

Lecture 7: Tenses Used in a Scientific Paper – Focus on Biology

When writing your biology paper, thesis, or report, you mainly need three tenses:

1. Present simple – for general facts or ongoing research.

Example: “Bacteria grow faster in warm environments.”

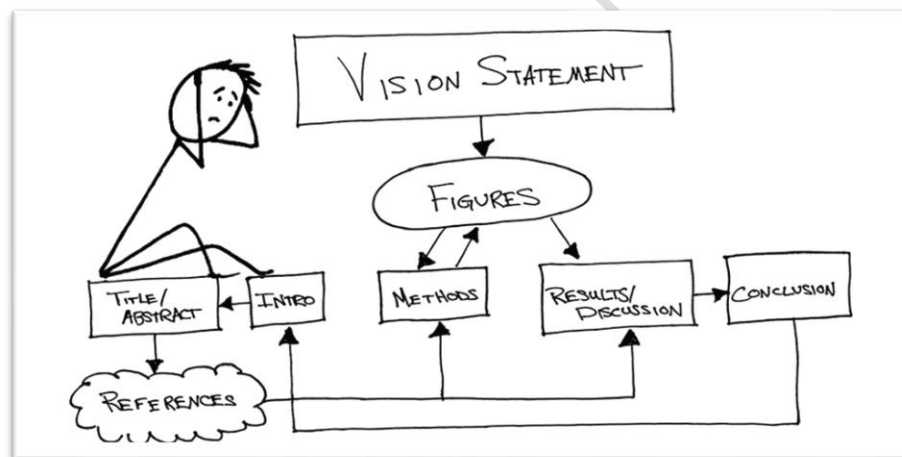
2. Past simple – for what you did in your experiments.

Example: “We measured the bacterial growth using nutrient agar.”

3. Present perfect – for what has been done before and continues to be important.

Example: “Many researchers have studied the role of *Pseudomonas* in soil fertility.”

In scientific writing, sometimes we use active voice (“We found...”) and sometimes passive voice (“It was found...”). In the Materials and Methods, passive is preferred — because the focus is on what was done, not who did it.



How to Change Active → Passive

Active

We collected water samples.

We isolated bacteria from the samples.

We designed an experiment to test the hypothesis.

Passive

Water samples were collected.

Bacteria were isolated from the samples.

An experiment was designed to test the hypothesis.

1. Introduction and Aims

Use Present Simple for background ideas and general facts:

“Biochar improves soil fertility and reduces heavy metal contamination.”

Use Past Simple for what you did or aimed to do:

“The aim of this study was to investigate the effect of *Pseudomonas putida* on tomato growth.”

Use Present Perfect for previous studies that are still relevant:

“Over the last decade, scientists have explored various microbial treatments for wastewater.”



2. Literature Review

Use Present Simple when describing what is known:

“Many studies show that *E. coli* can survive in untreated sewage.”

Use Present Perfect for ongoing research:

“Researchers have investigated the interaction between bacteria and heavy metals since 2005.”

Use Past Simple for completed studies:

“In 2010, Smith analyzed the microbial diversity in polluted rivers.”



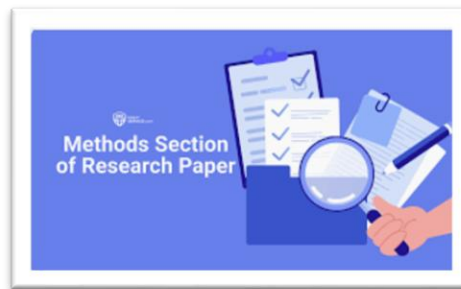
3. Materials and Methods

Always use Past Simple (usually in passive voice):

“Samples were collected from the Tigris River.”

“DNA was extracted using a standard kit.”

“Nutrient agar plates were incubated at 37°C for 24 hours.”



4. Results and Discussion

Use Past Simple when reporting your findings:

“The bacterial count was reduced after treatment with activated biochar.”

Use Present Simple when interpreting your results:

“These results indicate that biochar improves microbial activity.”

Combine both for clarity:

“We found that enzyme activity increases with temperature.”



5. Conclusions

Use Modal verbs (may, might, could, would) for careful or possible conclusions:

“This study suggests that *Pseudomonas putida* may enhance plant growth.”

Use Present Perfect for describing what your paper achieved:

“We have demonstrated that biochar can reduce heavy metal uptake in plants.”

Use Future Simple for next steps:

“Future research will focus on testing biochar under field conditions.”



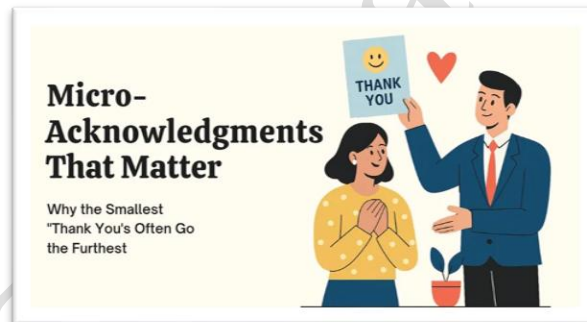
6. Acknowledgments

To thank sponsors:

“This research was funded by the College of Science, Mustansiriyah University.”

To thank people:

“The authors would like to thank Dr. Noor for providing the bacterial strain.”



Quick Summary Table

Section	Tense	Example (Biology)
Abstract / Aim	Present or Past	This paper aims to study soil bacteria.
Background	Present Perfect	Scientists have investigated biochar for years.
Methods	Past (Passive)	Samples were taken from sewage.
Results	Past	The colonies were counted after 48 hours.

Discussion	Present	These findings suggest that biochar reduces pathogens.
Conclusions	Modal / Present Perfect	Our results may contribute to sustainable agriculture.
Acknowledgments	Past or Present	The project was funded by the University.

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