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Using composting for control seed germination of invasive plant (water hyacinth) in Extremadura (Spain)

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The biotransformation of the invasive water hyacinth (Eichhornia crassipes) by composting has been showed as a viable alternative to offset the economic cost of eliminating an invasive plant giving a value to the by-product; however, as result of the propagative plant capacity, it was necessary to check if the composting process could eliminate the germination seed rate.

Despite the high temperatures and the biochemical biotransformation processes of the composting components, in the case of seed water hyacinth, with a recovery rate of 100%, damage was observed in some parts of the seed anatomy such as in the outer teguments; however, other parts of the seed coat and the endosperm maintained their integrity. A microscopic analysis revealed that the embryo was noticeable and this was supported by the rate of seed germination observed ($3.5 \pm 0.96\%$).

The results indicate that the use of water hyacinth for compost production is not completely safe from an environmental perspective.

Keywords: Eichhornia crassipes, water hyacinth, invasive plant, seed anatomy, seed germination rate, compost.

References:
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