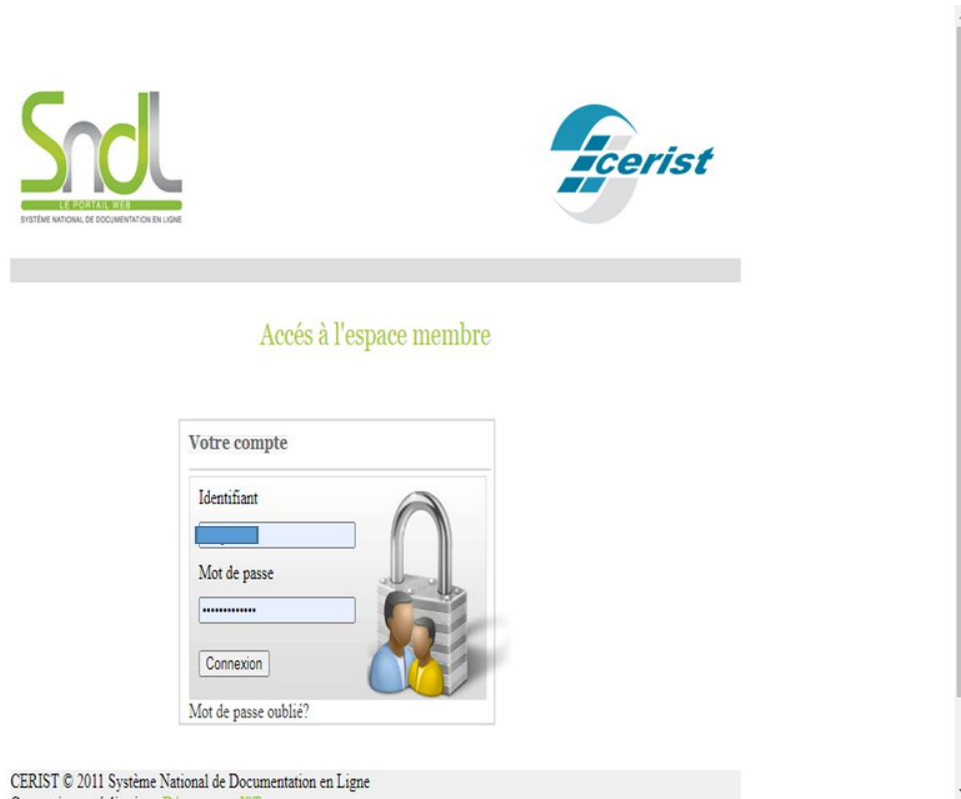


Figure 12 : User access urea.

2.3 List and classification of available resources

For any information regarding this documentation, click on the “BASES DE DONNEES” icon on the SNDL website homepage. The products from various publishers are made available to you. These resources are categorized into four major fields to facilitate your search (Figure 13).

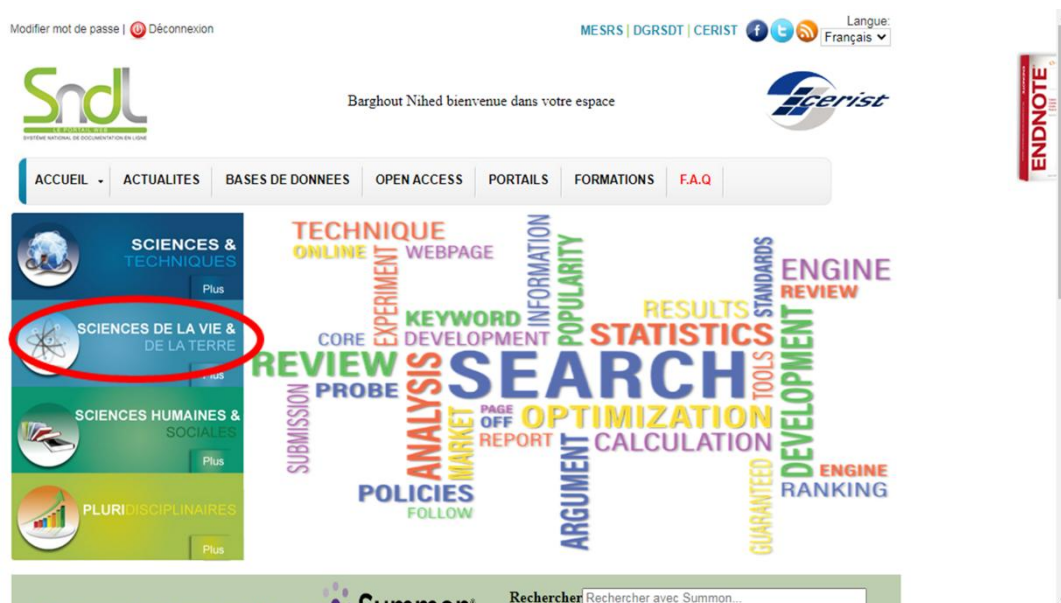


Figure 13 : The four major fields in the SNDL system.

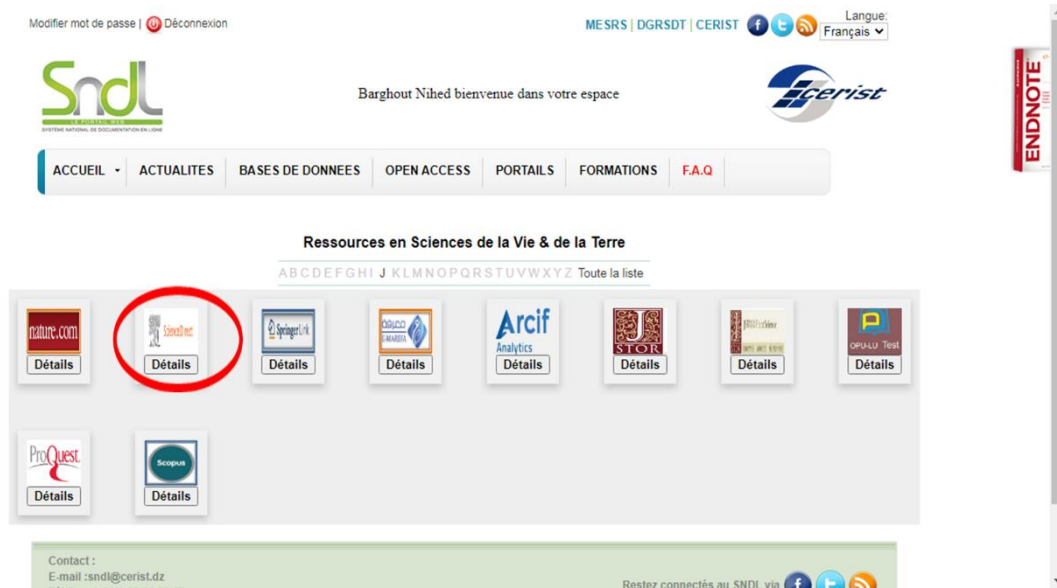


Figure 14 : Life sciences databases on SNDL.

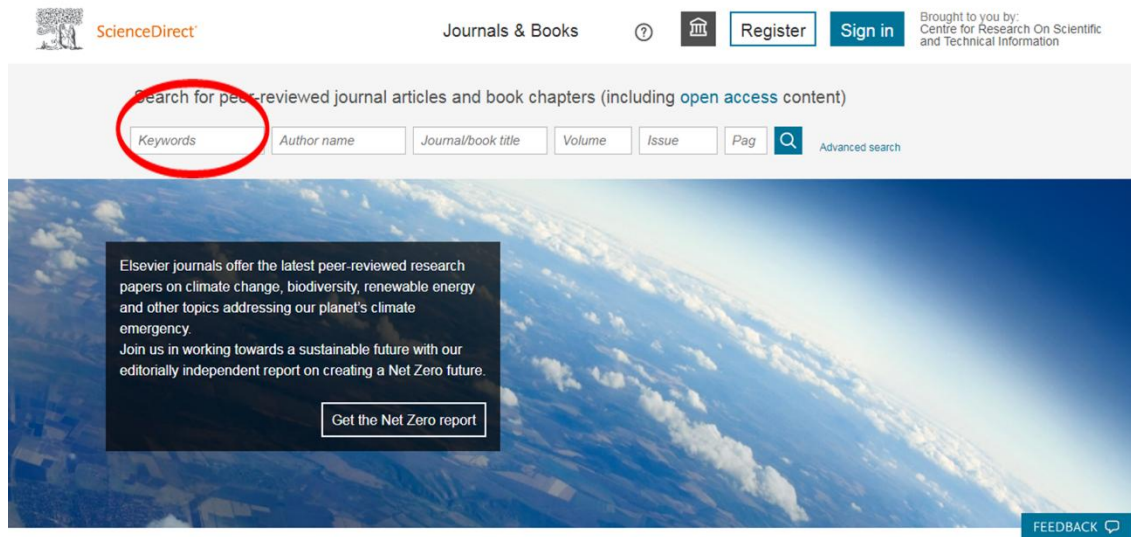


Figure 15 : Homepage of the ScienceDirect Database by Elsevier. Searches can be performed here using keywords, author names, book or journal titles, volume numbers, and so on.

