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ORAL PRESENTATION THEME E

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Canadian canola: The opportunities and challenges in international markets

Today, over 50% of the vegetable oils consumed by Canadians are produced from Canadian-grown and processed canola. However, this represents only 10% of the total crop grown each year, so the rest has to be exported. Canada produces a little more than 30% of the world's annual supply of canola quality rapeseed but is responsible for roughly 70% of its global trade. Predictable access to international markets is critical to the success of Canadian canola. At the same time, consumer understanding and acceptance of canola oil as a versatile, healthy oil and the acceptance of canola meal by the animal feed industry as a quality source of protein is paramount to further success of Canadian canola.

In the five most recent years starting 2010, Canada produced an average of 14.9 million tonnes of canola seed per year. In the same five year period Canada annually exported an average of 8.1 million tonnes of canola seed, 2.4 million tonnes of canola oil and 3.2 million tonnes of canola meal to markets around the globe.

As standards of living in many of the world's developing nations are increasing, there is the opportunity for growth in the canola industry. Everybody needs some fat – to provide energy, essential fatty acids, and help absorb fat-soluble vitamins. The National Academy of Science Dietary Reference Intakes, developed by Canadian and American nutrition experts, recommends that fat provide between 20% and 35% of total energy intake. But some fats are healthier than others.

Canola is the healthy solution. Canola oil is low in saturated fat and free of trans fat, high in poly and monounsaturated fat, contains no cholesterol and is a good source of vitamins E and K. Plus canola oil is very versatile and suitable for a variety of different cooking applications so it's easy to use every day. It has a neutral flavour that doesn't overpower other flavours. It remains liquid and free-flowing at refrigerator temperatures and its high smoke point makes it ideal for cooking methods that require high heat.

The opportunities for canola are great and will be enhanced by reducing trade restrictions, enhancing feed industry acceptance and increasing consumer awareness.

Challenges and opportunities for canola production in Brazil and Paraguay

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Background: Canola is a typical oilseed of latitudes between 35° and 55°N in temperate environments. Available areas for canola production in Brazil and Paraguay are situated at latitudes below 33°S, and the aim is to grow this crop during the fall-winter months, in two-crops-a-year grain production systems. Research and production in Brazil started (1974) in the subtropical Southern states, with rainfall above 1,500 mm distributed during all months of the year. In this region, and in Paraguay, canola is subject to high moisture and frosts during the reproductive stages, a period of shorter days than those of most production and cultivar development regions of the world. Frost incidence (around 30 days a year) and severity (up to -10°C) increase from the lower to the higher altitudes of the production areas (250 to 1,100 m).

Objective: Provide an overview of the challenges and potential for canola production in Brazil and Paraguay.

Results: Production is based only on spring type hybrids of *Brassica napus* L. var. *oleifera*, with resistance to specific blackleg pathogenicity group incited by the fungi *Leptosphaeria maculans* (Desmaz.) Ces. & De Not.. GMO cultivars are not used due to the widespread adoption of Glyphosate-resistant soybean in these rotation systems. Currently, the hybrids developed in Australia are the best available alternative. Long term screening in the target growing regions is required to identify possible sources of germplasm with tolerance to severe frosts, and certain diseases associated with high humidity environments, such as those incited by *Xanthomonas* spp. bacteria, *Sclerotinia* spp., and *Alternaria* spp. fungi. Long term screening in the target growing regions is required to identify more suitable cultivars to the specific requirements of each of the diverse cropping regions. Research and some commercial production has shown that by employing low day-length sensitivity hybrids, canola production is also viable in tropical savannas with altitude above 600 m. Growing area and production peaked at 59,100 ha in Brazil (2011), and at 83,000 ha in Paraguay (2012), with average grain yields around 1,600 kg ha⁻¹. Many farmers achieve grain yields above 2,200 kg ha⁻¹ up to a top yield of 3,200 kg ha⁻¹, and the cropped area is likely to increase. Brazil has 37 million hectares of land under grain production, where soybean and maize are produced in the summer. Canola can become a cropping alternative on about 17 million hectares of under-utilised land in tropical environments, and in subtropical regions where it is possible to grow two crops every year, optimizing investment in land, machinery and other available resources.

Conclusions: Development of canola cultivars and management technologies suitable for subtropical and tropical grain production environments can be decisive for a major expansion of this oilseed's cropping area to non-traditional regions of the world. Increases in canola production could expand human consumption of its oil in domestic markets and meet part of the requests of companies interested in sourcing large amounts of canola oil for biodiesel production in Europe.