

SP1000 Robotic analyzer

Soil pH analysis automated for high sample volumes



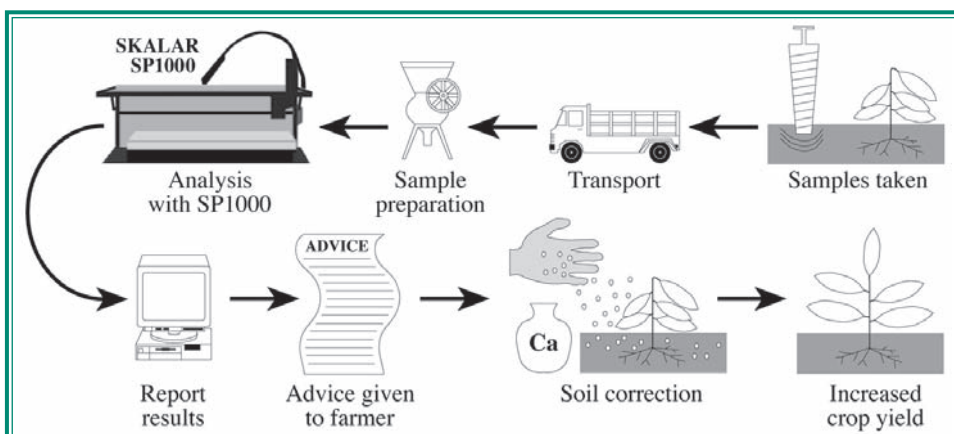
In fertilization, the soil-pH determination is very important as it influences the availability of minerals for the plant. Furthermore each plant has a certain pH in which it is optimally grown and produced. For this reason the pH of every soil sample is analyzed along with parameters such as NO_3 , NH_4 , P, K, organic materials and clay. The result of the pH measurement is given in a lime advice, from which the grower obtains the optimal pH for his plants or cropping-plan. Also the pH for crops in clay is taken into account to determine the K value of the ground as a basis for K fertilization.

Specialized laboratories analyze the soil and provide the farmers with the required information. With this information the farmer can select the best method to improve the soil quality resulting in increased crop quantities and at the same time lower their costs.



The success of this concept then results in increasing numbers of samples arriving at the laboratories specialized in this area. Frequently as many as 1000 soil samples need to be analyzed on a daily basis, and for this purpose Skalar has developed a pH-soil application for high sample through-put. The basis of this analyzer is the Skalar SP1000 Robotic

Analyzer, using four pH-meters simultaneously, rather than standard pH-in-soil applications which normally only apply one electrode. This results in a sample through-put of up to 280 samples per hour. The user adjustable system variables, such as the pre-stirring time and the stabilization criteria, allow the user to modify the application to necessary requirements.



The soil pH analysis is completely automated using the Skalar SP1000, the only action the user has to carry out is putting the sample into a sample beaker, after which the system automatically adds the required extractant, stirs, waits for a predefined time and determines the pH automatically.

It is always possible to adapt the analysis procedure according to the users' own methodology.



For the pH in soil analysis the SP1000 follows the following measuring sequence displayed below



1 Measure or weigh samples and place them in the racks



2 Place racks on the analyzer



3 Fill in the work list and start the analyzer



4 The SP1000 adds extraction solution and stirs all the samples in sets of four



5 Between each operation the SP1000 rinses the probe



6 After a pre-defined settling period the samples are again stirred



7 After stirring the pH value of each sample is measured



8 The measured values of each sample is calculated and stored

For more information on the pH application or other Skalar products please contact your local Skalar agent or Skalar's headquarters in the Netherlands.

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