

## Interns Appointed

Manstrat and the Department of Agriculture have been in close partnership in terms of the Agriculture Industry Development Programme (AIDP) for more than five years. Despite the unfortunate discontinuation of the AIDP initiative at the end of 2009, the internship partnership between Manstrat and DAFF has grown in strength.

Given Manstrat's excellent performances regarding the programme in the past (e.g. obtaining a 100% placement rate in 2009 versus the national norm of 30% placement), Manstrat was selected as DAFF's only external hosting institution where the department's own interns are receiving mentoring guidance and support.

For the 2010/2011 period a total of 7 interns (from various fields of study) have been assigned to Manstrat where they will be deployed on various aspects of implementing Extension Suite Online.

Article: Mr Jantus van der Linden

### QUESTION OF THE MONTH

Do GMO's have a place in organic agriculture



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## Extension Suite Online Student Version

*During a workshop on curriculum development for Extensionists in South Africa, it was said that there are approximately 1700 provincial Extensionists within the Extension Directorates of the Department of Agriculture to be re-trained in extension with an additional 5000 new Extensionists to be enrolled for a degree in agricultural extension within the next few years.*

The importance of the above is that the user group of Extension Suite Online is going to be expanded to more than 6000 basic users over the next few years and that it is now, more than ever, our responsibility to ensure that these Extensionists will be introduced properly to ESO both as an extension tool and also as a broader online framework in which they can do their work. The need for access to information, guiding students through decision processes, creating a climate of responsible use of information as well as allowing Extensionists to collect information as they go along their day-to-day duties cannot be denied and to this end, Manstrat has now released the first version of its ESO Student Edition.

It should be noted that the Student Version is not merely a crippled version of ESO, but rather that it serves to create an integrated learning and support platform for existing and future Extensionists.

Although ESO serves as a depository for the relevant and appropriate agricultural production and economic information, it also provides many expansion opportunities to allow universities to:

- Demonstrate options between different and similar technologies, to allow problem solvers to take users beyond simple solutions and to provide appropriate tailored solutions to problems. The system also creates opportunities for students to learn how to collect information, both on a formal and informal basis.
- Allow integration of ESO with other and existing learning systems, increasing interactivity and enhancing the learning experience.
- Also, to take a responsible approach to the interpretation and presentation of information to users and their clients.

We are currently engaged in a process through which the specific needs and requirements of various Universities are being incorporated into the student version.

Article: Dr Roelof de Villiers

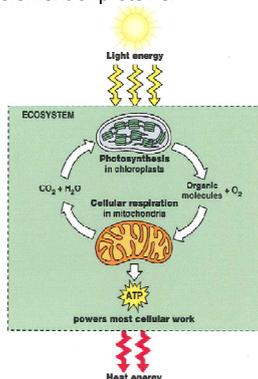
# Interpreting Crop Information in ESO

In Extension Suite Online (ESO) there are numerous references to **values for optimum plant growth**, and the **aim of crop production**. These refer to temperatures, amounts of fertilizers, irrigation needs and other production details. All these **factors need to be interpreted with care**. The reasons for this are explained below in some detail but, in general, **the numerous interacting factors make it impossible to consider one aspect of growth in isolation**.

Growth depends on **photosynthesis** which harnesses energy from **sunlight** to produce carbohydrates, simply called sugars. Besides the sunlight, **carbon dioxide** and **water** is needed.

Plant growth continues day and night because of another process, **respiration**. The sugars from photosynthesis are oxidized and the energy stored in **adenosine triphosphate (ATP)**. This is used to drive processes such as biosynthesis and transportation of molecules in the plant (**potassium** being used).

The term **biosynthesis** refers to building of the plant structure using **calcium**. **Proteins** are synthesized during growth, **nitrogen** being a key element of proteins.



Photosynthesis and respiration

Thus besides the CO<sub>2</sub>, oxygen and water, **other compounds** are also needed; **phosphate** in ATP, **nitrogen** in proteins and **potassium** for cell functions. **Magnesium** is a component of chlorophyll and **calcium** of cell walls. **Sulphur** is used in respiration and micro-nutrients play many roles.

On a **practical level** the question is: "**how much of these compounds do crops need for best growth in the field?**"

The answer is, "there is **no one specific amount** for a crop, **applicable to all situations**".

This is because all the interacting factors, as well as variations in **temperature, genetic make-up and soil characteristics**, make it impossible to be **specific and correct, in all situations, all the time**.

Plant growth is also driven by **temperature**. Rice growth, reaches a peak at about 26°C. Higher temperatures disrupt growth; it slows but does not suddenly stop. The maximum temperature depends on many factors - **for example**,

**higher levels of CO<sub>2</sub> enable growth at higher temperatures**.

Despite this, some sort of **guide** is needed for the use by farmers and extensionists. It is necessary for them to **understand how crops grow**, and have some indication of suitable temperatures, nutrition levels and irrigation needs.

This is done by providing a **range of nutrient levels**, a range of **temperatures and irrigation needs in ESO**. These are **guidelines and invaluable for initial decision-making**. This is **the manner in which ESO crop information must be used and interpreted**.

**In the field, on the farm**, specific conditions must be analyzed in detail and **appropriate practices used**. This is why regular **soil sampling, choice of varieties and monitoring of irrigation**, amongst other disciplines, are **critical for best results**.

Article: Dr John Lapham

## Advanced training courses to enhance the application of ESO

A need was expressed by some of the Provincial Departments of Agriculture for training programmes that would assist Extension Officers in the application of ESO as a critical source of information and planning guide towards undertaking Farm Feasibility Studies and the resultant Development of Farm Business Plans.

Manstrat has subsequently developed two training programmes titled the "Application of ESO to help Identify and Select Viable and Feasible Farming Enterprises and Production Options" and the "Application of ESO to Facilitate the Development of an Agri Business Plan", respectively. These two-day training programmes enhance the optimal utilisation and application of ESO towards performing these import functions and services demanded from Extensionists. The courses are offered either at the Manstrat training facilities in Pretoria and/or on a district basis at a venue organised by the Provincial Department of Agriculture. For more information please contact Jantus van der Linden at 012 460 2499.

Article: Mr Jantus van der Linden

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## TECHNOLOGY TIPS by Francois van der Merwe

### Popup Windows

The vast amount of information contained in Extension Suite Online forced us to find a way of displaying this information to ensure that a user would always be certain as to where in ESO he/she was, and exactly what information section he/she was viewing. To this end, pop-up windows play an important role. In Extension Suite Online strategic links were placed to certain sections of information such as Animal and Plant diseases which, once clicked, will bring forth a pop up window displaying the content.



Please note that no more than one pop-up window will be opened from Extension Suite Online. When a pop-up window is minimized by the user, and another pop-up link is clicked, the information for the last link clicked will be displayed in the minimized window. A bit tedious, but it does prevent the user from getting lost in the system.