The screenshot shows the ScienceDirect search interface. At the top, there is a search bar with the term "hybridation" entered. Below the search bar, it indicates "1,058,531 results". On the left side, there are filters for "Refine by:" including "Subscribed journals", "Years" (2023, 2022, 2021), and "Article type" (Review articles). The main results list shows two research articles with full-text access. The first article is titled "Comparative analysis of growth performance, pharyngeal teeth and intestinal traits in F1 hybrids of female Megalobrama amblycephala × male Culter mongolicus" and is available online from September 2022. The second article is "Academic entrepreneurial hybrids: accounting and accountability in the Case of MegaRide" from The British Accounting Review, also available online from September 2022. A "FEEDBACK" button is visible in the bottom right corner of the search results area.

Figure 16 : Search results for the term “hybridation,” yielding more than one million documents with open access.

The screenshot displays a full article page from The British Accounting Review. The article title is "Academic entrepreneurial hybrids: accounting and accountability in the Case of MegaRide" by Rosanna Spanò, Giuseppe Grossi, and Giovanni Catello Landi. The article is marked as "In Press, Journal Pre-proof" and is available online from September 26, 2022. The page includes a table of contents on the left with sections like "Introduction", "Assessment of prior research", "Theoretical model", "Research design and context", "Discussion", and "Concluding remarks". There are options to "View PDF", "Share", and "Cite" the article. A "Recommended articles" section on the right shows "No articles found". The ScienceDirect logo and navigation links are visible at the top.

Figure 17 : Example of a scientific article found using the SNDL.

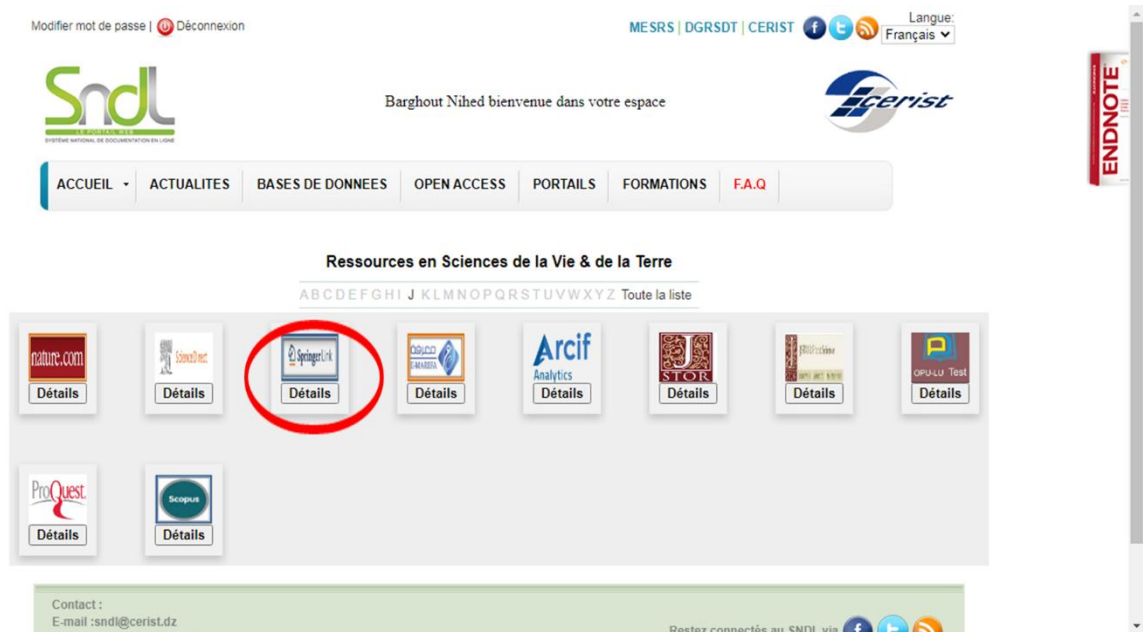


Figure 18 : search on the Springer database.

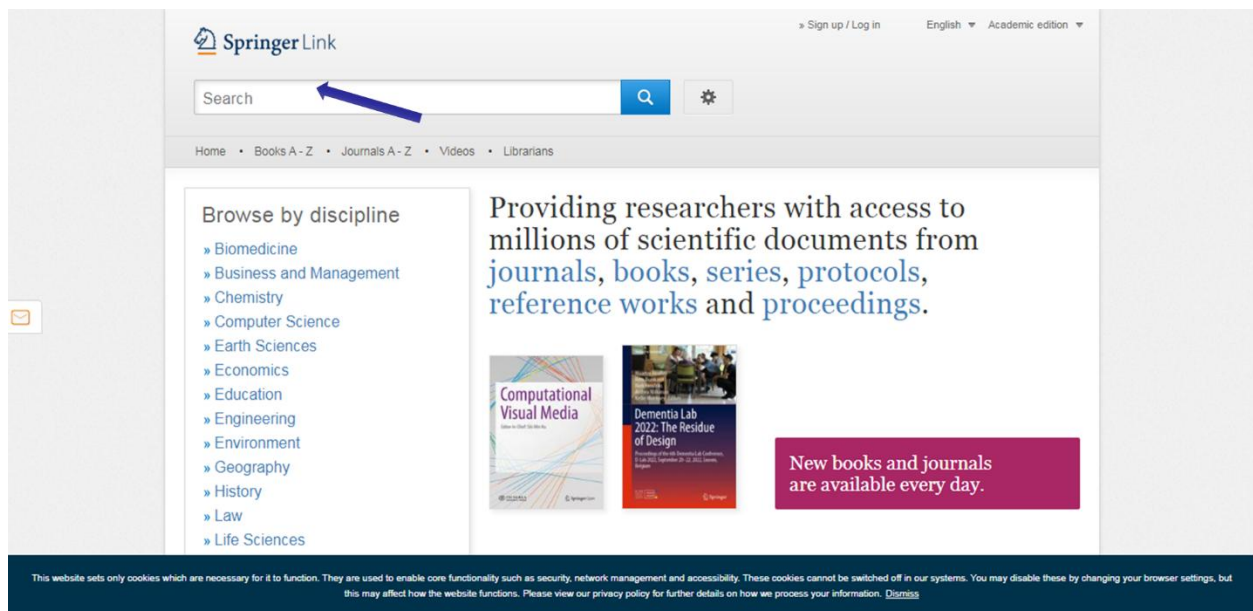


Figure 19 : the homepage of Springer.

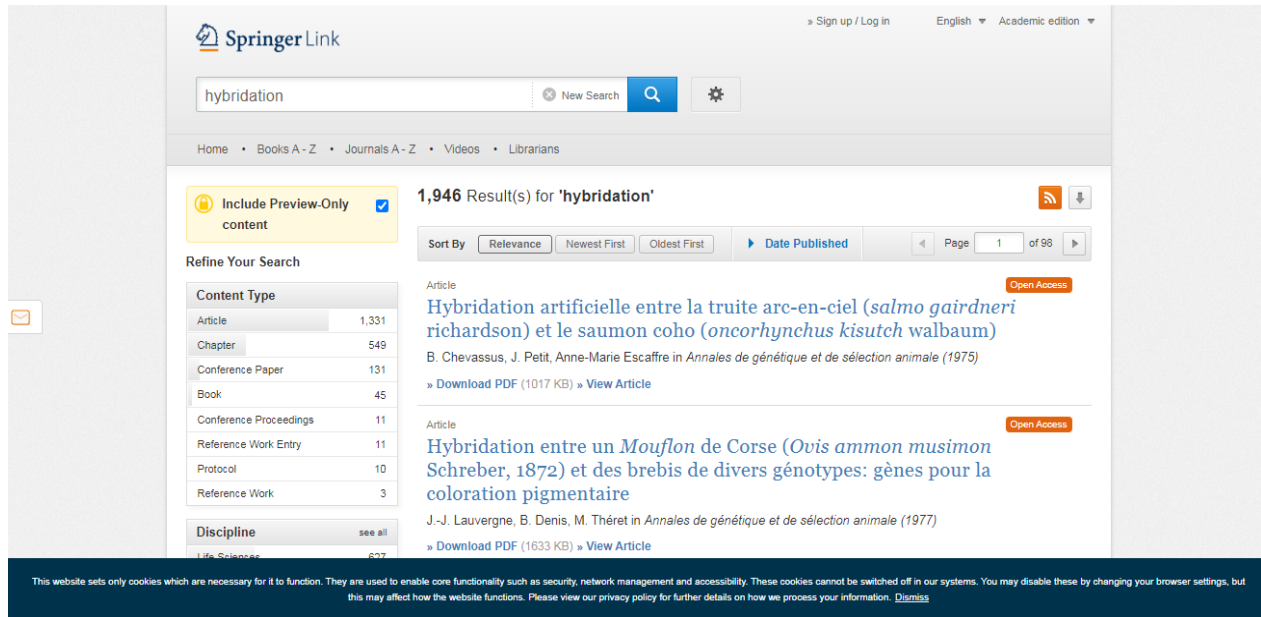


Figure 20 : Example of a search for the term “hybridation,” yielding 1,946 open-access documents

