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Die invloed van kunsmatige beligting van voerbakke op die gedrag, inname en groei van dagoud volstruiskuikens (*Struthio Camelus*)

bladsy 2

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Die invloed wat direkte kunsmatige hoë intensiteit beligting van voerbakke op die gedrag, inname en groei van volstruiskuikens het, is ondersoek. In die eerste studie is dagoud volstruiskuikens (n=110) volgens gewig en geslag ewekansig in 10 groepe van 11 verdeel in 'n omgewingsbeheerde kuikenhuis op die Kromme Rhee Navorsingsplaas naby Stellenbosch. 'n Vooraanvangsdieët is aan al die kuikens vanaf dagoud tot 30 dae ouderdom voorsien. Kunsmatige lig van hoë intensiteit (600 lux) is op vyf groepe se voerbakke gerig, terwyl die ander vyf groepe geen ekstra lig op voerbakke gekry het nie. Die hele gebou is toegerus met standaard fluoresentligte. Die proef is vanaf dagoud tot 1-maand ouderdom uitgevoer. Voer en water is *ad libitum* voorsien. Volstruiskuikens en voer is weekliks geweeg om voeriname en groei bepaal. Data is statisties ontleed deur die meervoudige analise van variansie met behandeling en ouderdom as hoof faktore. Daar was geen betekenisvolle interaksie tussen ouderdom en behandeling nie. Die gemiddelde daaglikse voeriname (175.8 vs 132.5 ± 12.0g/d) en gemiddelde daaglikse groei (104.2 vs 92.6 ± 6.8g/d) van die volstruiskuikens wat se voer belig is, was hoër ($P \leq 0.05$) as die wat geen lig op voer gekry het nie. Gedragstudies is tydens die eerste 7 dae van die proef op elke groep uitgevoer waartydens pikke na voer per 2 minute aangeteken is. Die persentasie pikke (86.98 vs 37.6 ± 6.99%) na voer by groepe waar die voer belig is, was hoër ($P \leq 0.01$) as by groepe sonder beligting. In die tweede studie is volstruiskuikens (n=50) ewekansig in 5 groepe van 10 elk verdeel. Drie voerbakke met dieselfde vooraanvangsdieët, maar met verskillende beligting, is as vrye keuse aan elke groep voorsien. Op een van die bakke voer is kunsmatige lig van hoë intensiteit gefokus, op die ander 'n groen lig en op die ander geen addisionele lig nie. Die proef is vir vanaf 30-dae ouderdom vir drie weke uitgevoer. Persentasie inname is per keuse voer bepaal. Gedragswaarneming van persentasie kuikens wat na die voerbak pik het, is gedoen. Data is deur analise vir variansie ontleed. Die gemiddelde inname van voer met groen beligting (48.2 ± 3.0 g/d) was hoër ($P \leq 0.05$) as vir voer met gewone (wit) beligting (33.3 ± 3.0 g/d) en voer met geen beligting (18.5 ± 3.0 g/d). Die persentasie kuikens se voorkeur aan beligte voer was hoër ($P \leq 0.05$) by voer met groen beligting (48.0 ± 3.5%) en wit beligting (40.0 ± 3.5%), teenoor voer met geen beligting (12.5 ± 3.5%).

INLEIDING

Swak voeriname is een van die hoof sake vir die swak oorlewing by dagoud volstruiskuikens. Vroeë groei en oorlewing van volstruiskuikens is van fundamentele belang vir die volstruisbedryf (Deeming, 1995). Inligting oor die

faktore wat voedingsgedrag op vroeë ouderdom beïnvloed, kan lei tot kennis van bestuurstegnieke wat die welvaart van volstruise op plase kan verbeter (Paxton, et al., 1997).

