

## 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 increased to 6.5 billion, having been just 2 billion in 1950. By 2025, it is expected to reach 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 to feed five people. Feeding this growing demand requires sustainable solutions. Sustainability means that we leave at least as many resources for the future as our own generation started with.

#### **Sustainable business**

Syngenta is a leading global agricultural business, committed to sustainable production. It employs over 19,500 people in 90 countries. It invests around £500 million each year in research and development (R&D) to find ways to improve crops and crop production. Its goal is 'to be the leading global provider of innovative solutions and brands to growers and the food and feed chain'. It mostly makes products that protect crops from weeds, diseases and pest infestations, and it develops seeds of new crop varieties. Much of its work is business-to-business, but its products touch nearly 95% of the world's population. Its work is vital as it is estimated that up to 40% of food production could be lost without crop protection products.

#### **R&D**

Syngenta invests over \$2 million per day in research and development. I

- \* Research looks into the problems that farmers are facing and will then investigate possible solutions
- \* Development involves turning the research findings into products. This involves many tests and re-tests and a product can take up to nine years to reach the market. This is a very expensive process, so Syngenta makes sure that products are protected by patent. R&D also supports its existing products.

#### **Product development**

The main stages in development can make the process a lengthy one. These include:

- \* finding or making new crop protection compounds
- \* biologists test the compounds
- \* trials – tests held under specific conditions
- \* 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 increase environmental sustainability. Two examples are:

- \* Soil and Water Protection (SOWAP) Project. This is a four year project where Syngenta has demonstrated how the problem of soil erosion on agricultural land can be reduced.
- \* Operation Bumblebee. Changes in agricultural practices over many years have reduced bumblebees' food resources

and contributed to the disappearance of at least one native species. This project involved over five years of research into the problem of vanishing habitats on farms. Field margins sown with special wild flower seed mixtures produce habitats that bring environmental benefits for bees and other insects.

### **Conclusion**

There are increasing demands on resources as population grows. Syngenta provides sustainable solutions through research and development. This has helped the lives of many rural communities and helps to feed the world.