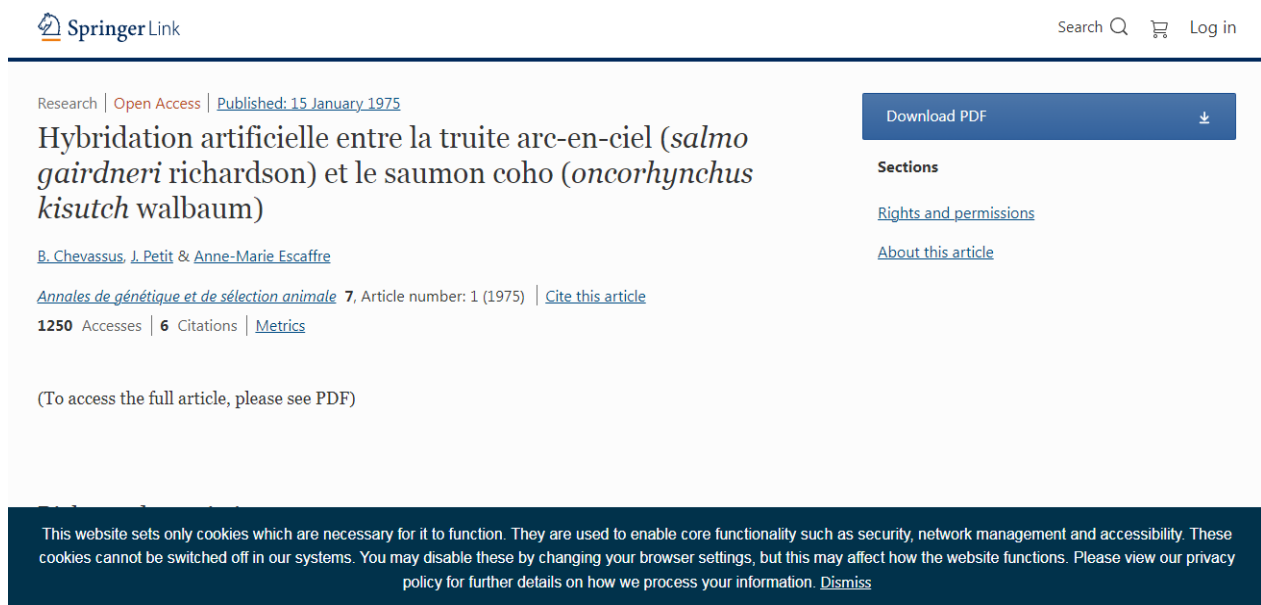


Figure 21 : Example of a scientific article found using the SNDL.

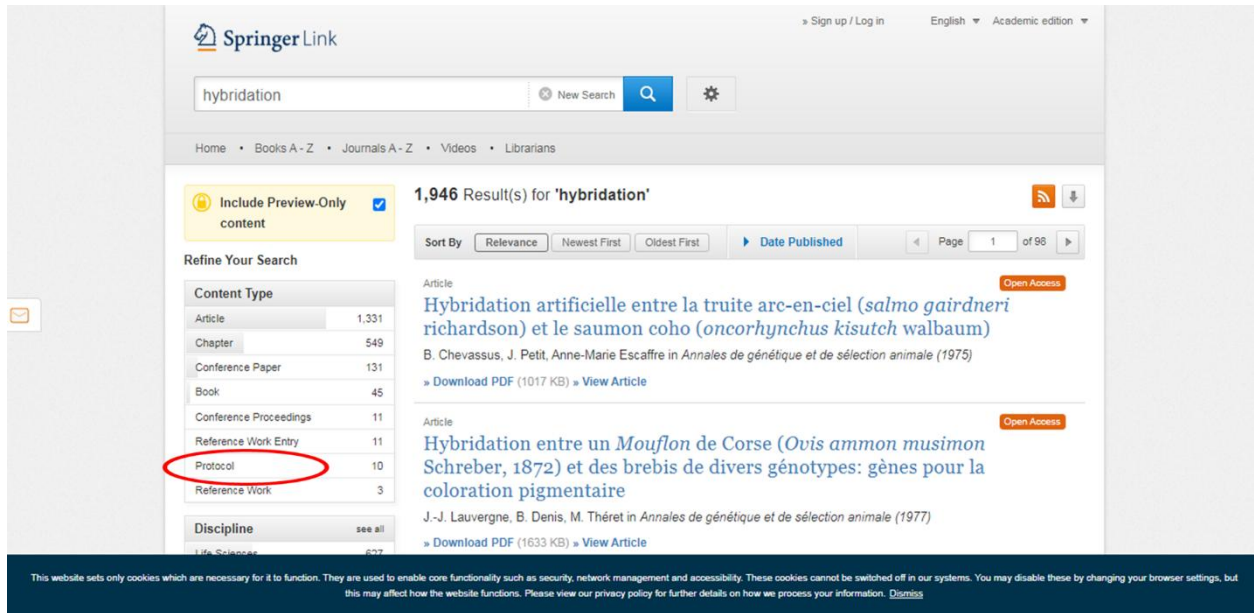


Figure 22 : Specific feature of protocol-based advanced search in the database Springer.

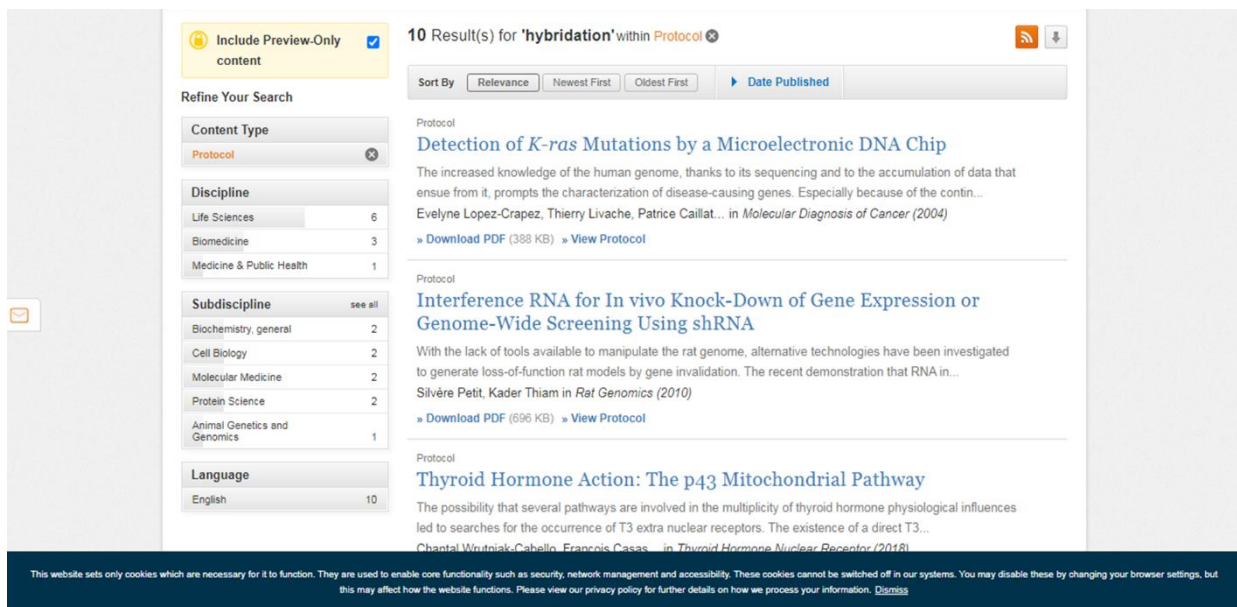


Figure 23 : Result of an advanced protocol-based search, yielding 10 documents on the term « hybridation ».

3 Using bibliographic data

Scientific research conditions depend largely on the state and situation of countries, where scientific production is generally carried out to address specific and well-defined problems, thereby developing solutions within the relevant fields. University studies, on the other hand, demonstrate that an individual's ability to distance themselves from previously acquired knowledge and to formulate **new answers to new questions** is a key indicator of intellectual maturity. Hence, the higher the level of education, the more the individual is considered capable of **dealing with uncertain and ambiguous situations**.