Volstruiskuikens is ligsensitief en indien daar 'n skerp lig teenwoordig is, word kuikens gestimuleer en is hul meer aktief (Ganzevoort, 2001). Dit is bekend dat fotoperiode, of veranderinge in ligintensiteit, die groei en gedrag van hoenders beïnvloed (Morris, 1968). Lig speel 'n belangrike rol in volstruise en die ontwikkeling van die volstruiskuikens, en het waarskynlik 'n invloed op produksie (Angel, 1996; Deeming et al., 1996; Shanawany, 1994). Volstruiskuikens is meestal aktief gedurende daglig-ure en sit oor die algemeen in die nag of wanneer dit donker is (Deeming et al., 1996). Volgens waarneming lei 'n tekort aan lig tot probleme soos swak voeding (Ganzevoort, 2001) en gedragsafwykings soos 'sterre' kyk (Samson, 1994). Dit dui aan dat genoegsame lig moontlik 'n belangrike rol in die welvaart van volstruiskuikens speel. Kuikens spandeer tot 80% van hul daglig-ure aan voeding (Agange et al., 2003). Wanneer natuurlike daglig beskikbaar is, is volstruiskuikens gewoonlik meer aktief en vreet meer (Deeming et al., 1996). Kalkoenkuikens (*Meleagris gallopavo*) kan byvoorbeeld gestimuleer word om te vreet en drink deur helder beligting of deur die flikker van gekleurde ligte (Lewis & Hurnik, 1979 in Savory, 1982).

Tydens vorige informele waarnemings gedurende vorige proewe en loodsstudies, is opgemerk dat volstruiskuikens veral aandag skenk aan strepies sonlig wat die kuikenhuis binnedring deur deurkosyne. Kuikens het vir lang periodes gepik na enige iets waarop sonstrale skyn en wanneer voerbakke onder sonlig geplaas is, het kuikens opmerklik meer tyd by voerbakke spandeer.

Die doel van hierdie studie was om die invloed wat beligting van voerbakke op die gedrag en produksie van volstruiskuikens het, te ondersoek, ten einde dit as moontlike tegniek te gebruik om inname by dagoud kuikens te stimuleer.

MATERIAAL EN METODEDES

BRON VAN KUIKENS

Die eerste studie is uitgevoer met dagoud volstruiskuikens (n=110), uitgebroei en aangekoop vanaf kommersiële produsente. Die tweede studie is uitgevoer met volstruiskuikens (n=50). Die kuikens is na die volstruiskuikenhuis te Kromme Rhee navorsingsplaas, naby Stellenbosch vervoer, waar die proewe uitgevoer is. Vir

beide proewe is die kuikens ewekansig, volgens gewig, na een week aanpassing tussen behandelings, ingedeel.

BEHUISING EN VOEDING

Die volstruiskuikehuis op Kromme Rhee bestaan uit 18 sementbokke met 'n area van 2 x 2m, en 'n buitedeur wat na 'n 10 x 2m buitekampie vir elke hok oopmaak. Die hokoppervlak bestaan uit metaalplaatvorms wat sowat 10cm bokant die vloer gelig is, en dien om die hokke skoon te hou. Dit metaalplaatvorms is met dik rubbermatte bedek om beserings te voorkom. Die hele gebou is toegerus met standard fluoresent ligte.

Die kuikens is vir die eerste week in kartonringafskortings binne die hokke aangehou om hitte en veiligheid te verseker, wat dan verwyder word soos wat hul groter word. Die temperatuur van die kamer word met behulp van gasverwarming en 'n watermuur tussen 24 – 30 °C beheer en word aangepas soos wat die kuikens groei. Ventilasië word deur 'n uitsuigwaaier voorsien. Dieselfde voer, in die vorm van 'n vooraanvangsdieët, is *ad lib* aan al die kuikens voorsien. Vars, skoon water is daaglik voorsien. Hokke is op gereelde basis skoongemaak en met antiseptiese middels behandel.

EKSPERIMENTELE PROSEDURE

In die eerste studie is die volstruiskuike, volgens liggaamsmassa, ewekansig in 10 groepe van 11 kuikens per groep ingedeel. Kunsmatige lig van hoë intensiteit (600 lux) is op 5 groepe se voerbakke gefokus, terwyl die ander 5 groepe geen ekstra lig op voerbakke (40 lux) gekry het nie. Volstruiskuike en voer is weekliks geweeg om innames en groei te bepaal (Brand, 1993). Die studie is vir 4 weke uitgevoer. Gedragstudies is tydens die eerste 7 dae van die studie op elke groep uitgevoer, waartydens pikke na voer per 2 minute getel, aangeteken is.

In die tweede studie is 'n vrykeuse-dieët aan 5 groepe met 10 kuikens per groep voorsien vir 2 weke. Die keuses het ingesluit: voer sonder beligting (kontrole), voer met ekstra beligting en voer met groen beligting. Addisionele gedragswaarneming is tydens die eerste week van die proef op elke groep uitgevoer, waartydens getal kuikens wat pik na keuse van beligte voer aangeteken en persentasie kuikens per keuse, bepaal is.

