## I-GROW – INTEGRATED CROP MANAGEMENT SOFTWARE (ICM) ACCORDING TO THE AGRO 2 STANDARD

## Author : Kaltsis Ioannis<sup>1</sup>

<sup>1</sup>MSc Agriculturalist, Planning Quality Management, PROTYPON Co – QUALITY AND DEVELOPMENT CONSULTANTS, email: kaltsis@protypon.eu

The i-grow software is a handy on-line tool to record inputs of an integrated crop management system (in compliance with requirements of AGRO 2 standard), since it enables users (producers, agriculturists or groups of producers) to document in a digital form all the actions that take place at the plot, in connection with the geographical view of the plot.

## I-grow function description

The main concept of this particular on-line software is the development of integrated solutions that combine use of innovative technologies in the area of wireless terrestrial and satellite technology with specialized software.

This particular software is an innovative idea and application which has a decisive contribution to the swift representation and recording of all the procedures and information relating to the products certification and, at the same time, offering important information and effective services to the producers, agriculturalists, producers groups and generally to those involved in the Certification System.

Specifically, the on-line application of the software enables the Producers Group, the producer, the agriculturalist manager and therefore the company to have a full digital recording of all inputs and actions, according to the requirements of the AGRO 2 standard, taking place in every registered plot. At the same time, this allows processing of all the data so that useful conclusions are reached regarding the cultivation practices used.

On the other hand, the system additionally provides GIS capabilities, such as locating data of producers plots on a digital map, enlargement-diminution, distance measuring, presenting data relating to each plot as well as a flexible system of producing and printing reports.

Copyright ©by the paper's authors. Copying permitted only for private and academic purposes.

In: M. Salampasis, A. Matopoulos (eds.): Proceedings of the International Conference on Information and Communication Technologies

for Sustainable Agri-production and Environment (HAICTA 2011), Skiathos, 8-11 September, 2011.

Consequently, this is an important marketing and promotion tool, as it supports the access through network of remote users (e.g. customers of the Company abroad) to a central management information server - with controlled however access.

Some of the software functions enable the following actions per registered plot and producer:

- Full recording of profile and current state of producer (plots, crops, equipment, facilities, past certifications, internal audits, etc.).
- Full recording of soil treatment and cultivation practices (type of work, equipment used, etc.) incurred on each plot.
- Fertilization recording (fertilizer type, amount, method of application, etc.) for each plot including the automatic calculation of units of N, P and K up to the given time on each plot.
- Sprayings recording (active ingredient, cause of application, PHI, dose, etc.).
- Harvest recording (allowable harvest date, harvest date, quantity, etc.).
- Products harvested quality and quantity recording.

In addition on-line users can access information though databases with information on approved cultivation formulas, agricultural warnings, list of fertilization products, etc.

## Aggregate reports

The i-grow application supports a total of useful aggregate reports, that can be converted into word, excel, pdf, etc files. This allows the user to make a list of reports and fields that define the parameters of any type of report.

The aggregate reports include the following fields:

- Per plot
- Per producer
- Per designated time

Each type of report may require different parameters. Types of these parameters are:

- The node in the hierarchy of the users that the report will be defined
- Beginning and expiry date
- Other parameters that are specific to a report, e.g. type of fertilizer on a report that concerns in Type of Fertilizer

I-grow application supports the following types of reports:

- Active Producers of System presentation
- Active Producers of Plots presentation

- Plot fertilizations with centralized units N, P, K
- Total elements of fertilizations
- Fertilization type
- Spraying by type of formulation, drastic substance and total quantity
- Output of plots and periods of harvest
- Presentation of plots with the maximum output
- Quality characteristics of products harvested per plot and producer
- Dates of internal audits and time of certifications