Consequently, scientific production requires several essential elements, such as:

- ↳ Time management: Estimate the time required for each task and start with the most urgent and important ones.
- ↳ Searching for relevant information: Read a sufficient number of documents within your field.
- ↳ Verifying the reliability of your scientific sources: Books, scientific journals, research articles, theses, etc.
- ↳ Organizing ideas according to their context within the scientific work.

3.1 Steps of the Research Process

3.1.1 First Step: Define Your Topic

The determination of the research topic begins with identifying a general theme that holds intrinsic interest:

- ✓ Connect your topic to something that has long concerned or interested you and that is likely to keep your attention over time.
- ✓ Clearly define the context so as not to waste time. You will likely have to address the topic within a specific chronological framework and geographic area.
- ✓ These elements will help you formulate your topic and extract the main concepts that will guide your research.
- ✓ Do not wait for the perfect topic.

3.1.2 Second Step: Consulting References

Carefully observe the reference material. It can offer various types of searches:

- ❖ By author: If you already have specific references, this step will be straightforward.
- ❖ By title: Consult librarians to identify the appropriate information source. Note that the use of capital letters can affect search results—try several variations.
- ❖ By subject: This is where keywords come into play. If your topic is well defined, you will avoid dealing with the 5,429 entries in the catalog... everything depends on how precisely you set your search boundaries.

3.1.2.1 *Sorting and Selecting Sources*

Imagine having about thirty books to read for next week! At this stage, it is essential to be pragmatic and avoid diving into readings that, while interesting, are not directly relevant to your topic. To assess the relevance of a book found on the shelf, consider:

- ♣ Publication date: Has the book been reissued? Does your topic allow for the use of older sources?
- ♣ Author's expertise: This can be a key indicator of objectivity and reliability. Does the author's name sound familiar? If so, it may indicate citation in other works and recognition in the field.
- ♣ Bibliography: The works listed will give you a quick sense of the content and, more importantly, of its reliability.
- ♣ Introduction or preface: These sections often outline the book's objectives and its intended audience.
- ♣ Table of contents or list of chapters: Located at the beginning or end of the book, these sections help you quickly evaluate the structure and relevance of the work.

3.1.3 Third Step: Formulating a Research Problem (Problem Statement)

- ✓ The problem statement is a structured presentation of known facts:
- ✓ What other researchers have studied and published on the topic or related aspects.
- ✓ The relevant factors and concepts, along with the approaches and solutions previously proposed.

- ✓ The data, concepts, and variables identified in the literature that are essential for framing your research question.
- ✓ From the literature review: “placing into perspective all the links existing between facts, actors, and components of a given problem.”

This involves two complementary processes:

Conceptual work: Information is organized and grouped to create meaning and lead to the definition of the research problem and question.

Writing work: This consists of formalizing the organization of facts and known data, usually through several iterations.

Conceptual development and writing mutually refine each other through a cyclical process between ideas and their written formulation.

Ultimately, establishing the research problem is the first step in analysis.

3.1.3.1 *Order of Chapter Writing*

- ✚ The problem statement:
 - ↪ **The general research question and the overall objective.**
- ✚ The analytical framework:
 - ↪ **The specific questions and the hypotheses.**
- ✚ The research approach or methodology:
 - ✚ **Sampling.**
- ✚ Analysis and presentation of results.
- ✚ Discussion of results.
- ✚ Conclusion.
- ✚ Introduction.
- ✚ Title and preliminary pages.

3.1.3.2 *Presentation of the Problem*

A problem is defined as something that causes certain difficulties. The problem leads to a general question or a research objective. The problem statement concludes with a justification of the social and scientific relevance of the issue and the research question or objective. Explaining “why attention should be given to this problem” and “why it is worth attempting to answer the question”.

3.1.3.3 *Presentation of the Research Objective*

Clarifying the research objective means making explicit one's intention to explore or contribute to a better understanding of a situation or phenomenon, or to verify certain assumptions. This may also involve formulating explanatory hypotheses that could later be tested.

3.1.4 **Fourth Step: The Hypothesis**

A hypothesis is a statement describing a relationship:

- ↪ Usually a prediction between two variables (observable phenomena);
- ↪ Written in the present tense;
- ↪ Where the following are defined:
- ↪ Each concept used, in terms of observable and measurable phenomena (variables);
- ↪ Control variables, if applicable (intermediate or analytical), such as contextual factors.

3.2 **Definition of a Summary**

The first thing to know about a summary is that it must never include your personal opinion. Even if you disagree with the author's viewpoint, no subjectivity should appear. The golden rule of summarizing is to inform, not to comment. In short, a summary is a miniature photograph of the text, nothing more. A summary must follow the argumentative structure of the original text, respecting its chronology and narrative perspective.

3.3 **Definition of a Synthesis**

The synthesis note (also called a synthesis report) is a key exercise in many academic and administrative examinations. It involves summarizing a large set of documents of various types (book excerpts, legal texts, charts, tables, etc.) using a structured outline that you construct to address the problem statement derived from the subject. Generally, you are not allowed to express your opinion in this type of assignment.

3.4 **Time Management**

Time management is one of the most challenging aspects of the task. Naturally, one must work quickly, but to be effective, you should also:

- ✓ Dedicate sufficient time to analyzing the topic, to accurately identify the relevant information in your materials;

- ✓ Skim through the documents to determine a reading order (from most to least important), which may differ from their order of presentation;
- ✓ Set a maximum time limit for reading (including note-taking) to ensure enough time remains for building your outline and writing your report;
- ✓ Determine this duration according to your own skills—and once it's over, stop working on the documents.

3.5 Work plan and dissertation outline

3.5.1 Work Plan

Essentially, this is a list of tasks to be completed in order to write the dissertation. The work plan differs from the writing plan:

It is action-oriented (cyclical);

It involves a back-and-forth process between different parts of the work.

3.5.2 Dissertation outline

The dissertation outline comes later, it is linked to the writing process (linear) following documentary or field research. It represents a logical and persuasive argumentative framework.

Typical dissertation structure:

- ❖ Cover page
- ❖ Dedication(s)
- ❖ Acknowledgments
- ❖ List of tables and figures
- ❖ Table of contents
- ❖ Abstract in three languages (English, French, and Arabic)
- ❖ Introduction (pagination starts here)
- ❖ Literature review (State of the art)
- ❖ Experimental section
- ❖ Materials and methods
- ❖ Results and discussion
- ❖ Conclusion
- ❖ References (pagination ends here)

❖ Appendices

3.6 Preparation of empirical texts

The empirical text should adopt a **simple, precise, and concise style**. Short sentences with a clear structure (subject–verb–object) are preferable to long, complex ones. Additional recommendations include:

- Verb tenses: The **introduction**, when summarizing established facts (literature review, context), should be in the **present tense**. **Methods** and **results** are written in the **past tense**. The **discussion** uses the **present tense for literature data** and the **past tense for your study's findings**.
- Chapter titles must stand alone, without colons or underlining, and be independent of the following text.

1.1 Extraction

It was carried out using technique X. **Incorrect**

1.1 Extraction

The extraction was carried out using technique X. **Correct**

- Avoid abbreviations whenever possible. Define acronyms the first time they appear unless they are universally recognized (e.g., ATP, NADH, RNA, DNA). Dotted abbreviations (e.g., M.E.S.R.S. instead of MESRS) are no longer accepted.
- When the same species name appears repeatedly, the genus name may be abbreviated (e.g., *Pseudomonas putida* → *P. putida*), except at the beginning of a sentence.
- Never begin a sentence with a numeral; write it in full (e.g., twenty instead of 20).
- Watch out for common spelling mistakes involving accents (e.g., espèce → espèce, électron → électron, examen → examen). Avoid errors such as PH instead of pH.

3.6.1 Typography

For punctuation and spacing, leave one space after a period, comma, colon, semicolon, or question mark. For parentheses, leave a space before and after them, but not inside (e.g., a (aaaa) b). Avoid double parentheses; use brackets instead (e.g., [B (aaaa) c]). The same spacing rules apply to quotation marks. The slash (/) should not include spaces (a/a).

Use capital letters only for the first letter of a sentence, proper nouns, genus names, titles and subtitles, acronyms, and occasionally authors' names cited in the text. Capitals are tolerated for months and cardinal directions.

Italics are used for:

- ✓ Latin words, especially species names and et al. (meaning “and others”) in bibliographic citations.
- ✓ Foreign words not in common use.
- ✓ Subheadings.
- ✓ Quoted excerpts.
- ✓ Journal names or book titles in references.
- ✓ Certain specific cases: e.g., chlorophyll a and b, gene names (pro, lac), or chemical prefixes (p, o, m, n).

