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How to Take Advance from Cigarette Stubs

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ABSTRACT

Cellulose acetate contained in cigarette stubs is going to go to gray containers (rejection). We make a revision supported by experimental essays in order to take benefit of this valuable material

Keywords: *Cellulose acetate, cigarette stubs, biotechnology, rejected materials, profit, revaluation*

INTRODUCTION

There is in Spain an old system for recovery materials from family houses. There are several types of containers that can be distinguished by container colors:

- Blue (papers and similar)
- Green (all colored glasses)
- Yellow (plastics, metals, bricks)
- Brown (organic matter)
- Grey (all other rejected items)

The European Union advices to recover the 50% of all materials, but Spain only are fulfilling the 35%. There are several new lines of recovering under screening. One of them is tobacco waste:

- plastic films covering pack of snuff
- paper or cardstock from the itself box
- cigarette stubs

Cigarette stubs contain residual tobacco, residual paper, and a filter. The filter is constituted from cellulose acetate. The specific solvent for filter itself is acetone. We remove tobacco in order to take profit from the solubility of cellulose acetate surrounded by paper of the cigarette.

After several hours, only a small part of the cellulose acetate was dissolved. Consequently we crumble the filter by means a domestic trencher. Now, crunched filters are immediately soluble. The key is therefore to crumble the filter Cellulose acetate was first prepared by a French man during nineteenth century. It is an artificial polymer such as rayon. It works like a thermoplastic. To have an idea about the daily consumption of cellulose acetate we have to take into account 47 million Spanish people, a tax of tobacco smokers of 24% and 0, 16 g / filter. Result: 35 t of cellulose acetate / day. There is a handicap, logistics. The problem is therefore avoidable with the incumbency of authorities.

EXPERIMENTAL

There were crunched cigarette stubs in a laboratory trencher. We collect the crunched material for performing several assays. Cigarette stubs with tobacco were also trenched with a laboratory machine (very effective). We obtain therefore fine materials very soluble with acetone we buy 3 ciclamens perfectly distinguished from the color of flowers. White flower plant is used as blank. We added around 3 g of crunched filters: red without tobacco and violet with tobacco.

Blank and violet were the first of dyeing after 6 months. Both plants were showing a good flourishing just before the dying. Red has had 2 lives during the assay; today is living yet, but without flowers.

DISCUSSION

It is recognized that 3 flowers are not enough, but that is showing a trend. Under of our consideration, the best is the violet one (cellulose acetate plus tobacco). It has had a very homogeneous growing

RESULTS

Tobacco stubs can be used for several outlets:

- organic matter (brown container)

- gardening (compost)
- plastic parts

The fine powder from stubs can be used perfectly in gardening. The material obtained by trenching is solved by the compost after some hours (around 3 days)

CONCLUSION

The production of plastic parts is possible because we assayed each reactor separately in a laboratory bench:

- Reactor for eliminating tobacco
- Reactor for solving the cellulose acetate
- Sohxlet for avoiding impurities
- Screw
- Extruder
- Selling

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