

AN ECONOMIC EVALUATION OF SOYBEAN-BASED BIODIESEL PRODUCTION ON COMMERCIAL FARMS IN KWAZULU-NATAL, SOUTH AFRICA

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ABSTRACT

Global biofuel production has risen substantially in recent years, driven primarily by government support for biofuel industries. The stated motivations for these initiatives are numerous and have varied over time. Soybeans are the only field crop produced in sufficient quantities in the province of KwaZulu-Natal (KZN) that the South African industrial biofuel strategy identifies as a potential biodiesel feedstock. Results from a mixed integer linear programming model suggest that significant government support is required to stimulate biodiesel production, and support the notion of Funke *et al.* (2009), who contend that the incentives and commitments outlined by the industrial biofuel strategy are inadequate to both establish and sustain a domestic biodiesel industry. Under baseline assumptions, a minimum implicit subsidy of R4.37 per litre is required to draw soybean-based biodiesel production into the optimum solution. Results also show that the implicit subsidy is sensitive to changes in the soybean oilcake (by-product) price and the soybean (input) price.

Keywords: biodiesel, industrial biofuels strategy, KwaZulu-Natal, mixed integer linear programming, soybeans