Bold type is reserved for titles and subtitles, and occasionally for volume numbers in references. In a dissertation or report, bold may be used sparingly to emphasize a word or phrase of particular importance.

3.6.2 Numbering of Chapters

Headings and subheadings should be limited in number and carefully selected. They are generally written in boldface, while italics may be used for second-level subheadings, or alternatively, an indentation (one space at the beginning of the line) may be applied.

Headings and subheadings should preferably be numbered using Arabic numerals in a cascading system, which ensures clarity (e.g., 3, 3.1, 3.1.1). A period is never placed at the end of a heading or subheading.

Example:

1. Material

1.2. Vegetal material

1.2.1. Sampling

2. Methods

3.6.3 Text Format

- ✓ The text must be justified, with all lines aligned on both the right and left margins.
- ✓ Avoid paragraphs consisting of only one or two sentences, as they tend to fragment the text.
- ✓ Choose a compact and consistent text layout.

3.6.4 Pagination

Except for manuscripts intended for publication in journals, all pages (including appendices) must be numbered using Arabic numerals. Page numbering should be continuous, running from the first to the last page without interruption. No section should be numbered separately. The title page and interleaf pages are included in the pagination but do not display a page number.

3.6.5 Figures and Tables

Figures and tables are useful for conveying information that would otherwise be difficult to describe clearly in text form.

- ❖ They must be self-explanatory, understandable independently of the main text.
- ❖ Figures must be accompanied by captions, and tables must have titles.
- ❖ A figure caption should include all the necessary elements for interpretation: explanations of symbols, abbreviations, and scales. The caption is placed below the figure.
- Tables are composed of several parts: a descriptive title placed above the table, column and row headers, the main body of the table, and, where applicable, footnotes placed below.

Figures and tables must be referred to within the text (e.g., Table X, Figure Y) and numbered sequentially using Arabic numerals according to their order of appearance. They should be informative on their own, thanks to their captions, subtitles, and notes, and should be properly positioned in relation to the text. They must complement the text rather than duplicate its content.



Figure 1.1 : Morphologie de la plante de *P. tuberosa*. [4].
A. feuilles, B. hampe florale, C. fleurs

Tableau 1.3: Maladies associées au stress oxydatif [95].

| Maladies chroniques | Maladies aiguës |
|----------------------|--|
| Cancer | Maladies inflammatoires |
| Cataracte | Chocs, traumatismes et ischémie |
| Diabète | Insuffisance rénale |
| Sclérose en plaques | Pancréatite |
| Maladie de Parkinson | Colites et maladies inflammatoires de l'intestin |
| Arthrite | Lésions cutanées |

Tableau 3.1 : Criblage phytochimique des bulbes, des feuilles et des fleurs de *P. tuberosa*

| Constituants | bulbes | feuilles | fleurs |
|---------------|--------|----------|--------|
| Glycosides | + | + | + |
| Flavonoïdes | + | + | + |
| Phlobotannins | + | - | - |
| Saponines | + | + | + |
| Tanins | + | + | + |
| Terpénoides | + | + | + |
| Mucilage | + | + | + |

* + présence, - absence

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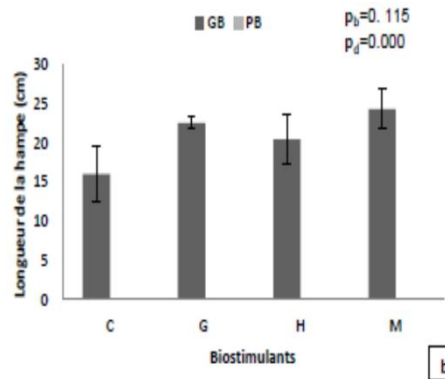


Figure 3.15 : Nombre de fleurs et longueur de la hampe chez les plants cultivés de

P. tuberosa L. sous l'effet des biostimulants, selon la taille des bulbes.

H : hydrolat des plumes, M : marc de café, A : acide humique, T : témoin, GB : gros bulbes, PB : petits bulbes. p_b : probabilité des biostimulants, p_d : probabilité de diamètre, a : conduite de la culture 2016, b : conduite de la culture 2017.

Figure 24 : Example of figures and tables presentation.

3.6.6 Writing Plan

The **IMRAD** format (Introduction, Methods, Results, and Discussion) is almost universally accepted in scientific writing. The questions associated with each section are as follows:

- **Introduction:** What is the origin of the work, its research problem, and its objectives?
- **Materials:** What sources and samples were used?
- **Methods:** What was carried out?
- **Results:** What was observed?
- **Discussion:** What do the results mean?
- **Conclusion:** What are the implications or consequences of the findings?
- **Acknowledgments:** Who contributed to the work?
- **References:** Whose work has been cited in the text?

3.6.7 In-text Citation of References

A bibliographic citation is a brief reference to a document inserted within the main body of the text. All statements, information recalls, and factual assertions must be supported by a reference. A citation can appear in the middle or at the end of a sentence, and the same reference may be cited multiple times. All authors cited in the text must appear in the reference list, and vice versa. Do not include in the bibliography any references that have not been directly consulted. There are two main citation systems used in scientific writing:

1. The Harvard System (Author–Date System)

Authors' first names are never mentioned, even when identical surnames occur (e.g., Singh and Singh, 2009).

Authors' surnames are written in lowercase (as a general rule).

For one author: (Lim, 2014) or Lim (2014)

For two authors: (Singh and Wiart, 2009) or Singh and Wiart (2009)

For three or more authors: only the first author is mentioned, followed by “et al.”, (Favier et al., 2009) or Favier et al. (2009)

When citing multiple publications together, they are arranged chronologically and separated by semicolons. Examples:

One author: Kim (2002) or (Kim, 2002)

Two authors: Kim and Lee (2002) or (Kim and Lee, 2002)

Three or more authors: Miller et al. (2002) or (Miller et al., 2002)

Multiple works: Listed in alphabetical order of the first author (Kim et al., 2003; Kim et al., 2017; Miller et al., 2009; Smith et al., 2008)

Multiple works by the same author: differentiated by adding a letter after the year

Smith et al. (2002a; 2002b) or (Smith et al., 2002a; Smith et al., 2002b)

Different authors with the same last name and publication year: (Kim et al., 2002a; Kim et al., 2002b)

2. The Vancouver System (Numerical System)

In this system, numbers replace author names, according to the order of appearance in the text.

They are placed in square brackets [1]. When several references are cited together, they are arranged in ascending order and separated by commas [1,2,3]. For consecutive references, only the first and last numbers are indicated, separated by a hyphen [6–12].

3.6.8 Citation in the Reference List

The construction and presentation of the reference list must follow international standards for scientific writing.

Bibliographic Record Examples

Scientific Journals

The documentary unit of a journal is the article, whose bibliographic reference is structured as follows:

Authors: Abderrahmane, B., & Bouguerche, F.

Year of publication: 2022

Title of the article: HPLC Chromatographic Analysis and Antioxidant Activity of Seeds from Some Varieties of Prickly Pear (*Opuntia ficus-indica* L.) from the Sidi-Fredj Market, Souk Ahras, Algeria

Journal: Algerian Journal of Biosciences

Volume: 3

Issue: 1

Page range: 038–046

Reference format:

Abderrahmane, B., & Bouguerche, F. (2022). HPLC Chromatographic Analysis and Antioxidant Activity of Seeds from Some Varieties of Prickly Pear (*Opuntia ficus-indica* L.) from the Sidi-Fredj Market, Souk Ahras, Algeria. *Algerian Journal of Biosciences*, 3(1), 038–046.

Book

Author: Gilly, G.

Year of publication: 1997

Title: Les plantes à parfum et huiles essentielles à Grasse

Edition: 1st ed.

Publisher and country: L'Harmattan

Number of pages: 428 p.

Reference format:

Gilly, G. (1997). *Les plantes à parfum et huiles essentielles à Grasse*. L'Harmattan, 428 p.

Doctoral Thesis

For theses, the publication details (place and publisher) are replaced by the mention of the degree and institution, for example: Doctoral thesis: Plant Biotechnology, University of Blida 1 (Algeria).

3.6.8.1 Bibliographic Management Software

The management of bibliographic references can be automated, representing a considerable time-saving tool and helping to avoid citation errors. Among the most widely used reference management software are Zotero, Mendeley, and EndNote, among others (see Table 1 and Figure).

Table 1: Comparison of bibliographic management software

| Software | Price | Strengths | Weaknesses |
|----------|----------------|---|----------------------|
| Zotero | Free | Easy reference collection, open access, active user community | Limited free storage |
| Mendeley | Free | 2GB of cloud storage, discovery | Owned by Elsevier |
| EndNote | Paid (SNDL) | Pwerful features, wide range of citation styles | Expensive |



4 Scientific Article Writing

Before beginning the actual writing, it is essential to clearly define the topic, the objective of the paper, and to have in mind the core message, the novelty it brings, and the hypothesis to be tested. The next step is to determine the article structure, outline the section headings, and summarize in a few sentences the key content to be discussed in each part. For the *Results* section, it is also necessary to select the figures and tables that will be used.

