



**ENVIRONMENTAL IMPACT OF WINERY EFFLUENT IN THE WESTERN
AND NORTHERN CAPE PROVINCES**

Dedication

I, the undersigned, hereby declare that the work contained in this dissertation is entirely
my own original research and that it has not been, in any way, in part or wholly,
submitted to any authority for the purpose of obtaining a degree.

Signature **AZWIMBAVHI RECKSON MULIDZI** *July 2001*

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In the Department of Plant Production and Soil Science
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University of Pretoria

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May 2001





ABSTRACT

Declaration

I, the undersigned, hereby declare that the work contained in this dissertation is entirely my own original research and that it has not at any time, either partly or fully, been submitted to any university for the purposes of obtaining a degree.

Signed: ARMulidzi Date: 20 July 2001



ABSTRACT

ACKNOWLEDGEMENTS

This study is an integral part of a multidisciplinary research programme that was started as a result of a lack of information on the disposal practices of winery effluent in South Africa. The objective of this study was to investigate the environmental impacts of winery effluent applied in different ways on different types of soils so that guidelines for the identification and selection of suitable combinations of disposal methods and soil types for land disposal of winery effluent could be developed, and also to propose alternative management strategies which comply with national and international legislation.

THE SCOPE OF THE STUDY AND THE RESEARCH DESIGN

Ten wineries were selected for the study. The soil and effluent samples were collected at each winery on a monthly basis and analysed. From the results it was clear that different wineries use different disposal methods and on different soils. The study confirmed that winery effluents pose definite pollution problems. The biggest problem when winery effluent is applied to soil is the high organic matter levels in the effluents during the winemaking period. Most of the soils do not retain it and it leaches straight to a water table at the bottom of the soil profile and from there seeps through to nearby streams or ground water bodies, thereby polluting the environment.

RESULTS AND CONCLUSIONS

In the study it was found that there are many similarities between wineries but there are also major differences between them such that general recipe cannot be used. From the study it was also clear that deep, highly permeable, sandy soils (especially those with E horizons) are not suitable for disposal of winery effluents, either by means of irrigating pastures or ponding.



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