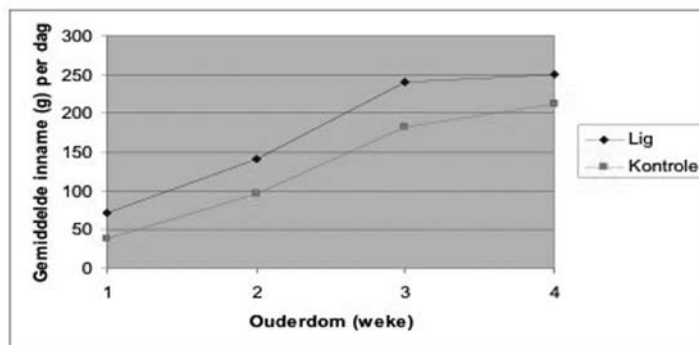
STATISTIESE ONTLEDING

Data is met analise van variansië ontleed (Statgraphics, 1991) met behandeling en ouderdom as hoof faktore. Gedragsaktiwiteite is ooreenkomstig behandelings deur middel van analise van variansië ontleed.

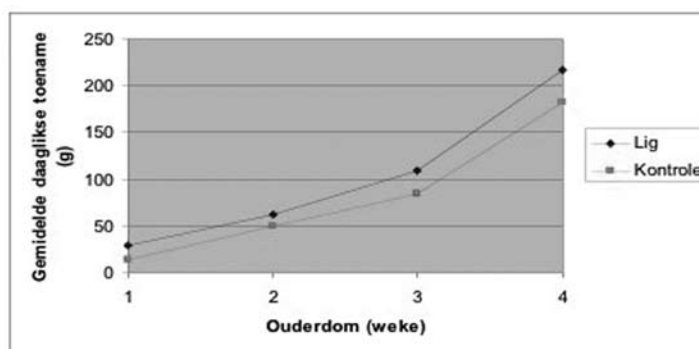
RESULTATE EN BESPREKING

Daar was geen betekenisvolle interaksie tussen ouderdom en behandeling nie. Die invloed van beligting van voer op gemiddelde daaglikse inname en groei van volstruiskuike vanaf dagoud tot met 30 dae oud word in Figure 1 en 2 aangedui. Voerinnames (DMI) en gemiddelde daaglikse toename (GDT) vir volstruiskuike in die onderskeie groepe word in Tabel 1 aangedui.

Figuur 1: Die invloed van beligting van voer op die inname van volstruiskuike vanaf dagoud tot 4 weke ouderdom.



Figuur 2: Die invloed van beligting van voer op gemiddelde daaglikse toename van volstruiskuike vanaf dagoud tot 4 weke ouderdom.



Tabel 1: Die invloed van beligting van voer op die voernames en groei (\pm std fout) van volstruiskuike vanaf dagoud tot 4 weke ouderdom.

Behandeling	DMI (g)	GDT (g)
Kontrolle	132.5 \pm 12.0 ^a	82.6 \pm 6.8 ^a
Lig	175.8 \pm 12.0 ^b	104.2 \pm 6.8 ^b

^{a,b} Dui betekenisvolle $P \leq 0.05$ verskille binne kolomme aan

Tabel 2: Die invloed van beligting van voer op die gedrag van volstruiskuike.

Behandeling	% Pikke (\pm s.f.) na voer per 2 minute
Kontrolle	37.6 \pm 6.99 ^a
Lig	86.98 \pm 6.99 ^b

^{a,b} Dui betekenisvolle $P \leq 0.01$ verskille aan

Die DMI en GDT van volstruiskuike wat se voer belig is, was onderskeidelik 43g/d en 22g/d hoër ($P \leq 0.05$) as dié wat geen lig op voer gekry het nie. Dit verskil van studies (Levenick & Leighton, 1988; Leighton et al., 1989) van

Tabel 3: Die invloed van wit, groen en geen beligting op die gedrag en voerinname van volstruiskuike vanaf 4 weke ouderdom tot 8 weke ouderdom

Behandeling	Voerinname (% per keuse)	Kuikens (%) pik na voer
Kontrole	18.5 ± 3 ^a	12.5 ± 0.8 ^a
Lig	33.3 ± 3 ^b	40.0 ± 0.8 ^b
Groen Lig	48.2 ± 3 ^c	48.0 ± 0.8 ^b

a,b,c Dui betekenisvolle $P \leq 0.05$ verskille binne kolomme aan

beligting en fotoperiode op kalkoene, waarin beligting geen invloed op die groei van kalkoene gehad het nie.