Only one idea should be presented per paragraph. In English-language manuscripts, the main idea is typically stated in the first sentence of each paragraph, which makes the text easier to read and helps avoid unnecessary digressions. Scientific writing is a gradual process, carried out step by step for each section. The goal is to find the appropriate tone and maintain scientific rigor. In terms of style, clarity and readability must always be prioritized.

Key Points

- Writing must emphasize **readability, clarity, style, and accuracy**.
- **Illustrations** (with captions) must be carefully prepared and understandable without referring to the main text.
- Numerous **writing conventions** must be followed.
- **Multiple readings and revisions**, including external proofreading, are essential.

4.1 Readability

Readability depends on the careful choice of vocabulary, using terminology appropriate to the target audience, and on a sentence structure that does not overburden the reader's memory. Short, simple sentences are always preferable to long, complex ones. The goal is not to write a novel. To ensure readability, vocabulary should match the reader's level of expertise.

A sentence's readability increases when:

- the number of words decreases;
- the chosen words are shorter.

Several formulas and software tools are available to assess the readability level of a text.

4.2 Clarity

Clarity facilitates better understanding. The text must be coherent and unambiguous—there should be no equivocal statements. For instance, the sentence “The temperature decreased: the reaction

slowed down” is ambiguous. Which is the cause and which is the effect? The colon could be replaced by “therefore,” “because,” or “but,” depending on the intended meaning. The reader must also be able to *visualize* what is described. Descriptions should be precise and refer to the reader’s background knowledge and experience.

4.3 Accuracy

Accuracy leaves no room for approximation or doubt. To avoid imprecision, vague terms such as *some*, *certain*, *several*, or *many* should be avoided, as they are subjective. Numerical values or clearly defined quantities must be provided. However, excessive detail that does not contribute to understanding or argumentation should also be avoided.

4.4 Style

Each paragraph should develop a single idea. To improve readability, the first sentence may summarize the paragraph’s main idea, while the last may introduce the next. Conjunctions such as *and*, and relative pronouns like *which* and *that*, can often be replaced by full stops to create two concise sentences. Short sentences greatly facilitate reading. Avoid using phrases that do not add meaning; shorten or delete unnecessary expressions. For example, replace “*the fact that...*” with nothing or simplify “*in order to...*” to “*to...*”. Use the verbs *to be*, *to have*, and *to do* sparingly, replacing them with more specific verbs when possible. Similarly, *can* and *allow to* followed by an infinitive can often be replaced by the conjugated form of that verb.

4.5 Spelling and Grammar

Although spelling competence is expected from formal education, it is not always achieved. Extra care must therefore be taken to produce a text free of spelling and grammatical errors, as such errors can lead to immediate rejection without review. Most publishers now adopt the new French spelling conventions, which simplify certain rules (accents, compound nouns, numbers, etc.). See: www.orthographe-recommandee.info. Despite the assistance provided by modern word-processing tools, always work with a **dictionary** and a **grammar reference** to check meaning and correctness. Practical guides such as *Savoir rédiger* from the *Les indispensables* collection (Larousse) are also highly useful. Unlike spell-checkers, grammar checkers remain unreliable, as they only work well with simple sentence structures.

4.6 Figures and Tables

Tables and figures (graphs, diagrams, photographs, or maps) are used to support the argumentation. They must convey all the research data and be comprehensible without reference to the main text. Therefore, captions should be explicit and, if necessary, include visual aids (arrows, annotations) to facilitate understanding. Tables and figures must be submitted on separate pages (and often in separate files). They are frequently reprocessed by the publisher for technical, aesthetic, or readability reasons. Using an illustration reproduced from another source without modification always requires prior permission (see Chapter 3).

4.7 Writing a Scientific Article

Before starting to write a scientific article, several decisions must be made:

- Determine the **type of article** and the **list of authors**.
- Choose the **journal** to which the paper will be submitted.
- Identify all **copyright and reproduction permissions** (tables, figures, etc.) early, as these processes can take considerable time.
- Writing a scientific paper primarily aims to **convey a novel idea or original information**.
- The **title, abstract, and main body** of the paper should serve this purpose: communicating one clear idea or contribution.
- The **IMRaD structure** (*Introduction, Materials and Methods, Results, and Discussion*) is the standard and essential framework for research articles.

4.7.1 Authorship

The list of authors should be established before the work begins, ideally included in the research project or agreement.

To qualify as an author, one must:

- have played a central role in formulating the hypotheses;
- have contributed to the acquisition, analysis, and interpretation of results;
- have participated in writing a significant portion of the manuscript;
- have substantially contributed to its revision, both in substance and form.

The order of authorship matters. The first author:

- is the one entrusted with the project;
- has carried out most of the scientific work;
- has drafted the main sections of the paper.

Contributors who provided minor assistance (technical help, statistical analysis, proofreading, etc.) should be acknowledged in the **Acknowledgments** section, not listed as authors.

4.7.2 Choosing a Journal

Unlike literary works, a scientific article can be submitted to **only one journal**. The choice must be made **before** writing begins, as it determines the **audience, level of complexity, language, and peer-review process**. The first question to ask is whether the journal has a **review board** and practices **peer review**, a non-negotiable criterion that ensures scientific credibility. Other important selection criteria include:

4.7.2.1 Copyright and Licensing

- The journal should provide a **clear publishing agreement** specifying the rights transferred.
- Prefer **open access journals** or those allowing deposit of post-print versions in institutional repositories.
- **International Recognition**
- Indexed journals with an **Impact Factor** or **CiteScore** are preferable.
- These indicators measure the **reputation of the journal**, not of individual articles.

4.7.2.2 Impact Factor (IF)

Recognized scientific journals have an Impact Factor (IF), provided by Web of Science, and/or a CiteScore, provided by Scopus. The Impact Factor is a measure of the reputation or visibility of a journal, not of an individual article.

$$\text{IF} = \frac{\text{Number of citations in 2025}}{\text{Number of articles published in 2023 and 2024}}$$

If a journal has published 50 papers in 2023–2024 and these were cited 100 times in 2025, then $\text{IF} = 100/50 = 2$. Thus, on average, each article was cited twice in 2025.

These values are officially calculated and published **annually in June** in the *Journal Citation Reports* by **Clarivate Analytics (Web of Science)**. Since late 2016, Elsevier also calculates the **CiteScore**, based on citations over three years instead of two.

4.7.2.3 *Audience and Scope*

- Whether the journal is **discipline-specific** or **multidisciplinary**.
- Whether it publishes in **English** (for international visibility) or is **bilingual (French/English)** for accessibility in Francophone regions.

4.7.2.4 *Dissemination and Frequency*

- Journals with **broad circulation** and strong **online presence**.
- Prefer journals with **frequent publication schedules** (ensuring shorter publication delays).
- Rapid publication (ideally within 3–6 months) is desirable, although peer review remains the most time-consuming stage.

4.7.2.5 *Editorial and Technical Quality*

- Professional layout and high-quality printing.
- Reasonable length limits and allowance for color figures (preferably without extra fees).
- High-quality image reproduction.

To find an appropriate journal, consult **journal lists in your field**, **reference lists from recent publications**, or **publisher websites** to compare these criteria. Reputable publishers provide tools to help identify the most suitable journal for a given manuscript. Consultation with colleagues is also advisable, and opting for **open access** journals should be considered, even if not yet a local habit. Finally, **publication fees** remain a crucial factor in journal selection.



