

FIELDS OF GOLD

Canola production has grown in leaps and bounds during the past decade and is set to more than double in the next. With biofuel blending regulations coming into effect in 2015 and positive results achieved in crop rotation, the canola industry is poised for a boom. **Lindi van Rooyen** reports.

Canola production in South Africa had a tentative start, with a mere 50ha planted to the crop in 1992.

Today, the area cultivated is 64 000ha, producing 108 000t annually at an average of 1,71t/ha. And it is estimated that by 2020, canola could be grown on between 125 000ha and 200 000ha in the Western Cape alone.

The food market currently uses the entire crop for oil and full fat in animal feed. This will change when biofuel regulations are implemented in 2015.

According to Franco le Roux, agriculturalist for SOILL (Southern Oil), the crop's rapid growth in the Western Cape can be attributed to a favourable price as well as the higher yields obtained in the last two seasons.

Ernst Janovsky, head of Absa AgriBusiness, anticipates that the price will remain stable over the next three years, at around

R5 000/t. He expects the area under canola to increase dramatically once farmers increase the yield to 3t/ha. However, to meet an expected canola demand of about 1,1 million tons as feedstock for biofuel by 2018, considerable buy-in is needed from the agricultural sector and government.

AN EXCELLENT ROTATION CROP, CANOLA CAN BE GROWN ANYWHERE IN SA

The PhytoEnergy Group, a specialist in renewable energy projects, has been appointed as a member of the South African Biofuel Implementation Committee steered by the Department of Energy to finalise the mandatory biofuel blending regulations.

Petrus Fouché, CEO of PhytoFarming, the agricultural arm of PhytoEnergy, says that canola has been vastly underestimated. But as

more farmers plant it, news of its benefits is spreading.

Among these is the fact that it can be grown anywhere in South Africa.

ADAPTABLE TO LOCAL CONDITIONS

"In summer rainfall areas, as a rainfed crop, it is ideally planted towards the end of March or early April with long growing season or winter varieties," explains Fouché.

"Since the moisture level in the top soil is often low at that time, it's advisable to plant earlier (between the first summer rains to mid-March). A farmer will then have more time to use it as a dual-purpose crop for cash (seed) and grazing. Its tap root enables it to withstand drought and it's frost-resistant down to -9°C."

He notes that canola is one of the best rotation crops and is well adapted to local conditions.

"Maize farmers with root-knot nematode and

• Local canola production will have to increase tenfold to meet biofuel demand.

• The Eastern Cape has the most agronomic potential to grow canola.

• Canola is an excellent rotation crop with maize and wheat.

FAST FACTS

fusarium problems, and wheat farmers with take-all, should see their yields increase by about 25% after including canola in a crop rotation."

THE POTENTIAL OF BIOFUEL

South Africa consumed 11,7 billion litres of petrol and nearly 11,3 billion litres of diesel in 2012. These figures will rise to about 15 billion litres each in 2016. This excludes jet fuel, paraffin, LPG, furnace oil and aviation gasoline, which added up to nearly 4,2 billion litres in 2012.

Should 5% of diesel be replaced with biodiesel,

BELOW: While many farmers in the Western Cape have included canola in their crop rotation systems, too few cultivars are being tested. COURTESY OF SOILL



Feedstock and area under cultivation needed to support PhytoEnergy biodiesel production from canola

Year	2014	2015	2016	2017	2018	2019
Tons canola needed	20 000	90 000	270 000	540 000	909 000	1 112 000
Area (ha) in rural Eastern Cape (40%)	4 000	18 000	54 000	108 000	181 800	222 400
Area (ha) commercial farmers (60%)	6 000	27 000	81 000	162 000	272 700	333 600
Area (ha) under cultivation: Total	10 000	45 000	135 000	270 000	454 500	556 000

563 million litres of biodiesel (an estimated 750 million litres in 2016) will be needed from oil crops such as canola and soya beans. Bio-ethanol inclusion of 2% amounts to a further 234 billion litres from grain such as sorghum, wheat and triticale.

Once PhytoEnergy's 400 000t biodiesel plant is in full production by 2018/2019, it will consume 1,1 million tons of canola

a year. This means that in 2013, 2014 and 2015, there is a need to cultivate 12 500ha, 40 000ha and 216 000ha of canola respectively above the Western Cape's current production.

According to Fouché, extending the crop to the northern provinces could add another 1,1 million hectares of canola.

PhytoEnergy intends starting with its first segment of 225 million litres of biodiesel, run by

TOP LEFT:

All canola seed is imported from Australia, and it is difficult to obtain enough quality seed for planting on time.

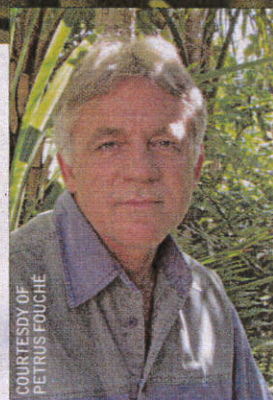
TOP RIGHT:

Some 60% of the processed canola crop will yield oil cake that can be utilised to reduce the importation of protein meal into the country.



