

# Biological Control Basics

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The current increase in the demand for biological control products can largely be ascribed to the problems that have developed from the use of chemical pesticides. These problems include resistance, pest resurgence, environmental pollution and risks to human health. Biological control of plant pests and pathogens continues to inspire research with developments in many fields. It is designed to reduce plant pathogens, insects, parasitic nematodes and weeds. In the narrowest sense, biocontrol involves the suppression of pest organisms by other organisms. However, the interrelationships of many environmental variables can result in multiple interactions among organisms and their environment, several of which might contribute to effective biological control.

Biological control products / inoculants claiming improvement of plant production efficiency continue to be introduced to South African farmers. The rate at which these products are being introduced has increased rapidly since the early 1990's. Products can consist of single ingredients or blends of several materials. Some of the ingredients are recognized by the scientific and farming communities as having the ability to improve crop yields and/or quality. Others are often of unknown value to

production agriculture and should be evaluated for their ability to deliver upon the manufacturers' claims.

Farmers are confronted with biological control products every day and more often than not find themselves in a situation where they need to make decisions on the purchasing of these products. The following guidelines can assist farmers in making informed decisions:

1. Be aware of the specific disease problems that you experience on your farm. Biological products can be very specific with regard to disease control.
2. Find out if the proposed product has been registered according to Act 36 of 1947.
3. Look for a label on the packaging that contains specific information on the product e.g. shelf life, application rate, active organism/s, compatibility with other biological control products.
4. Find out at what pH and temperature range the biological agent is active. This information is very useful for the effective storing and application of these products.
5. Find out if the biological control product is compatible with the chemicals you apply during a growing season. Biological products contain living organisms that can be inactivated / killed by agrochemicals.

6. Can the company selling the product provide you with a professional consulting service for the setting up of an IPM (Integrated Pest Management) control program prior to selling of the biological control products? This should include a thorough determination of your disease situation and current crop management practices.
7. Does the company provide you with detailed instructions on how to handle and apply biological control products?
8. Is there any measure of the quality and purity of the biological control product you received? For example:
  - Does the company tell you exactly what organism/s is contained in the product and who made the species determination? This determination should have been made by a recognised taxonomic expert, not necessarily someone at the company.
  - Does the company offer reasonable solutions for any difficulties you may encounter and does it follow up to determine the success or failure of your program?

By making use of these guidelines a farmer can be in a position to evaluate a variety of biological control products and base his final decision on relevant information gathered during this process.