Gedragstudiedata wys dat die persentasie pikke na voer, hoër ($P \leq 0.01$) was by groepe waar die voer belig is, as by groepe sonder enige ekstra beligting op die voer (Tabel 2).

Tabel 3 wys die data van die tweede studie aan, waartydens voerbakke met verskillende beligting as vrye keuse aan kuikens voorsien is. Voerinname was 15% hoër ($P \leq 0.05$) vir voerbakke met groen beligting teenoor voerbakke met wit en geen beligting. Tydens gedragstudies was die hoeveelheid kuikens by voerbakke met groen beligting ook betekenisvol hoër as dié by wit beligting en geen beligting.

Die data stem ooreen met kleurvoorkeur roewe wat aandui dat volstruiskuike groen verkies (Bubier et al 1996) en dui aan dat die kleur van lig voerinname moontlik verder kan beïnvloed.

GEVOLGTREKING

Hoë-intensiteit beligting het 'n merkbare invloed op die voerinname en groei van volstruiskuike en kan inname verhoog. Volstruiskuike het voorkeur vir voer in bakke met ekstra beligting wat hulle stimuleer om beter te vreet. Groen lig het die voerinname van kuikens nog verder bevoordeel bo dié van wit lig. Die bestraling van kosbakke met hoë intensiteit lig en gekleurde groen lig kan dus 'n groot bydrae maak tot die suksesvolle grootmaak van dagoud volstruiskuike, om sodoende kuikens van dagoud te stimuleer om droë meeldiëte geredelik te vreet.

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Agricultural Economics: Statistics

Western Cape Department of Agriculture

A structural review of agriculture for the year ended 30 June 2009

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INTRODUCTION

Primary agriculture is an important sector in the South African economy, despite its relative small share of the total GDP; in 2008 its contribution to the GDP of the country was 3.3%. It has an indirect role in the economy, because of its ability to form backward and forward linkages with other sectors of the economy. Purchases of goods such as fertilisers, chemicals and implements form backward linkages with the manufacturing sector, while forward linkages are established through the supply of raw materials to other industries. According to the National Department of Agriculture, Forestry and Fisheries's *"Economic Review of the South Africa Agriculture (2009)"*, sixty eight percent (68%) of agricultural output is used as intermediate products. Therefore, this concludes that agriculture is an important sector and act as an engine of growth for the rest of the economy.

The purpose of this paper is to give an overview of the structural characteristics of agriculture in South Africa for the period ended 30 June 2009. It reviews and adds value to the paper (*Economic Review of the South African Agriculture*) released by Department of Agriculture, Forestry and Fisheries (DAFF) in September 2009. This article starts with giving an overview of agricultural assets followed by expenditure on intermediate goods and services, solvency and production.

ASSETS

An asset is the property or the title to property owned by the business, and is of value because it could be converted to cash, or could benefit future activities; furthermore it is obtained at a measurable cost (*Van Zyl et al., 2005*). Therefore it is important to know the value of assets that farmers have, in order to determine whether the farming is viable or not. The value of capital assets in agriculture as at 30 June 2009 was estimated at R206 582 million which is 11% higher than the previous year at the same time. Land and fixed improvements constituted R120 055 million, livestock R48 286 million and machinery and implements R38 241 million of the total value of capital assets. This concludes that agriculture is a capital-intensive industry with more investment in farm land, buildings, machinery and breeding of livestock dominating the assets structure of most types of farms. The aggregate value of land and fixed improvements has dominated, and made up more than 60% average of the total assets from 1980 up to date (DAFF, 2009b). Inventories of livestock, machinery, crops and other non-land farm assets made up some 30-40%

of the total assets. The dominance of farm land and fixed improvements, together with relatively small holdings of financial assets, indicate high capital intensity and low asset liquidity of the agricultural production sector. Investing in farming may be profitable in the long-term, but isn't always feasible on a cash basis. On average the time-frame of investment in farming is the most important factor that non-farming investors find unacceptable to invest in farming.

