

## Comment on "Fluorescence Inner-Filtering Correction for Determining the Humification Index of Dissolved Organic Matter"

I read with interest the paper of Ohno (1) but feel that some comments are needed. He only had a very small group of samples, and it is questionable that a base-extracted sample is relevant. Such material does not exist in the dissolved state

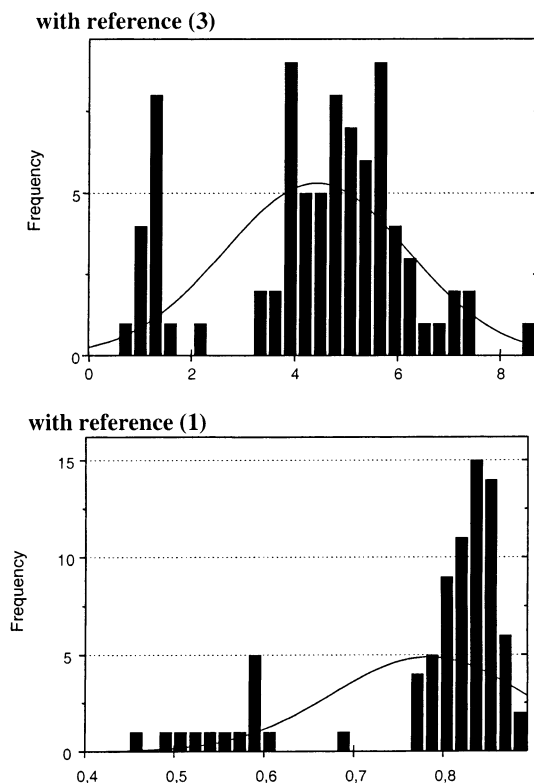


FIGURE 1. Distribution of HIX values calculated in two different ways.

in situ. Also his recommendation to make a dilution series for every humidification index (HIX) measurement is not practical. Fortunately, his data indicate that the differences between uncorrected and corrected HIX at  $A_{254} < 0.1 \text{ cm}^{-1}$  are only on the order of 10%. Considering all the other problems in dissolved organic matter (DOM) research (2), this is minor.

More importantly, he neglected to indicate that higher DOM concentrations can affect HIX values not only because of filtering effects but also because of physicochemical interactions in the solution. Such effects cannot necessarily be predicted with UV absorption. Fortunately, in aqueous soil extracts this is not a difficulty because of the good correlation between UV absorption and DOM concentration. However, this may be a problem when working with crop residue extracts. His view that HIX can be statistically unstable since the denominator can become small in respect to the numerator is quite correct. Ratios always need to be analyzed with caution and a suitable transformation made before statistical evaluations.

The HIX histograms calculated from the aqueous extracts of 84 Bavarian topsoils are given in Figure 1. The HIX recommended by Ohno shows no improvement. In fact, the outlier with the highest HIX value cannot be detected with it. The final conclusion is that Ohno's views are correct but that they should not be used to make DOM research more complicated than necessary.

### Literature Cited

- (1) Ohno, T. *Environ. Sci. Technol.* **2002**, 36, 742.
- (2) Zsolnay, A. [www.esf.org/generic/163/0020L.pdf](http://www.esf.org/generic/163/0020L.pdf); 2001.
- (3) Zsolnay, A.; et al. *Chemosphere* **1999**, 38, 45.

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