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The Breath of Soil – Visualizing Soil Fertility and Linking Art and Science

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Abstract

The Breath of Soil (Memory Nexus) is an interdisciplinary art-science project developed as part of the SPIN-FERT project. It combines soil science with artistic practice to reveal the often invisible connections between soil, biology, and human experience. The project builds a bridge between art and science while encouraging reflection on the interdependence of humans, memory, matter, and living soil. The project uses soil both as a material for scientific purposes and as a symbolic medium. It explores how the scent of soil evokes emotions, memories, and personal reflections. These human memories can be assigned to one of the four RNA nucleotide bases (adenine, uracil, cytosine, guanine) and form unique RNA sequences that fold into diverse structures. This reflects the way RNA stores and transmits biological information. Each new collection of memories is materialized as a biodegradable, 3D-printed RNA model, which is eventually buried back in the soil, allowing new memories to be formed. Human memory is thus connected to ecological cycles.

Keywords: SPIN-FERT, Molecules, Living Memories

The Breath of Soil (Memory Nexus) is an interdisciplinary artistic-scientific project developed as part of the European Union's SPIN-FERT project (https://spinfert.eu/). It embodies the spirit of SPIN-FERT, which aims to combine innovative research on soil management and use of peat-free growing substrates with artistic perspectives. The science-art approach is expected to raise awareness about the invisible connections that link living systems of the soil with humans on both a molecular and emotional level. The Memory Nexus explores the complex relationship between human memory, biological processes and the environment, using soil as both a scientific material and a symbolic medium. Smelling the soil or substrates evokes emotions, memories and associations in every person, which can be grouped into categories such as nature and sensory experience, relationships and human connections, memory and personal reflection, or existential and philosophical considerations.

Figure 1: Memory Molecule Number5 from ECSITE 2025 Conference of the European Network of Science Centres and Museums June 3-5 in Warsaw. (5'-AAAUUUGCCGAUUCCGAAUUUCCCGGAUUU -3') (Art Science Node, 2025)

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Within the Nexus, these personal narratives are then transformed into the four nucleotide bases (adenine, uracil, cytosine, and guanine) that form RNA molecules. Each RNA molecule folds into a unique shape, a structure determined by the specific sequence and pairing of these bases (e.g. Figure 1). RNA represents the molecular structures that play a fundamental role in the transmission of genetic information and evolutionary processes. The artistic concept draws a parallel between the way RNA stores and transmits biological information and the way human memories shape individual and collective identity. Each collection of memories is materialized as a unique 3D-printed RNA model made from biodegradable materials (e.g. Figure 2), which is later reburied in the ground.

Figure 2: 3D-printed RNA model of Memory Molecule Number 5 from ECSITE 2025. (Art Science Node, 2025)

This process metaphorically connects human emotional and cognitive experiences with the continuous biological and ecological cycles that sustain life in soil, highly related to the organic farming principles of the soil being the basis of agricultural production. In this way, ‘The Breath of Soil’ not only bridges the gap between art and science but also encourages reflection on the interdependence between humans and their environment, such as how memory, matter and life itself are constantly regenerated and shared through natural processes. For the Ecofruit conference, partners of the SPIN-FERT project provide a peat-free substrate to create a new Memory Molecule to visualize and connect art and science.

References

Art Science Node (2025). Memory Nexus: Molecule 05. Memory Nexus Archive. SPIN-FERT Art and Science Archive. https://artscience-node.com/memory-nexus-archive/. Last accessed: 08.01.2026