EXPENDITURE ON INTERMEDIATE GOODS AND SERVICES

In this context intermediate expenditure refers to the value of goods and services that were purchase for consumption as input during the production process. Expenditure on intermediate goods and services during 2008/2009 is estimated at R69 862 million, which represents an increase of 21,5% from R57 486 million in 2007/2008. On average expenditure on farm feeds, fuel and fertilisers increased by 8,2%, 51,5% and 19,1% respectively.

Expenditure on farm feeds remained the biggest expenditure item, accounting for 21,8% of total expenditure in intermediate goods and services, even though it shows a relative small increase of 8,2% from the previous 12 months compared to other expenditure items. The following contributions were made to total expenditure on the intermediate goods and services: fuel 18,2%; fertilizer 13,1%; farming services 10,7%; maintenance and repair of machinery and implements 8,9%; feeds and plants 6,8%; dips and sprays 6,6%; and packaging materials 5,2%.

SOLVENCY

Solvency indicates the ability of the business's assets to be converted to cash to meet the long term debts of the business. Debt to asset ratio is one of important ratios that are used to measure the solvency of an industry or company. Solvency is used to measure the ability of the company to cover its entire long term debt obligation, given sufficient time. Debt to asset ratio measures what part of assets is owed to lender(s). The aggregate debt to asset ratio climbed steadily (from 1980) to reach the 14-30% range in the 2000, then declined below 30% in 2001 to 2008 and the current debt to asset ratio is 24%. The rule of thumb of an asset ratio of 14-30% for farming appears to be low relative to many other economic sectors; however this range is consistent with the agriculture sector's heavy reliance on non-depreciable assets such as farm land where a significant portion of its economic returns occurs as capital gains or losses on assets. This shows that the average long-

term profitability in agriculture is relatively low compared to other sectors. Low profitability often suggests that credit is more difficult to obtain.

PRODUCTION VOLUME

The total gross value of agricultural production (total production during the production season valued at the average basic prices received by producers) for 2008/2009 is estimated at R114 463 million compared to R119 840 million the previous year, this shows an increase of 3,9%. The increase can be attributed mainly to an increase in the value of horticulture and animal products. The gross value of animal products, field crops and horticultural products contributed 48,2%, 26,7% and 25,1% respectively to the total gross value of agricultural production.

CONCLUSION

In this article we have established that on average, farming is a capital intensive industry with more investment on assets. There is high debt in farming and therefore this shows that the operation of farming is generally financed through debt. Changes in interest rates will cause uncertainty, because it will increase or decrease the cost of borrowing depending on decisions by the Governor of the SA Reserve Bank. For example, if the interest rate increases it might result in difficulty to increase the operation of the business, because it will be expensive for farmers to borrow money and this will lead to lower profits or losses sometimes in the business due to smaller amounts of produce produced. Therefore a decision by the Reserve Bank to change the interest rate is of importance to the farmers and consumers as it affects the production of food and food security.

Sometimes it can be misleading to consider annual profitability for a long-term investment, due to the volatility of annual profit and the nature of farming returns. It might be advisable to split the farm into two businesses - the property business and farming business. The farming business delivers primarily cash results while the property business doesn't (Shadbolt, 2009). Farming is sometimes described as asset-rich and cash poor, suggesting liquidity difficulties and persistent cash flow problems. Therefore the problem in farm investment is liquidity, not profitability. The mix of assets will determine the business's ability to respond to such crises. Shareholders need to be patient and accept that farming is a long term investment and long term growth rather than a quick cash investment.

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An analysis of agricultural export production of emerging farmers in the Western Cape

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1. INTRODUCTION

International trade liberalisation and deregulation have opened opportunities for the emerging agricultural sector to trade freely and obtain access to international markets by lowering government restrictions in trade. This is supervised by the World Trade Organisation (WTO) and it makes it easy for emerging producers to participate in international trade.

Before the first democratic elections of South Africa, agricultural farmers were affected by many limiting factors to access and participate in international trade such as trade regulations, unprotected industry and subsidies by government. This resulted in farmers encountering difficulties to enter the international markets and they ended up selling their products to unprofitable markets such as local communities and auctions, which generally offer lower product prices. This also contributed to high poverty levels of emerging farmers who are characterised by limited production and financial resources. The lower potential prices simply exacerbated the agricultural income of the emerging farming sector.

Since the end of the apartheid era in 1994, South African agriculture has evolved from fairly high regulated and unprotected to one that is free from all constraints, unsubsidised by government and capable of competing with the best in the world.

