

March 30th 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 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 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)^{#1}. 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.

If you are interested in our products or would like to receive some additional information, please contact us at info@swapinstruments.com or visit our website www.swapinstruments.com.

^{#1} 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