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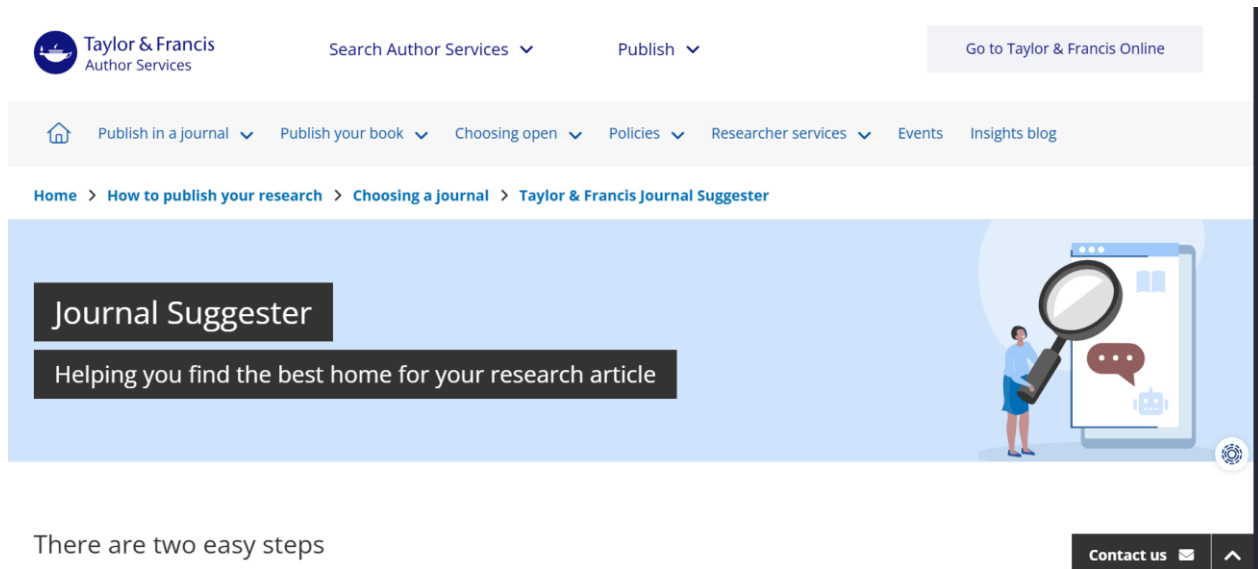


Figure 26 : « journal finder » reputable publishers in the scientific field.

4.7.3 Structure of a Research Article

Each research article is divided into sections, each serving a specific purpose. The **IMRaD model** (Introduction, Methods, Results, and Discussion) standardizes the organization of the main body of the article (see Table 2).

Table 1: The IMRaD format of a research article and scientific writing.

| Section (length) | Purpose | Verb tense | Elements |
|--------------------------------------|--|--|--|
| Abstract (200–250 words) | A condensed version of the manuscript | Past tense for work performed | <ul style="list-style-type: none"> • Main objectives • Methods used • Major results • Main conclusions |
| Introduction (500–1000 words) | To provide the rationale for the study | Present tense for established knowledge in the literature | <ul style="list-style-type: none"> • Nature and scope of the problem • Review of relevant literature • Hypothesis • Approach (and its justification) • Main findings • Key conclusions |

| | | | |
|---|---|---|---|
| <p>Materials and Methods (500–1000 words) • Sampling • Data collection • Measurement</p> | <p>To describe the manipulation, experiment, model, or study site</p> | <p>Past tense for the work performed</p> | <ul style="list-style-type: none"> • Description of materials • Step-by-step description of procedures in logical order • Sufficient detail to ensure reproducibility • Your results • Observations made during the experiment and in relation to the obtained results • Calculated results based on data, including errors |
| <p>Results (500–1500 words) • Analyses</p> | <p>To present data and findings — what was observed, calculated, or discovered</p> | <p>Past tense referring to what was found</p> | <ul style="list-style-type: none"> • Trends, relationships, and generalizations shown by the results • Exceptions and peripheral data (and explanations) • How and why your results differ from previous studies |
| <p>Discussion (1000–1500 words) • Evaluation</p> | <ul style="list-style-type: none"> • To demonstrate relationships among observed facts • To place results in the context of previous research | <p>Present tense, emphasizing established knowledge while presenting results</p> | <ul style="list-style-type: none"> • Summary of the evidence supporting each conclusion • Conclusions must relate back to the introduction and |
| <p>Conclusions</p> | <p>To summarize your main findings</p> | <p>Present tense — focus on what should now be accepted as established knowledge</p> | <ul style="list-style-type: none"> • Summary of the evidence supporting each conclusion • Conclusions must relate back to the introduction and |

hypothesis •
Implications,
significance of
results, and possible
practical applications

4.7.3.1 *The Preliminary Section*

Each element of the preliminary section will be reproduced *as is* in databases. It is therefore essential to write them carefully, as they represent (the title first, followed by the abstract and keywords) the reader's initial point of contact with the paper, allowing them to decide whether to continue reading or not.

a. The title

A provisional title should be chosen before beginning the work. The final title will naturally emerge after drafting the conclusions. The title must be concise, clear, and synthetic, with a possible subtitle rather than an excessively long title. Generally, there is a trend toward increasingly longer titles, up to 25 words, providing more detailed information.

The title conveys the main message of the paper and must include at least three essential elements:

- ❖ The name of the organism studied;
- ❖ The specific aspect or system investigated for that organism (including any geographical particularities);
- ❖ The variables involved.

The title may be **informative** or **descriptive**. It may include part of the results if they are particularly significant. For example: "*Durum wheat: influence of temperature and humidity.*"

The title may also be **incentive-based**, formulated as a question to attract readers' attention, though the interrogative form remains uncommon.

A shorter **running title** (or *short title*) may also be required; it will appear in the page header, typically on every other page.

b. Authors and Affiliations

Each author's name must be followed by their **institutional affiliation**, i.e., their professional address. The affiliation should be stated precisely to allow readers to contact the authors and to ensure the unique identification of the institution in databases (e.g., laboratory, department and/or research unit, Faculty of Natural and Life Sciences, University of Sétif 1 – Ferhat Abbas, address).

At least one author must provide an **email address** for correspondence.

c. The abstract

The abstract should range between **100 and 250 words**, depending on the journal, and must not exceed **300 words**. It is usually written in **two languages**, and occasionally three (some journals may handle translation themselves). The abstract must answer the following questions:

- Why was this experiment or research conducted? Why is it important?
- What was done, and how?
- What was found?
- What do these results mean?

For a **research article**, the abstract reflects the four main sections of the paper (Introduction, Materials and Methods, Results, and Discussion). To highlight this structure, some publishers require authors to prepare a **structured abstract**, in which these sections are clearly identified by headings and separate paragraphs. The standard structure includes:

- ♣ **Background;**
- ♣ **Objectives;**
- ♣ **Methods;**
- ♣ **Results;**
- ♣ **Conclusions.**

The abstract must not refer to any tables, figures, or citations. It should be understandable on its own, without reference to the full article. If no definitive conclusions are available, the abstract should state that the results are under discussion.

d. Keywords

Keywords are terms that best describe the message and content of the article. Between **three and ten keywords** are typically used. The procedure for selecting keywords is similar to that employed

in bibliographic research. Like the title and abstract, keywords are often reproduced *verbatim* in databases and search engines. Therefore, they should be chosen carefully to enhance the article's **visibility**.

5 Present and explain scientific results

The dissemination and use of research results involve several communication channels. This chapter details best practices for two essential methods: oral presentations and scientific posters.

5.1 Oral presentation

An oral presentation is a structured communication exercise aimed at conveying a message clearly, persuasively, and engagingly. Its success depends on meticulous preparation and masterful delivery.

5.1.1 Preparation phase

- ❖ Defining the scope of the topic: Clearly define the objective and scope of your intervention.
- ❖ Content structuring: Develop a logical plan (introduction, methods, results, discussion, conclusion) and announce it clearly to the audience.
- ❖ Adapting to the context: Adjust the content and depth of analysis according to your audience (specialists, general public, academic peers) and the format (seminar, symposium, defense).
- ❖ Time management: Strictly adhere to the allotted time. A prior rehearsal is essential to ensure the timing is correct.
- ❖ Preparation of visual aids (PowerPoint/ Keynote):
 - ↪ One idea per slide. Avoid information overload.
 - ↪ Prioritize visuals (graphs, diagrams) over dense text. Any illustration must be relevant and support your message.
 - ↪ Use a sufficiently large font size and ample line spacing for easy reading.
 - ↪ Number your slides.
- ❖ Preparing the notes
 - ↪ Use numbered cards to keep track of things.
 - ↪ Write down keywords and ideas, not complete sentences to recite. The speech should remain natural.

5.1.2 Style and presentation guidelines

- ✚ Visual professionalism: Neat and appropriate attire is essential. Avoid overly flashy items that are distracting attention.

- ✚ Repitng : Practice your presentation out loud, ideally in front of a colleague, to refine the pace, clarity and receive feedback.
- ✚ Anticipation: Anticipate potential questions from the audience and prepare concise answers.

5.1.3 Technical recommendations and execution

➤ **Before the session:**

- ✓ Test your presentation on the equipment that will be used (computer, video projector).
- ✓ Check that the laser pointer or any other interaction tool is working properly.

➤ **During the presentation :**

- ✓ Pace and articulation: Speak slowly, clearly, and with conviction. Modulate your voice to emphasize important points .
- ✓ Eye contact: Look at your audience to create a connection. Scan the room. with their eyes.
- ✓ Time management: A typical indicative breakdown might be:
 - Introduction: 15-20% (Context , problem , objectives)
 - Methods : 25-30% (Approach methodological)
 - Results and Discussion: 40-50% (Main contribution and interpretation)
 - Conclusion: 5-10% (Summary , outlook)
- **Pacing:** Introduce a new key idea every 2-3 minutes. Pause briefly after a complex slide to allow the audience time to absorb the information.