The Marketing of Agricultural Products Act of 1996 dramatically changed agricultural marketing in the country by closing agricultural marketing boards, phasing out certain import and export controls, eliminating subsidies and introducing import tariffs to protected South African farmers from unfair international competition. This transformation opened some opportunities for emerging farmers to participate in trade.

2. BACKGROUND INFORMATION

The Western Cape Department of Agriculture (DoAWC) wants to establish the levels of performance of black (emerging) exporters in the province in order to ascertain the baseline of one of the objectives of Land and Agrarian Reform Project (LARP). This article then focuses on the last LARP objective which is to increase agricultural trade by 10-15%. Even though the Department has a database on emerging farmers, it is not clear about the current status of the production performance of the agricultural emerging producers that are exporting in the province, as the database does not have this information. This makes it difficult for the Department to develop and adapt its support

strategy if the current status is unknown. The need to investigate the current status was then realised.

In February 2007, the Presidency challenged the agricultural sector to formulate projects that would have a positive impact on the eradication of poverty, job creation and economic growth with special focus on the designated groups such as women and youth. The emphasis was on the importance of cooperative governance, integration and coordination between government departments (*Swaartz, 2007*).

The response to this request was a proposal of an accelerated LARP that should be managed as a joint project by the then Department of Land Affairs, National Department of Agriculture, Provincial Departments of Agriculture; Agricultural state-owned enterprises and sector players. The objectives of this project (*Swaartz, 2007*) are to:

1. Redistribute 5 million ha to 10 000 new producers;
2. Increase black entrepreneurs by 10%;
3. Provide universal accesses to agricultural support services to new primary producers and farm dwellers;
4. Increase agricultural production by 10-15%;
5. Increase agricultural trade by 10-15%.

3. RESEARCH PROBLEM

South African emerging farmers - like in other developing countries - face some difficulties to access and participate in commercial and international markets, due to numerous constraints and barriers reducing incentives intended for market participation.

These factors include the limited production factors such as unavailability of financial resources or operating capital, land and machinery and skilled labour in order to produce high quality products. Other limiting factors are sub-standard marketing management capacity, lack of international market information and international networking as well as limited exposure and experiences to international markets. Political factors such as government restrictions (e.g. tariffs set by government of the country to protect the internal producers in trade) also have a negative impact on emerging farmers accessing international markets.

Due to the above challenges, the Department of Agriculture Western Cape (DoAWC) has been supporting the emerging farmers in the province through providing them with exposure to international markets. The DoAWC

in collaboration with the South African Agri Academy is taking a number of potential emerging farmers each year to Europe to experience certain international trade issues for themselves. The purpose of this visit is to provide the opportunity to these farmers to explore international markets so that they can gather information and share experiences with international market actors. The visit also helps local emerging farmers to obtain networks internationally. This support can help emerging farmers to be aware of the international requirements and add value to their products so that they can be marketable. This support can also contribute to the main objective of the Department which is to transform the economic conditions of the emerging agricultural sector and enhance sustainable rural development within South Africa.

This paper investigates the production volumes as well as local and export sales of the emerging farmers in the Western Cape. It also reviews the agricultural products that are exported by the emerging sector in the Western Cape such as deciduous fruit, citrus fruit, wines, flowers, Rooibos and Honeybush teas as well as the ostrich industry. However, the data on the number of exporters and the volumes exported each year by producers are in most cases regarded as confidential information which is very difficult to access, limiting the researcher to primary data on only deciduous and citrus fruits and the survey results shall therefore focus on it. According to the information officer of the South African Wine Industry Information Systems (SAWIS), the emerging exporters in the wine industry are exporting through commercial farmers which makes it difficult to differentiate their volumes from those of commercial exporters. This is then indicative of the fact that figures given are extremely conservative and that actual figures should be much higher than those given.

In the ostrich industry there are no emerging farmers who export, due to the fact that the ostrich industry in nature is a high risk and capital intensive industry. The risk of emerging farmers is mitigated by the fact that they only operate on one part of the value chain, namely the raising of ostrich chicks from day old to three months of age. There are at present 35 of these farmers in the Western Cape (Kruger, 2009). The data on agricultural emerging farmers' production, exports and volumes sold in the domestic market was obtained from the Deciduous Fruit Producers Trust, Sapex (Pty) Ltd and South African Table Grape Industry (SATGI).