FRANCO LE ROUX

subsidiary PhytoAmdla at Coega near Port Elizabeth, towards the end of 2016. The second segment will follow in 2017, with further expansion possible in due course. Fouché warns that if local farmers cannot meet this demand, feedstock will be imported and they will lose

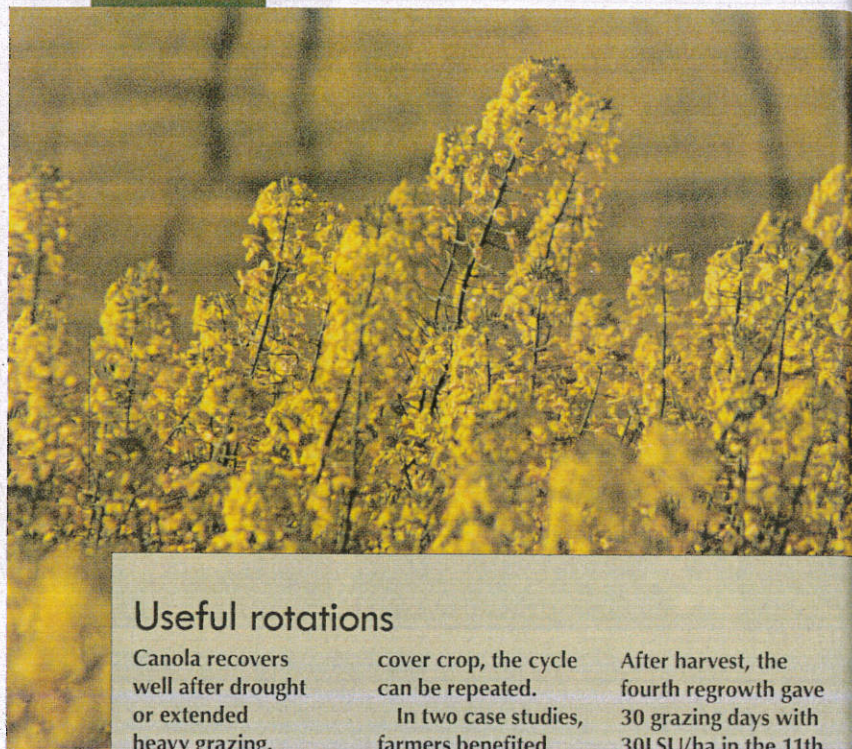


PETRUS FOUCHÉ

out on the opportunity. He notes that it should be possible to produce all of the feedstock in the Eastern Cape in rotation with maize and other cash crops, as more than one million hectares of good

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◀ agricultural land is currently unworked. "However, we expect 60% of the required canola feedstock to come from commercial farmers in the summer rainfall areas and only 40% from rural Eastern Cape due to infrastructure limitations in this province," he says.

SOUTH AFRICA NEEDS AN EXTRA 1,41M TONS CANOLA/YEAR FOR BIODIESEL

"If we assume the mean rainfed yield of soya beans (in summer) and canola (in winter) in summer rainfall areas to be similar at around 2,0t/ha, South Africa would need an additional 1,41 million tons canola (704 000ha) or 2,8 million tons of soya beans (1 408 000ha) annually to fulfil a 5% inclusion rate of the 2012 biodiesel demand."

CHALLENGES

Despite canola's potential, it poses difficulties. Fouché points to an unwillingness by farmers to change from current crops, and the negative, mostly untrue

stories about canola as a crop. The failure of government institutions to support developing farmers is also a challenge.

"If government were to support projects that will see 300 000ha of canola, maize and soya beans being planted in the Eastern Cape, it would create jobs and the balance of payment would become positive through fewer imports (of soya oil cake and chicken, for example) and more maize exports," he says.

Research lags behind demand, however. "Good work has been done on rotation, but not enough cultivars are being tested," explains Fouché. "No research is done on canola for summer rainfall areas, where winter varieties are grown under rainfed conditions. As all canola seed is currently imported from Australia, getting enough good quality seed for planting on time is a challenge."

FOOD OR FUEL

Fouché says it is a common misconception that a crop has to be planted either for food or biofuel. "In general, this is true when maize is used for bio-ethanol and

Useful rotations

Canola recovers well after drought or extended heavy grazing.

Petrus Fouché notes that after winter canola has been harvested, soya beans or maize can be planted directly into canola stubble using no-till methods.

In normal years, three crops can be produced in two years in summer rainfall areas: soya beans from October to March/April; canola from March/April to October/November; and maize from October/November to July. After a short fallow period or a

cover crop, the cycle can be repeated.

In two case studies, farmers benefited from including canola as a rotation crop also utilised for grazing.

Jan Scheepers, who farms in Bethlehem, planted canola with strip cultivation on 2,6ha low potential soil in early March 2012. With little winter moisture, he grazed the land three times at 56LSU/ha and received 60 grazing days.

With the third regrowth, the medium to long growing season cultivar produced 1,8t/ha grain in December.

After harvest, the fourth regrowth gave 30 grazing days with 30LSU/ha in the 11th month of growth.

Johannes Joubert from Riversdale used 32ha canola as a dual-purpose crop for sheep grazing and seed production. He grazed 37 ewes/ha on the land for 28 days. At a feed cost-saving of R6 to R7/ewe/day, the grazing value alone has so far been R6 216/ha to R7 252/ha.

After the animals were withdrawn, the canola grew out again and will be harvested by mid-November 2013.

TOP LEFT: A special characteristic of canola is its ability to recover after adverse conditions.

TOP RIGHT: The entire SA canola crop is currently utilised by the food market, either for oil production or as grazing. This will soon change with the implementation of biofuel regulations.

soya beans for biodiesel, because they can be grown at the same time as conventional food crops."

He says that organised agriculture thinks that enough can be produced for both food and fuel. "When canola is produced for biodiesel, as PhytoEnergy intends to do, it boosts food and biodiesel production. Canola can be grown in winter, followed by maize and wheat, with higher yields in both and thus an increase in total food

production. In addition, 60% of the processed canola will yield oil cake that can reduce protein meal imports," he says. Fouché adds that canola should be used as a double-purpose crop, giving farmers the option of grazing their livestock on the young canola and then letting it grow out to harvest the seed. This will contribute to food production.

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