

Proposal master thesis

Topic:

“Evaluating environmental and farm-level economic outcomes of pesticide regulations: a comparative analysis”

Background:

Pesticide regulations play an important role in balancing agricultural productivity with environmental and human health concerns. However, the stringency of these regulations varies widely across countries, resulting in differences in pesticide approvals and bans. Understanding how these regulatory differences affect environmental and economic outcomes at the farm level is essential for informing policy decisions and promoting sustainable agriculture.

The objective of this study is to assess the causal relationship between the stringency of pesticide regulations – in particular, the withdrawal of pesticides from the market – and to document environmental and economic outcomes at the farm level.

Proposed tasks and methods:

- Compile information and conduct a comparative analysis of existing pesticide regulatory frameworks around the world, by pesticide type and at the country level, based on indicators such as toxicity, environmental persistence, and human health risks, as well as aggregated economic outcomes (e.g. yields, profit)
- Conduct a systematic review or a meta-analysis of the impact of pesticide authorizations and/or withdrawals on both the environment (local effect) and economic outcomes (at the farm level)

Literature:

Dewar, A. M. and Qi, A. (2021). The Virus Yellows Epidemic in Sugar Beet in the UK in 2020 and the Adverse Effect of the EU Ban on Neonicotinoids on Sugar Beet Production. *Outlooks on Pest Management*, 32(2):53–59.

Lundin, O. (2021). Consequences of the neonicotinoid seed treatment ban on oilseed rape production – what can be learnt from the Swedish experience? *Pest Management Science*, 77(9):3815–3819.

PAN International. (2022). *Consolidated List of Banned Pesticides*. Pesticide Action Network.

Contact:

The master thesis will be supervised by the chair group of “Production Economics”.

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