

When Pesticides Become “Forever Chemicals”: Regulatory Gaps at the Intersection of EU Pesticide and Chemicals Law

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The European Union regulates pesticides and industrial chemicals through separate legal frameworks, with pesticides falling under Regulation (EC) No 1107/2009 and industrial chemicals being governed by REACH (Regulation (EC) No 1907/2006). Both frameworks claim to implement the precautionary principle and provide a high level of environmental and health protection; yet, they employ fundamentally different approaches to evaluating risk, approving substances, and defining what counts as “acceptable” harm. This separation creates a critical blind spot, where certain approved pesticides break down in the environment into per- and polyfluoroalkyl substances (PFAS)—the so-called “forever chemicals” that persist indefinitely and accumulate in ecosystems and human bodies.

The most prominent example is trifluoroacetic acid (TFA), a PFAS generated as a degradation product from numerous pesticides currently approved for use across the EU. While European authorities are slowly moving toward restrictions on PFAS under chemicals law, the pesticide approval system continues to authorise substances that generate these same persistent compounds. The result is a paradox: chemicals deemed too dangerous for industrial use continue entering the environment through the agricultural pathway, subject to equally rigorous precautionary scrutiny but evaluated under standards that inadequately account for PFAS environmental persistence.

This paper examines the dimensions of this regulatory fragmentation. First, it explores how pesticide risk assessments and chemical restrictions construct different forms of regulatory knowledge, and the reason these approaches produce systematically different outcomes for substances with similar hazard profiles. Pesticide evaluation focuses on demonstrating adverse effects within defined study periods, while chemical restrictions seem to increasingly permit precautionary action based on intrinsic properties like persistence alone. Second, it analyses how the European Food Safety Authority (responsible for pesticide evaluation) and the European Chemicals Agency (implementing REACH) coordinate when substances fall across both jurisdictions. Third, it examines whether PFAS restrictions could actually block pesticide approvals on grounds of the precautionary principle and respect of the EU environmental *acquis*.

The paper ultimately questions whether regulatory fragmentation represents a technical coordination problem or reflects deeper tensions between agricultural production objectives and environmental protection imperatives that EU Law has yet to resolve. As both PFAS restrictions and pesticide approval renewals proceed through their respective processes, the

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intersection between these regulatory tracks will test whether the EU's precautionary commitments can withstand the institutional and political pressures favouring regulatory silos.