

## Seed dispersal: how cattle can contribute to shape an ecosystem

Estimated reading time: 7 minute(s)

Seed dispersal is the moving of seeds from one location to another. **Seed dispersal is important for plants** because it provides an opportunity for a *scattered or dispersed growth of plants, high germination rate, less intra-competition, promotes genetic diversity and reduced extinction rate.*

**Most ecosystems are abundant with vegetation because animals tend to disperse and germinate their seeds.**

**Cattle are one of the few animals that contribute to the growth of the plants they forage on in a natural rangeland.**

Besides the **dung that is highly utilizable for plant germination** and growth, they also contribute to the existence of plants through **dispersal of plant seeds**. Cattle play a crucial role in the ecosystems structure and function, by dispersing seeds in all corners of the landscape, dispersing all sorts of plant seeds they forage.

**Cattle disperse seeds in two common ways:**

### 1. Dispersal through dung

Cattle disperse tree seeds through dung deposits, **this mostly occurs in trees with hard seed shells or that require seed dormancy treatments**, they mostly have large woody protective outer coatings. The process of plant species that disperse through the gut is also referred to

## Seed dispersal: how cattle can contribute to shape an ecosystem

as *endozoochory* or *endozoochorous dispersal* (D'hondt & Hoffmann 2011). **The pods and a proportion of the seeds are consumed by herbivores and form an important part of their diet** (Gwynne, 1969). The seeds mostly pass undamaged through the cattle's gut, the digestive juices then soften seed coat, and this facilitates water imbibition during germination (*Tran & Cavanagh, 1984*). This process also enhances favourable germination microclimates for the seeds, before they are deposited as dung.

On the contrary, animals like **goats fail to disperse tree seeds through dung deposits, this is because they tend to devour the entire pod.**

### 1. Dispersal with animal fur or coat

**Majority of animals disperse seeds everyday unknowingly, this is achieved when the seeds cling on the fur or coat of the animal.**

Grass and herbs have seeds that have adapted to opportunistically stick on the animal's body, this **provides the opportunity for seeds to move from one location to another**. The mode of dispersing seeds through animal fur or coat is referred to *epizoochory*. Grass and herb seeds **require mainly just rain drops to instantly sprout and prosper**, with the assistance of dispersal by cattle, they tend to flourish.

### Conclusion

An ecosystem is comprised of living organisms that play major and minor roles dispersing seeds to ensure a functional system.

## Seed dispersal: how cattle can contribute to shape an ecosystem

***Cattle is one of the animals that play a role to shape an ecosystem, by dispersing seeds, breaking seed dormancy and creating a fertile ground for plant growth.***

### References

Halevy, (1974). Effects of gazelles and seed beetles (Bruchids) on germination and establishment of Acacia species. *Israel J. Bot.* 23: 120-126.

Lamprey, H.F., Halevy, G. & Makacha, S. 1974. Interaction between *Acacia*, Bruchids and Large Herbivores. *E. Afr. Wildl.* 12: 81-85.

D'hondt, B., & Hoffmann, M. (2011). A reassessment of the role of simple seed traits in mortality following herbivore ingestion. *Plant Biology*, 13, 118-124.

Bradshaw, S. D., Dixon, K. W., Hopper, S. D., Lambers, H., & Turner, S. R. (2011). Little evidence for fire-adapted plant traits in Mediterranean climate regions. *Trends in plant science*, 16(2), 69-76.

Gwynne, M. D. (1969). The nutritive values of Acacia pods in relation to Acacia seed distribution by ungulates. *East African Wildlife Journal*, 7, 176-178.

Tran, V. N., & Cavanagh, A. K. (1984). Structural aspects of dormancy. In *Germination and reserve mobilization* (pp. 1-44). Academic Press.