

Using research and development to improve agricultural productivity

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Introduction

The earth's population is growing at a rapid rate. By 2006, it had reached 6.5 billion, having been just 2 billion in 1950. By 2025, it may reach as much as 8 billion. This puts a huge strain on the earth's resources. The same area of land that in 1995 would have fed two people must by 2025 be made to work harder. It must be made to feed five people. The future requires sustainable solutions. Sustainability means that we leave at least as many resources for the future as we started with.

Sustainable business

Syngenta is a leading global agricultural business. It employs over 19,500 people in 90 countries. It invests around £500 million each year in research and development (R&D). It looks for ways to improve crops and crop production. Its goal is to provide new solutions to problems in the food chain. It mostly makes products that protect crops from weeds, disease and pests. It also develops improved crop varieties. If crops were not protected from pests and diseases, up to 40% of them could be lost. This makes Syngenta's work vital. Much of its work is with other businesses, but its products touch nearly 95% of people in the world.

R&D

Syngenta invests over \$2 million per day in R&D.

- * Research looks into the problems that farmers are facing. It then looks into ways to solve the problems.
- * Development involves turning the research findings into products. This involves many tests and re-tests. A product can take up to nine years to reach the market. This is very costly. Syngenta therefore makes sure that new products are protected by patent. This protects them in law. R&D also supports current products and improves them.

Product development

The main stages in development are:

- * chemists produce new compounds
- * biologists test the compounds
- * trials - these are tests 'in the field'
- * scientists test to ensure product safety
- * users are given support in their use of products. Many ideas do not make it through all the stages of this process.

Environmental sustainability

Syngenta also invests in projects to improve the farmed environment. These help to lead to more sustainability. Two examples are:

- * Soil and Water Protection (SOWAP) project. Soil erosion can be a huge problem. This four year project has shown how it can be reduced.
- * Operation Bumblebee. The number of bumblebees in the UK has fallen, partly due to changes in farming practice. At

least one type of bee is now extinct in the UK. This five year project researched the problem. Field margins on farms were sown with a special wild flower seed mixture. This built habitats to which bees and other insects have returned.

Conclusion

The population of the world is growing. This puts a strain on resources. Syngenta provides solutions to problems in crop production. It uses research and development to make sure they are sustainable. This has helped the lives of many rural communities. It helps to feed the world.