

Eden Research Laboratory

To: Cocona

Date: December 31, 2019

From: Thomas Poth

Number of pages including cover: 2

Regarding: ASTM D5511 study for Cocona Sample (2072, 2074 & 2075)-341 days

Up-

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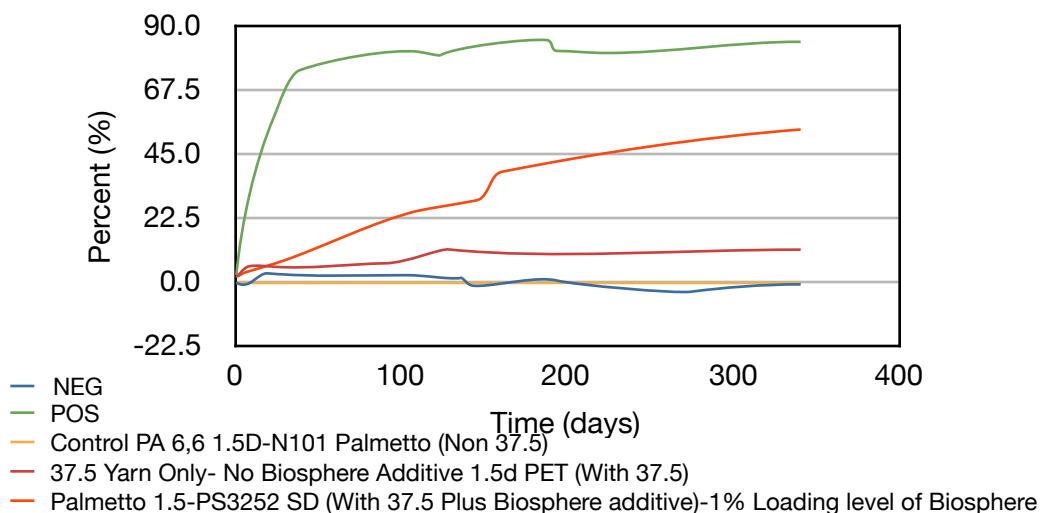
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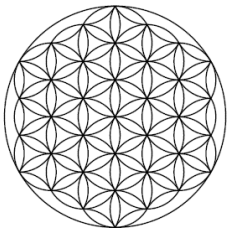
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| | Inculum | Negative | Positive | Control PA 6,6 1.5D- N101 Palmetto (Non 37.5) | 37.5 Yarn Only- No Bios- phere Additive 1.5d PET (With 37.5) | Palmetto 1.5- PS3252 SD (With 37.5 Plus Bios- phere additive)- 1% Load- ing level of Bios- phere |
|------------------------------------|---------|----------|----------|---|---|---|
| Cumulative Gas Volume (mL) | 1429.8 | 1383.6 | 9573.9 | 1291.0 | 3876.1 | 12368.8 |
| Percent CH ₄ (%) | 45.6 | 42.0 | 40.5 | 54.3 | 37.8 | 49.0 |
| Volume CH ₄ (mL) | 651.6 | 580.9 | 3875.3 | 701.6 | 1464.6 | 6061.5 |
| Mass CH ₄ (g) | 0.47 | 0.41 | 2.77 | 0.50 | 1.05 | 4.33 |
| Percent CO ₂ (%) | 38.6 | 39.4 | 41.9 | 38.9 | 38.9 | 36.7 |
| Volume CO ₂ (mL) | 552.0 | 544.7 | 4009.5 | 502.3 | 1508.6 | 4542.0 |
| Mass CO ₂ (g) | 1.08 | 1.07 | 7.88 | 0.99 | 2.96 | 8.92 |
| Sample Mass (g) | 10 | 10 | 10 | 15.0 | 13.0 | 15 |
| Theoretical Sample Mass (g) | 0.0 | 8.6 | 4.2 | 9.3 | 8.1 | 9.3 |
| Biodegraded Mass (g) | 0.64 | 0.60 | 4.22 | 0.64 | 1.59 | 5.68 |
| Percent Biodegraded (%) | | -0.5 | 84.8 | 0.0 | 11.7 | 54.0 |
| * Adjusted Percent Biodegraded (%) | | -0.6 | 100.0 | 0.0 | 13.8 | 63.6 |

* Outside of the ASTM D5511 method and on the assumption that the positive control (Cellulose) will fully biodegrade, all value have been proportionally adjusted.

Biodegradation





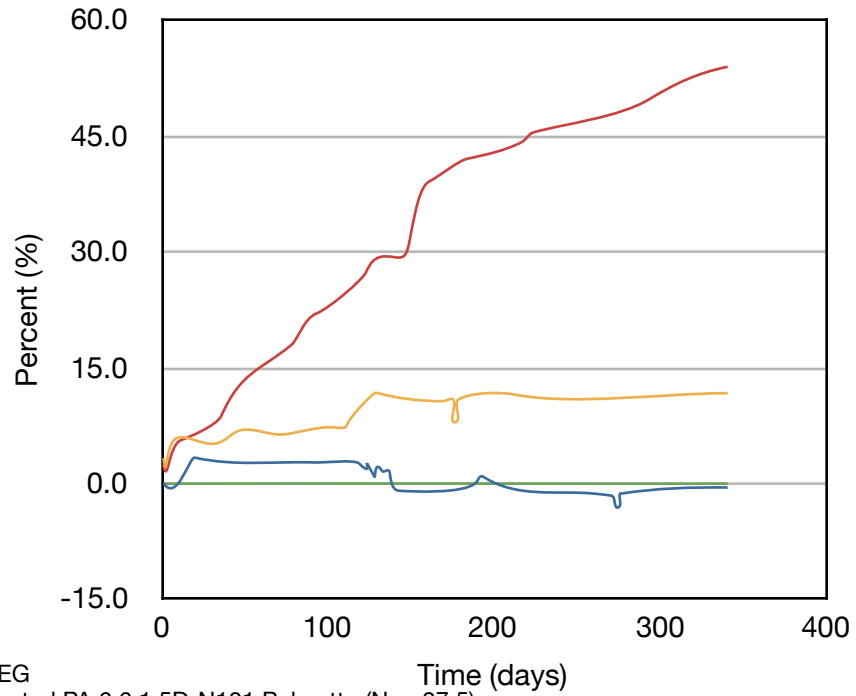
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Biodegradation



- NEG
- Control PA 6,6 1.5D-N101 Palmetto (Non 37.5)
- 37.5 Yarn Only- No Biosphere Additive 1.5d PET (With 37.5)
- Palmetto 1.5-PS3252 SD (With 37.5 Plus Biosphere additive)-1% Loading level of Biosphere