

SEED COATINGS TO AID PASTURE ESTABLISHMENT

Jim Scott,
Department of Agronomy and Soil Science,
University of New England,
Armidale, NSW.

Seed coatings have been applied to seeds for many purposes for decades (especially fungicide and inoculant coatings). Coatings for other purposes have had a chequered history, largely as a result of a lack of understanding of the science behind seed coatings.

WHY COAT SEEDS ?

Chief attraction - seed coating is the best practical way of delivering accurately controlled quantities of materials to the precise position where each seed is sown. It avoids having to treat the bulk of soil with the active ingredients. For some materials, it is the most effective means of application - i.e. more benefit is gained per unit of material applied.

Seed coatings have been used to assist in planting; legume inoculation; protection against insects, disease; supply of nutrients; selective weed control; etc.

IMPORTANT FACTORS AFFECTING PERFORMANCE

Interactions between many factors can help to explain why the performance of seed coatings can vary. Some of the factors which affect seed coatings include the plant species, the physical and chemical properties of the seed coating and the soil, and environmental factors. These interactions need to be understood if the performance of seed coatings is to become predictable and reliable.

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- Seed-applied herbicides.
- Nutrients (especially phosphorus).
- Herbicide antidotes.
- Fungicides.

It is intended to develop multiple component coatings which can overcome limitations at establishment and provide a "competitive edge" to the sown seedling.

THE FUTURE

Seeds are vulnerable plant organelles which need to be treated with great care to ensure viability. The science behind seed coating needs to be developed such that we can minimise any negative effects of coatings while maximising any positive effects. The successful commercialisation of sophisticated seed coatings will be dependent upon there being:

- Large demonstrable positive effects of coatings,
- The development of efficient, automated coating processes, and
- Effective quality control for all coating materials and final coated product.

Because of the interactions identified above, the science of seed coating will require inputs, not only from agronomists and soil scientists, but also from plant physiologists, engineers, microbiologists, chemists and computer modellers.