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The Green Deal is likely to lead to lower agricultural yields

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By 2030, the European Commission aims to halve the use of pesticides in agriculture. The quantity of fertilizers used must also be reduced according to European plans. The measures are intended to combat climate change and the loss of biodiversity. A likely consequence, however, is that crop yields will decrease. Lower production will lead to higher prices, a contraction of European exports and greater imports of agricultural products from outside Europe. Scientists from Wageningen University in the Netherlands have reached these conclusions in a study commissioned by *CropLife Europe* and *CropLife International* with the participation of other stakeholders in the food supply chain.

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In the study, the researchers focused on the impact of the two strategies „Farm to Fork“ (Farm2Fork – F2F) and „Biodiversity“ (BD), which are part of the Green Deal. They consider both annual crops (wheat, rapeseed, maize, sugar beet, hops and tomatoes) and perennial crops (apples, olives, grapes and citrus fruits). At the Dutch university they have developed four possible scenarios based on the two strategies.

The first scenario assumes a 50% reduction in pesticides, including those from the group most harmful to the environment.

Scenario 2 looks at halving nutrient losses and a 20% reduction in fertilizer use, while *Scenario 3* uses at least 25% of agricultural land for organic production. Finally, *Scenario 4* combines the objectives of the first two scenarios, with the idea here being that at least 10% of land remains uncultivated by agricultural crops. The last scenario provides the best insight into the combined impact of the proposed measures in the two strategies.

Participants in the study

Twenty-five farms from the European Union took part in the study.

In each individual farm, the scientists describe the changes that occur when applying pesticides and fertilizers in accordance with the new requirements of the European agricultural policy. Subsequently, the impact on crop yields under the new conditions was calculated. The results were extrapolated to the level of all EU Member States and were entered into economic models to assess the market impacts.

From 10 to 20% less production

According to Johan Bremer, a researcher at *Wageningen University & Research*, the study shows that the implementation of the „Farm to Fork“ (Farm2Fork – F2F) and „Biodiversity“ (BD) strategies has a negative impact on crop yields and agricultural production: „Scenario 4 analyses the cumulative impact of several objectives of „Farm to Fork“, namely the reduction in pesticide use. This scenario shows an average decline in production of between 10 and 20%. There is a huge difference between different crops – for some crops the consequences of implementing the measures in the „Farm to Fork“ strategy will have a more visible effect (around a 30% drop in yields) than for others, where such drastic figures are not observed.

Moreover, reducing the use of pesticides and fertilizers may lead to quality problems. For example, if fewer pesticides are used, grain may become susceptible to fungal toxins, making it unsuitable as food or feed. Reducing the use of nutrients and pesticides may lead to lower yields in fruit crops (apples) and a reduced fruit size. Lower-quality fruit is less valued by consumers. Therefore, if there is no change on the demand side, this

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means that we should expect more shortages of the specific crop and, of course, an increase in prices. This also has negative consequences for the European trade balance, as exports decrease and imports increase.

Additional agricultural land outside the EU

The study also clearly shows that lower production in the EU will lead to the need for additional agricultural land outside the EU. Johan Bremer: „If demand remains unchanged, Europe will have to look for new alternatives such as importing more agricultural products. At the same time, if Europe exports less, countries outside Europe will have to produce more themselves. We have calculated how many hectares of agricultural land outside the EU are needed to offset this combination of different economic effects. In every scenario, this indirect change in land use is significant."

The benefits for climate and biodiversity are outside the scope of the study

The study focuses solely on the economic consequences of the Green Deal strategies for the agricultural sectors. Johan Bremer: „This is the first time we have conducted a detailed study of what happens to agricultural production when companies align their pesticide and fertilizer strategies with the objectives of the European Commission. It is important to realize that the European strategy aims to achieve benefits in terms of climate and biodiversity. These benefits are not part of the scope of this study."