Publish or perish: an editor's dilemma

A case study on scientific ethics

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Background

You are a section editor of the Journal of Soil Microbiology (JSM), an international journal dealing with applied and theoretical topics. You receive two manuscripts, submitted from two different, prominent laboratories. As editor, your task is to send the papers to appropriate reviewers and make decisions regarding the suitability of the manuscript for publication in JSM.

The papers arrive in the mail on the same day and are both opened by your secretary and are waiting on your desk when you arrive at work in the morning.

One manuscript, entitled: "Enhancing Crop Yields by Effective control of soil pathogens using a new antibiotic" is submitted by Dr. João Feijão et al. from a crop science department of a well-known university. The paper describes the use of relatively low concentrations of Mezlocillin (a quinalone antibiotic) to kill pathogenic fungi. They report significant yield increases of vegetable crops with a single application. They also note some ancillary harmful effects on other soil microbes, but conclude that it is effective in protecting various vegetables from the pathogen.

Another manuscript, entitled: "Ecological advantages associated with application of a new quinalone antibiotic (Imipenem) to an old-field community: increased species diversity and increased numbers of an endangered butterfly" was submitted by Professor Mira Wild and her colleagues from a major ecological station. They noted that antibiotic application seems to kill an introduced pathogenic fungi that was disturbing old-field succession. The result, after just one application, seemed to be an increase in plant species richness. More so, a small bush, a major food source of an endangered butterfly, increased fruit production. Consequently, there were more caterpillars and later more butterflies. They noted that there were some harmful effects to the soil microbe community.

You, as editor, write both authors (Feijão and Wild) suggesting they combine the manuscripts into one paper, because both describe a technique of using applications of two essentially identical quinalone antibiotics to controlling fungal pathogens. You have discussed this with the general editor and both agree that the journal does not have the space to publish two papers describing the use of the same antibiotic to control fungi. Dr. João Feijão immediately writes back saying that he and his colleagues would welcome the opportunity to publish the paper with Dr. Wild and her group. Feijão does point out that he showed the technique and preliminary data to Sneed Hern, who completed a post-doc in Feijões' lab and has since move the Wilds group. Hern is one of the co-authors of the paper.

Dr. Wild writes back and says that she is unwilling to combine the papers. She believes that the papers should be sent for review and the reviewers and editors should decide which paper to publish based on scientific merit.

Reviewer's comments:

As editor, you send the papers to three reviewers. Because the circumstances are a bit unusual, you send each reviewer both papers, asking them to evaluate each and make a recommendation.
Reviewer 1 is a plant breeder. She recommends accepting paper 1. She notes that it is badly written, but the data are sound and the findings are of practical relevance. Furthermore, although paper 2 is nicely written, it deals with topics of little importance for humans.

Reviewer 2 is an ecologist. He points out that paper 2 shows how an important ecosystem can be restored and an endangered species protected using this technique. Also, paper 1 is badly written and should be rejected for that reason even though the results are robust.

Reviewer 3 is a microbiologist. He writes that the dangers associated with the application of general antibiotics in nature far outweigh the benefits in either of these cases. In fact, generating antibiotic resistance and thereby selecting for more virulent fungi may ultimately harm both the vegetable crops and the endangered species. Reject both as they both do more harm than good.

Describe/define the moral ethical problems you see, decide which papers to publish, and lastly, explain your decision to the authors submitting the manuscripts.

Some Issues:
Priority of Discovery
Transfer of Intellectual property
Weight of competing referees reports
Free flow of scientific information

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