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France**Background:**

Oilseed brassicas (rapeseed, canola and mustard) produce the second highest tonnage of oilseeds in the world, after soybean, and are the third largest source of vegetable oil.

**Objective:**

This research offers a picture of the past evolutions and present situation of the rapeseed sector and reviews its strength and weaknesses and development perspectives.

**Methods:**

The research is based on the analysis of a long-term statistical series on rapeseed/canola products (seeds, oil, meals) production, uses and trade (Oil World ISTA and FAO data) and includes qualitative information on innovation trends and evolutions of needs and challenges in the next decades related to food and carbon transitions.

**Results:**

At global scale, rapeseed crop evolution is remarkable, from 12.4 Million tons (MT) on 12 Million hectares (Mha) in 1982 to 65 MT on 36 Mha in 2022, the production increase being due almost equally to progress in yield (53%) and acreage (47%). This evolution, consistent with the evolution of the whole vegetable oils complex, reflects a dynamic market and sustained technical progress. This evolution is contrasted between countries, in relation to the use of crop types (winter or spring, rapeseed/canola/mustard) to fit contrasted, variable, and evolving pedoclimatic conditions, to shifts in agricultural practices and inputs uses (regulations on pesticides), and to innovation effective at farm scale. In western Europe - winter rapeseed mainly - the countries with yields higher than 3t/ha experienced a stagnation or decrease for a decade, when compared to yield trends in eastern Europe with winter rapeseed (Romania, Ukraine) and in North America with spring canola, starting from lower levels. Increases in yield in recent years were also observed in Russia (spring canola mainly) and India (mustard rapeseed). Australian production levels are very dependent on seasonal climatic variation.

Rapeseed at world scale is used mainly as edible oil, and increasingly for biofuels, especially in EU, where biodiesel represents around 80% of the oil equivalent of the seed production, and more recently in North America. The use of biodiesel, already capped in EU, will cease with diesel engines and this market use will depend on policies on bio-jet fuel and competitions with food requirements.

**Conclusions:**

In a context of tough competition in the vegetable oils and meals markets, respectively driven by palm oil and soybean meal, the rapeseed sector succeeded in maintaining its competitiveness through continuous innovation in genetics, cropping practices and research of added value with a limited market segmentation. Nevertheless, its market share in vegetable oils consumption seems to have stagnated or slightly decreased. The protein fraction is already a major incentive for the production for feed, notably in Europe. A higher valorisation of rapeseed protein for food industries is also a promising sector relatively to the increasing global need of food proteins and in the context of food transitions to limit carbon emissions. The competitiveness of rapeseed-canola depends on the best valorisation of both oil and protein fractions and increasingly in the capacity of growers to face crop protection issues, increase its nitrogen efficiency, and reduce its greenhouse gas emissions.