5.2 Scientific poster

A poster is a visual communication tool that condenses the essential elements of a research project onto a single surface (generally 80x120 cm to 90x150 cm). It is a graphic summary of a scientific article, following the IMRAD structure.

5.2.1 Characteristics of a successful poster

- Clarity and conciseness: The main message must be graspable in less than 5 minutes.
- Autonomy: He must tell a complete story.
- Readability: The typography must be large enough to be read from a distance of at least 1.5 meters.
- Titles and captions should be informative.

- Visual appeal: A clear layout, a harmonious balance between text and illustrations (graphics, photos, diagrams) and a choice of sober and consistent colors are essential to attract and retain attention.
- Logical structure: Organize the reading flow from top to bottom and left to right. The sections must be clearly identifiable :
 - ✚ Title, Authors, Affiliation (visible from afar)
 - ✚ Introduction (Context and objective)
 - ✚ Materials and Methods (Experimental Design)
 - ✚ Results (Presented visually: graphs, tables, images)
 - ✚ Discussion/Conclusion (Interpretation of results and main message)
 - ✚ Bibliographical references (Selective and essential)
- Color harmony: Use a limited, non-conflicting color palette. A light background with dark text is often the most legible. Avoid color combinations garish Or tiring .

5.2.2 Design and presentation of a scientific poster

5.2.2.1 Design Methodology

Planning is a crucial step for the success of a poster. The process can be outlined as follows (see Figure 27):

- Choice of software tools: The design is done electronically using layout or graphic design software such as:
 - ✓ PowerPoint (a widely accessible and simple solution; many online tutorials exist, for example: (<https://www.youtube.com/watch?v=iKITk9emLao>),
 - ✓ Adobe Illustrator or InDesign (professional standards for optimal typographic and graphic quality).
- Production and printing: Once the digital design is finalized, the file is sent to a specialized printing company for high-definition printing in the requested format (the dimensions are usually specified by the event organizing committee).
- Peer review: A critical review by a colleague is essential. This review should specifically address:
 - ✓ The clarity of the central message.
 - ✓ The visual appeal and harmony of the color palette.
 - ✓ The overall readability (font size, contrast).

- ✓ The balance between textual elements and illustrations (graphics, diagrams, photos).

5.2.3 Recommendations for the Poster Session

The presentation itself is a key interactive exercise. To get the most out of it:

- ♣ Installation: Install your poster in the space allocated to you, respecting the times and instructions provided by the organizers.
- ♣ Availability: Be present and available near your poster during the dedicated time slots to engage in conversation with visitors, answer their questions and discuss your work.
- ♣ Preparation for the exchange: Anticipate the questions that your research might raise and prepare concise answers, as well as a more detailed version of your presentation (approximately 3-5 minutes).
- ♣ Contact details: Include your contact details (institutional email address, ORCID identifier, link to a research profile) in a visible manner to allow interested people to contact you after the conference.

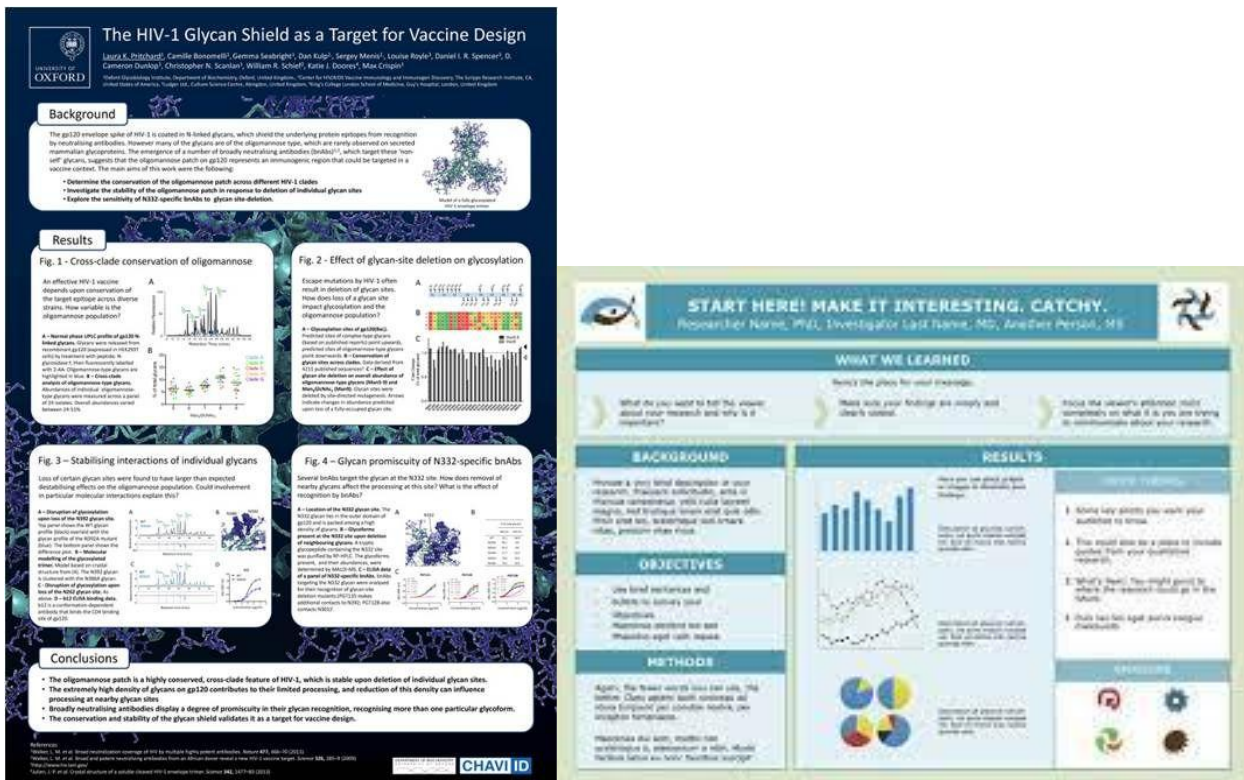


Figure 27: Example of scientific posters, in portrait or landscape format.

6 Ethics of scientific writing

In the field of scientific publishing, a rigorous code of ethics governs the production and dissemination of knowledge. This code aims to guarantee the reliability, credibility, and integrity of published work. Failure to comply with these principles can have serious consequences, ranging from exclusion by leading journals to major repercussions for the author's scientific career. When a researcher signs a publication contract or submits a manuscript to a journal, they commit to respecting several fundamental conditions:

- ✓ The work presented is original;
- ✓ The author holds full intellectual property rights;
- ✓ No substantial part has been published previously;
- ✓ The manuscript or a significant portion thereof is not simultaneously submitted elsewhere.

If any of these conditions are not met, the text must not be submitted for publication. If a substantial portion has already been published, the author must obtain written permission from the copyright holder and provide a copy to the publisher. This situation must also be clearly indicated in the manuscript.

6.1 Plagiarism

Plagiarism is defined as the appropriation of another's words, ideas, or results, presenting them as one's own. It constitutes a serious scientific offense and is treated with the utmost rigor.

According to Algerian legislation, plagiarism covers any act committed by a student, a teacher-researcher, a permanent researcher or any other person involved in scientific or educational work, when it involves falsification of results or intellectual fraud in a publication.

Examples of plagiarism:

- Reproducing in whole or in part ideas, data, paragraphs or extracts from articles, books, reports, studies or websites, without mentioning the source and the author;
- To quote an extract without putting it in quotation marks or specifying the reference;
- Use data, arguments or documents produced by others (articles, handouts, reports, etc.) by presenting them as personal work.

- Translating a document, in whole or in part, from a language to that used by the student or researcher, without mentioning either the translator or the source, constitutes an unethical practice.
- Including in a scientific work the names of authors who did not contribute to its creation, or adding names without the explicit agreement of the people concerned, is also considered a serious offense.

6.2 The problem of plagiarism

With the development of the internet, access to a vast amount of information has become very easy. Copying and pasting passages to write a text is therefore simple, but when no source is indicated and the text is a direct quotation, this constitutes plagiarism, akin to a form of intellectual theft. Such a practice is punishable, especially since current digital tools allow for the rapid detection of the exact origin of copied content. Furthermore, reformulating large excerpts from someone else's work without indicating the original source is also considered plagiarism. Rewriting a text in one's own words does not automatically make it original.

6.3 Plagiarism detection software



6.4 How to avoid plagiarism?

To adopt an ethical scientific practice, it is necessary to:

- ❖ Explicitly cite all sources used (ideas, concepts, phrases, illustrations, etc.);
- ❖ Place any non-paraphrased textual borrowing in quotation marks;
- ❖ Provide complete and accurate bibliographic references;
- ❖ Produce a personal synthesis from the readings you've done.

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