

Dung Beetle Inquiry

Is the introduction of new Dung Beetle species into New Zealand a sustainable option for the future of farming?

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In order to gauge the knowledge and get the opinions of different people involved in the Agricultural sector about Dung Beetles, surveys were sent to different groups. The response from Ag Scientists was reasonably positive, as 66.7% of people thought that introducing Dung Beetles would be useful. However, there is still a third that think it would not be. This could be due to lack of information and awareness around how Dung Beetles could be beneficial or maybe they have conducted their own research and found that it would not be beneficial.

According to the Ag first survey results, 100% of those surveyed thought that it would be beneficial to introduce Dung Beetles into New Zealand in order to meet future farming needs. These survey results help to understand that there are positive views on introducing dung beetles and the benefits they will have on New Zealand's agricultural sector and the impacts they will have on reducing the pollution of waterways and the atmosphere caused by the dung of farm animals most specifically, cows.

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Dung Beetles are a species of insects that feed either entirely or partially on the manure of animals. In New Zealand where cattle and other farm animals are no organisms present to break down the animal's dung. This leads to a number of problems caused by excess excretion including surface runoff, reduced water quality, nitrate leaching and degradation of soils. These all have a negative impact on the environment and have lead people to blame extensive farming practices as the cause for New Zealand's tainted 'Clean Green' image. A solution for this could be to introduce new species of Dung Beetle's that are selected based on their ability to break down animal's dung in order to oppose the negative effects of excess dung. Therefore, the dung is no longer just sitting on top of the ground, it is being broken down and used as a fertilizer and nutrients to be put back into the soil.

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Dung Beetles are able to prevent the pollution from this cycle and also use the dung effectively in order to reduce the amount of alternate fertilizer farmers need to use. Introducing Dung Beetles will mean that the dung is broken down so that nitrogen is not leaked into the atmosphere or carried into rivers and lakes via runoff from rain.

Main Benefits of Introducing Dung Beetles.

- Soil Structure and function
- Water Quality
- Pasture Quality
- Reducing Pest Species

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Removing dung from the pastures surface reduces fly pests that breed in livestock dung. This creates a healthier environment for animals like sheep and cattle to feed in and they are more likely to eat the grass that is not covered in dung resulting in increased pasture productivity.

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Economically farmers would potentially benefit the most from introducing dung beetles. The increased pasture productivity means they are able to get the most out of their pastures and will not have to move their stock as often because all of the paddock is available to be used as nourishing feed. The increasingly fertile pastures as a result of dung beetles also mean that

farmers are able to spend less on buying fertilizer and methods to spread it. Because dung beetles reduce runoff into water streams farmers are able to stop wasting money on initiatives to reduce the degradation of water quality.

The introduction of Dung Beetles would impact on fertilizer companies because their products would be in less demand due to the natural fertilization of pastures from dung beetles and the dung and urine excreted by livestock. This would have negative impacts on those companies. Scientists and researchers studying the impacts of dung on soil and how to reduce the impacts they leave would find it hard to get funding as there would be a solution for the problem. However, it would be reasonably easy to find other problems to work on in order to increase the sustainability of New Zealand farms.

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From my findings I conclude that introducing new species of Dung Beetles into New Zealand will most definitely meet our country's future needs. As our agricultural sector rapidly increases and the number of animals on our farms increases we need an organism that is designed to deal with the excretion of stock in positive ways to ensure it has the least effect on the environment as possible. Dung Beetles will be able to cope with the dung left by livestock and ensure it is reused in beneficial ways. However, it will take some time to see noticeable benefits from Dung Beetles so in the meantime farmers will still have to continue using methods in order to deal with the dung of animals on their farms.

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