

Career Profile: Agronomist

Agronomy is the science of growing food and fibre crops, whether under rain-fed conditions or by means of irrigation. The agronomist develops and implements production systems that aim for maximum economical production without harming the environment. The kind of crops agronomists focus on may include maize, sorghum, peanuts, sunflower, cotton, sugar-cane, and potatoes. Agronomists study methods of dealing with these crops such as crop rotation, irrigation and drainage, classification of soil and its fertility, weed control, and insect and pest control. In carrying out their tasks the agronomist integrates a number of disciplines such as agricultural engineering, agro-forestry, crop production, genetics and plant breeding, horticulture, plant protection and soil science.

As an agronomist you will study interactions among plants, soils and the environment. Your work could include:

- Developing new types of grain, legumes and grasses that can help local farmers increase their food production and help replenish their soil. This involves techniques such as selective reproduction and can lead to increased nutritional value as well as higher crop yields.
- Developing new strains of fruit and vegetables.
- Classifying soil types and reproducing them to determine whether they contain substances vital to plant growth. Such nutritional substances include compounds of nitrogen, potassium and phosphorous. Fertilisers can be used to supplement a deficiency. You may investigate the movement of nutrients through the soil and the amount of nutrient the roots absorb. A closely related study is the investigation of root types and their relation to the soil.
- Investigating field crop problems or developing new and improved growing methods that will lead to higher yields or better quality crops.

Education Requirements

National Senior Certificate (NSC)

For a career in agronomy students are advised to select English, Mathematics, and Physical Science and to add to this a selection from the designated subjects. These are subjects that are particularly suitable for tertiary study.

Bachelor Degree

A four year degree programme, **Bachelor of Science in Agriculture – BSc (Agric)** (4 years) that focuses on developing knowledge and skills for entry into careers in agriculture.

Offered at:

- [North-West University \(Faculty of Agriculture, Science & Technology - Mafikeng Campus\)](#)¹
- [University of Limpopo](#)² (Faculty of Science and Agriculture)
- [University of Pretoria](#)³ (Faculty of Natural and Agricultural Sciences)
- [University of Venda](#)⁴ (School of Agriculture)

Specializations:

[University of Pretoria](#)⁵ offers a BSc (Agric) with specializations in:

- Plant Production
- Soil Science
- Pasture Science
- Animal Science

Admission requirements

As admission requirements vary from one institution to another, find out what the specific requirements are by checking on the website and contacting the university if you have any queries.

Possible Employers

- [Department of Land Affairs](#)⁶
- [Department of Water Affairs and Forestry](#)⁷
- Manufacturers of fertilisers, weed killers and agricultural implements
- Seed and plant producers
- Teaching institutions such as universities and agricultural colleges
- Co-operatives

¹ <http://www.uniwest.ac.za/opencms/export/MAFIKENG/html/faculties/ast/dep.html>

² <http://www.ul.ac.za/index.php?Entity=Faculty%20of%20Science%20and%20Agriculture>

³ <http://web.up.ac.za/default.asp?ipkCategoryID=48>

⁴ <http://www.univen.ac.za/agriculture/index.html>

⁵ <http://web.up.ac.za/default.asp?ipkCategoryID=1233&sub=1&parentid=48&subid=1232&ipklookid=11>

⁶ <http://land.pwv.gov.za/>

⁷ <http://www.dwaf.gov.za/>

Find out more

Find out more about agronomy, bursaries and jobs:

- [The National Department of Agriculture](#)⁸ provides much useful information, e.g. information about bursaries offered by the Department (select Regulatory and other services and then Education and training), statistical information on agriculture and economic reviews, and links to other sites like the Agricultural Research Council (ARC)
- Plant Protection News, [Newsletter of the Plant Protection Research Institute](#)⁹
- [Interesting articles about science](#)¹⁰ with periodic articles especially relevant to Africa , e.g. *African fruits that could help alleviate hunger and bolster rural development* , February 2008.
- [Consultative Group on International Agricultural Research](#)¹¹, a partner of many countries in Africa for over thirty years.

⁸ <http://www.nda.agric.za/>

⁹ http://www.arc.agric.za/uploads/images/0_ppnews_no_73.pdf

¹⁰ <http://www.scienceinafrica.co.za/>

¹¹ <http://www.cgiar.org/>

Are you suited to this career?

This quick quiz can help you to identify whether you are suited for this occupation. The questions are based on interests, characteristics and values typical of people who work as engineers. Bear in mind that in agronomy there is scope for a number of different types of people.

Quiz	Yes	No
Are you good at Science and Biology?		
Do you enjoy analysing problems, and do you have an analytical mind?		
Are you able to persevere in searching for solutions?		
Are you observant, taking note of tiny details?		
Do you enjoy nature and outdoor work?		
Are you creative and do you try different approaches when faced with a problem?		
Are you interested in environmental issues?		
Do you work well with other people?		
Would you like to learn more about the contributions made by biotechnology in agriculture?		
Do you communicate well with other people?		

If you have mainly yes answers it may be an indication that this is an occupation to consider.