4. SAMPLING METHOD

The target population was the marketing institutions which helps the producers to export their commodities to international markets. From this population, the sample frame of agricultural marketing institutions assisting agricultural product exporters was developed for interview purposes. One of the non-probability sampling methods which are called the 'snowball sampling method' was also used. The snowball sampling method is the method whereby the researcher provides an opportunity to or requests the interviewee to provide suggestions of names of other potential interviewees (Babbie et al 2001:167).

5. DATA COLLECTION AND ANALYSIS

The first approach that was followed was to send a letter of request to these selected institutions and requested them to provide the Department with the required data. The second complementary approach was the collection of data through the use of telephonic interviews with the relevant officers in the institutions as well as some farmers. The institutions included were: Perishable Products Export Control Board (PPECB), Deciduous Fruit Producers Trust (DFTP), South African Wine Information System (Sawis), South African Table Grape Industry (SATGI), SAPEX, South African Rooibos Council, etc. A desk top approach was also followed by reviewing publications on the export performance of emerging farmers in South Africa and the Western Cape.

Excel was used for the statistical analysis of data. The data was coded to Excel and the calculations were done. The tables were also done in Excel.

6. RESULTS AND DISCUSSION OF THE SURVEY RESULTS

In this section the production and supply chain volumes of the exporting emerging farmers are analysed. The analysis is done on the production and supply volumes data that were sourced from different institutions which assist emerging farmers to export.

6.1. Analysis of total production volumes and comparison between domestic and export sales volumes (fruit industry) of agricultural emerging sector in the Western Cape

Table 1 presents the total production volumes based on the data received. The actual totals may be greater than what is reported on the tables below for the agricultural emerging sector in 2008/2009 as this was not a census of all of the farmers. It further shows the differences between local and export markets sales volumes. The results illustrates that five of our commodities i.e. apples, nectarines, apricots, plums, and table grapes, are doing well in export markets as compared to local markets and another two i.e. pears and peaches, are doing well in local markets when compared to international markets. It further shows that from the total volume of 32 551 tons of apples produced by emerging agricultural producers in the Western Cape, 65% (21 158 tons) was exported and 35% (11 393 tons) was sold on local markets. The total production volume of 26 297 tons of pears was produced in the 2008/2009 financial year of which 44% (11 571 tons) was exported and 56% (14 726 tons) was sold on local markets.

A total production volume of 4 074 tons of peaches was produced and 52% (2 118 tons) was sold on local markets, with 48% (1 956 tons) exported. Table 1 shows that from the total volume of 1 465 tons of nectarines produced, 59% (864 tons) was exported and 41% (601 tons) was sold locally. Table 1 further illustrates that in 2008/2009 a total volume of 477 tons of apricots was produced. From this number of apricots 71% (339 tons) were sold to export markets

Table 1: Comparison of total production and sales volumes of export and local markets

PRODUCTION VOLUMES BY EMERGING FARMERS (LOCAL MARKETS)						
		2007/8		2008/9		
Source		Production (t)	Rand Value (R'000)	Hectares	Production (t)	Rand Value (R'000)
DoAWC	Apples	-	-	-	11 393	-
DoAWC	Pears	-	-	-	14 726	-
DOAWC	Peaches	-	-	-	2 118	-
DOAWC	Nectarines	-	-	-	601	-
DOAWC	Apricots	-	-	-	138	-
DOAWC	Plums	-	-	-	169	-
DOAWC	Table grapes	-	-	-	2 630	18 217
DOAWC	Flowers	-	-	-	-	-
DOAWC	Citrus	-	-	-	-	-

PRODUCTION VOLUMES EXPORTED BY EMERGING FARMERS						
		2007/8		2008/9		
Source		Production (t)	Rand Value (R'000)	Hectares	Production (t)	Rand Value (R'000)
DFPT	Apples	-	-	-	21 158	-
DFPT	Pears	-	-	-	11 571	-
DFPT	Peaches	-	-	-	1 956	-
DFPT	Nectarines	-	-	-	864	-
DFPT	Apricots	-	-	-	339	-
DFPT/SAPEX	Plums	124	-	-	749	-
SATI	Table grapes	4 296	47 737	-	13 832	192 186
	Flowers	-	-	-	-	-
SAPEX	Citrus	1 222	-	-	1 500	-

