Corrigendum

Corrigendum to “Investigating the Degradability of HDPE, LDPE, PE-BIO, and PE-OXO Films under UV-B Radiation”

A. Martínez-Romo, R. González-Mota, J. J. Soto-Bernal, and I. Rosales-Candelas

Instituto Tecnológico de Aguascalientes, Avenida Adolfo López Mateos No. 1801 Ote, Fraccionamiento Bona Gens, 20256 Aguascalientes, AGS, Mexico

Correspondence should be addressed to R. González-Mota; rgmota40@gmail.com

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In the article titled “Investigating the Degradability of HDPE, LDPE, PE-BIO, and PE-OXO Films under UV-B Radiation” [1], there were errors in the key of Figure 3, the legends of Figures 2, 3, 4, and 5, which are corrected below. In addition, the authors would like to provide the following missing information:

The exact composition of the bags is commercially confidential.

The presence of antioxidants and photostabilizers might affect the comparison of UV-oxidation time. When polyethylene is exposed to photooxidation, hydroperoxides do not

accumulate into the polymer matrix, but when exposed to thermal oxidation they accumulate. Also, all the additives included in the experiments to induce polyethylene oxidation inhibit the development of carbonyl groups to some extent [2]. In this investigation, we are looking for alternative ways to accelerate the degradation process in commercial polymer, so we verified that in the presence of UV-B radiation and oxygen, chains of HDPE and PE-BIO experience structural changes at the molecular level, forming vinyl and carbonyl groups, which are considered the main products of photooxidation.

FIGURE 2: Carbonyl index (I_{CO}) of the LDPE (■), HDPE (●), PE-BIO (▲), and PE-OXO (▼) films exposed to UV-B radiation.

FIGURE 4: Crystalline phase fraction of the LDPE (■), HDPE (●), PE-BIO (▲), and PE-OXO (▼) films exposed to UV-B radiation.

FIGURE 3: Vinyl index (I_V) of the LDPE (■), HDPE (●), PE-BIO (▲), and PE-OXO (▼) films exposed to UV-B radiation.

FIGURE 5: Dichroic ratio of the LDPE (■), HDPE (●), PE-BIO (▲), and PE-OXO (▼) films exposed to UV-B radiation.

References

- [1] A. Martínez-Romo, R. González-Mota, J. J. Soto-Bernal, and I. Rosales-Candelas, "Investigating the degradability of HDPE, LDPE, PE-BIO, and PE-OXO films under UV-B radiation," *Journal of Spectroscopy*, vol. 2015, Article ID 586514, 6 pages, 2015.
- [2] F. Gugumus, "Contribution to the photolysis of hydroperoxides in polyethylene," *Polymer Degradation and Stability*, vol. 27, no. 1, pp. 19–34, 1990.