

March 30<sup>th</sup> 2022  
Castricum, The Netherlands  
Newsletter 2022-Q1

Dear readers,

With this newsletter we like to inform you about our day to day business, current projects, performance characteristics of our products and new product development. Enjoy reading!



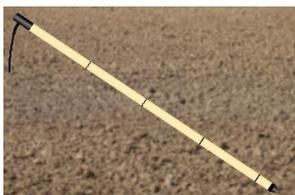
## Our one year anniversary



In November 2021, it was **one year ago** that our **website** went **online**. This was a nice occasion to look back at what we have achieved during our first year at SWAP instruments. The **interest** in our products was **beyond expectation**. Especially our custom-made probes are in high demand (55 % of all our probes sales). These dedicated probes are used in many high quality scientific studies. To meet the demand, we had to **scale up production**. We managed to do this successfully, despite the Corona pandemic and shortages on the parts market (e.g., chips). Since it is foreseen that shortages will remain for a longer period of time, we advise our customers to order our products in time. This especially accounts for our custom-made probes (not on stock).

Feel free to **contact us** at [info@swapinstruments.com](mailto:info@swapinstruments.com) for current prices and delivery times of our products.

## 4 new standard soil Redox probes



### ORP-40-4-B

- ✓ 4x Redox electrode
- ✓ At 10-20-30-40 cm
- ✓ Analog output
- ✓ Open wire ends



### ORP-80-4-B

- ✓ 4x Redox electrode
- ✓ At 20-40-60-80 cm
- ✓ Analog output
- ✓ Open wire ends



### ORP-40-4-A

- ✓ 4x Redox electrode
- ✓ At 10-20-30-40 cm
- ✓ Analog output
- ✓ Integrated T sensor & reference electrode



### ORP-80-4-A

- ✓ 4x Redox electrode
- ✓ At 10-20-30-40 cm
- ✓ Analog output
- ✓ Integrated T sensor & reference electrode

At the request of our customers, we have added **4 new standard soil Redox probes** to our product range. These are the:

- ORP-40-4-B
- ORP-80-4-B
- ORP-40-4-A
- ORP 80-4-A

The ORP-40-4-B and ORP-80-4-B are our basic analog models with a length of 40 and 80 cm, and with 4 Redox electrodes each. These basic probes have no integrated temperature sensor and reference electrode.

The ORP-40-4-A and ORP-80-4-A have the same length and number of Redox electrodes (4x) as the basic models. These are also analog probes. In addition to our basic models, they have an **integrated temperature sensor** and **integrated reference electrode**.

With these probes, we now offer **10 standard soil Redox probes**: 7 analog probes and 3 SDI-12 versions. Contact us at [info@swapinstruments.com](mailto:info@swapinstruments.com) for additional information.

## Soil Redox probe applications: crop optimization



**Oxidation-reduction** and acid-base reactions are **essential** for maintenance of all **living organisms** (Husson, 2013)<sup>#1</sup>. According to Husson (2013), redox potential (Eh) has received little attention in agronomy, unlike pH, which is regarded as a master variable.

At SWAP instruments we have noticed that more and more agronomists acknowledge **soil Redox potential** as a **major driver** of **soil/plant/ micro-organism systems**. Agronomists use our soil Redox probes to improve cropping system design and management, in both conventional and sustainable agriculture.



One of our customers is Tomas Aguayo from **Great Crops**. He uses our soil Redox probes for crop optimisation in **strawberry fields, avocado orchards**, and **wine and lemon tree plantations** in California. By measuring and monitoring the Redox potentials of soils that are limed, fertilized and irrigated with various products, he pursues to achieve favourable soils conditions for the best **crop yields**. By connecting our profile probes – measuring Redox potentials at various soils depths - to dataloggers, the soil Redox potential is monitored continuously and adjusted **with soil amendmends** when necessary.

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If you are interested in our products or would like to receive some additional information, please contact us at [info@swapinstruments.com](mailto:info@swapinstruments.com) or visit our website [www.swapinstruments.com](http://www.swapinstruments.com).

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<sup>#1</sup>) Husson, O. (2013). Redox potential (Eh) and pH as drivers of soil/plant/microorganism systems. A transdisciplinary overview pointing to integrative opportunities for agronomy. Plant Soil 362: 389-417