



Farming, Food and Health. **First**™
Te Ahuwhenua, Te Kai me te Whai Ora. Tuatahi

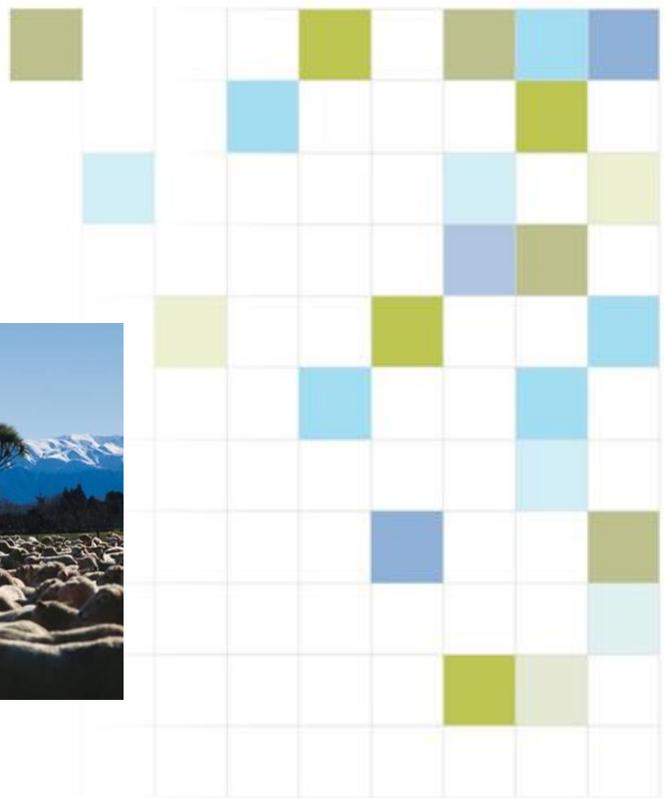
Earthworm ID

RE500/2015/079

August 2015



New Zealand's science. New Zealand's future.



Earthworm ID

Report prepared for MyNoke

August 2015

Schon, N.

DISCLAIMER: While all reasonable endeavours have been made to ensure the accuracy of the investigations and the information contained in this report, AgResearch expressly disclaims any and all liabilities contingent or otherwise that may arise from the use of the information.

COPYRIGHT: All rights are reserved worldwide. No part of this publication may be copied, photocopied, reproduced, translated, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of AgResearch Ltd.

Table of Contents

1. Summary.....	1
2. Introduction	1
3. Results and Discussion	1
4. References.....	2

1. Summary

A sample of earthworms were collected by MyNoke from their vermicompost to be assessed for earthworm abundance and species composition in June 2015. The earthworm species observed included *Eisenia Fetida*, *Lumbricus rubellus*, *Aporrectodea trapezoides*, and *Aporrectodea longa*. The vermicompost sample from MyNoke contains earthworm species from all three types of functional groups.

2. Introduction

A sample of earthworms were collected by MyNoke from their vermicompost to be assessed for earthworm abundance and species composition in June 2015.

3. Results and Discussion

There were 92 earthworms in the sample given by MyNoke. The earthworm species observed included *Eisenia Fetida*, *Lumbricus rubellus*, *Aporrectodea trapezoides*, and *Aporrectodea longa* (Table 1). The topsoil southern worm was the most common earthworm at 48%, next was the dung worm at 35%, then the blackhead worm at 15% and the least common species was the tiger worm at 2%. The tiger worm is typically a common earthworm in composting systems and can be purchased for this purpose. The tiger worm is not very common in our pasture systems, as it is more suited to a composting environment. .

Table 1: Earthworm community composition.

Functional group	Earthworm species	Common name	Abundance (%)
Dung	<i>Eisenia Fetida</i>	Tiger worm	2
	<i>Lumbricus rubellus</i>	Dung worm	35
Topsoil	<i>Aporrectodea trapezoides</i>	Southern worm	48
Deep	<i>Aporrectodea longa</i>	Blackhead worm	15

In an ideal pasture system you would have earthworms representing all three earthworm functional groups (dung, topsoil and deep, Figure 1) so that their activity in the soil can

complement each other [1]. The vermicompost sample from MyNoke contains earthworm species from all three types of functional groups. While there are still some pastures which have no earthworms and would benefit from the addition of all earthworm types, it is common for the deep-burrowing earthworms to be absent from our pasture systems [2].

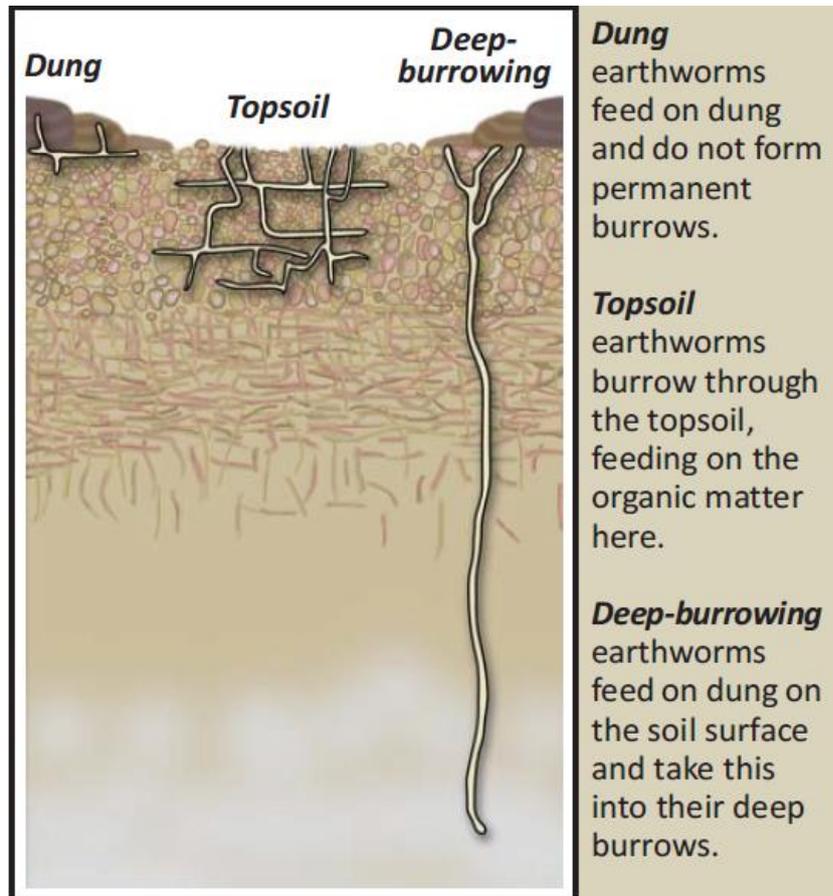


Figure 1: The three functional earthworm groups present in our pasture systems.

4. References

1. Schon, N.L., A.D. Mackay, and M.A. Minor, *Relationship between food resource, soil physical condition and invertebrates in pastoral soils*. Soil Science Society of America Journal, 2012. **76**: p. 1644-1654.
2. Schon, N.L., A.D. Mackay, and M.A. Minor, *Earthworms in New Zealand sheep- and dairy-grazed pastures with focus on anecic Aporectodea longa*. Pedobiologia, 2011. **54**: p. S131-137.