PRODUCTION VOLUMES (TOTAL) BY EMERGING FARMERS						
		2007/8		2008/9		
Source		Production (t)	Rand Value (R'000)	Hectares	Production (t)	Rand Value (R'000)
DFPT	Apples	-	-	651	32 551	-
DFPT	Pears	-	-	674	26 297	-
DFPT	Peaches	-	-	194	4 074	-
DFPT	Nectarines	-	-	64	1 465	-
DFPT	Apricots	-	-	54	477	-
DFPT/ Sapex	Plums	124	-	25	918	-
SATI/Sapex	Table grapes	4 296	47 737	-	16 462	210 403
	Flowers	-	-	-	-	-
SAPEX	Citrus	1 222	-	-	1 500	-

Source: Own Calculations based on data received from Sapex, DFPT and SATGI

Table 2: Comparison of export sales volumes of emerging farmers exporting through Sapex

COMMODITY	UNIT OF SIZE	2007/08	2008/09 CURRENT	2008/09 FINAL ESTIMATE	% CHANGE
Table grapes	Cartons 4.5kg	954 754	1 077 613	1 400 000	46.6%
	Tons	4 296	4 849	6 300	
Plums	Cartons 5.2kg	23 790	22 910	24 000	0.9%
	Tons	124	119	125	
Citrus	Cartons 15kg	81 471	0	100 000	22.7%
	Tons	1 222	0	1 500	

Source: Sapex Export (Pty) Ltd (2009): Own Calculations

and 29% (138 tons) served the local markets. The total production of plums was 918 tons with 749 tons exported and 169 tons sold on local markets.

Table 1 also illustrates that table grapes are doing better in export markets than in local markets. It is evident from this table that more than 50% (13 832 tons) of the total volume of 16 462 tons have been exported and only 2 630 tons were sold locally. The table grapes have earned a value of R210 403 826 with the data from two emerging farmers still outstanding. The value of R192 186 086 was earned from international markets and the value of R18 217 740 was received locally. This kind of information will be requested from the sources again for the 2009/2010 financial year so that it can be determined whether there is any increase or decrease in the production trends and sales of emerging farmers' production volumes and check what the determinants (if any) of the fluctuations are.

6.2 The performance of farmers exporting through Sapex

Table 2 compares the export sales volumes of different commodities between the years of 2007/2008 and 2008/2009 for emerging agricultural farmers exporting through Sapex. The commodities analysed are table grapes, plums and citrus.

From Table 2, it is clear that in 2007/2008 some 4 296 tons of table grapes were exported and in 2008/2009, 4 849 tons were exported at the beginning of April 2008 till February 2009 with a final estimation of 6 300 tons of final export volumes on 2008/2009 by the emerging farmers exporting through Sapex Export (Pty) Ltd. This data was received before the end of financial year and it made it difficult to indicate the actual final volumes. This illustrates an increase of at least 46.6% in 2008/2009 as compared to 2007/2008 for the total export sales volumes of the table grapes in this company. It is evident from Table 2 that the table grape industry, from an emerging farming perspective, was doing well though the final estimate was not available.

It further illustrates that 124 tons of plums were exported in 2007/2008 and 119 tons were already exported at the time of receiving the data with a final estimate in sales volumes of 125 tons for 2008/2009. If they meet their estimate, that would mean a 0,9% increase in the exports of plums. This year (2008/2009) plum exports were still lower by 5 tons as compared with last year's volumes on February 2009, but bear in mind that the 119 tons was not the final figure. If things happen in a positive way, there could be an increase in the export volumes of plums as indicated earlier.

Table 2 further shows us that with citrus, the total volumes exported in 2007/2008 were 1 222 tons and there was no

Table 3: Local sales volumes, exports and value (in SA Rand) of emerging farmers exporting through South African Table Grape Industry in 2008/2009

DOMESTIC MARKET VOLUMES IN (4.5KG) CARTONS	EXPORT MARKET VOLUMES IN (4.5KG) CARTONS	VALUE IN SOUTH AFRICAN RAND(EXPORTS)	VALUE EARNED IN DOMESTIC MARKETS
843 62	159 274 40	115 186 035	5 717 740

Source: South African Table Grape Industry (2009)

Table 4: Production Trends; Exported Volumes of emerging fruit Farmers exporting through DFPT on 2008/2009

COMMODITY	PRODUCTION VOLUMES (2008/09) (TONS)	% EXPORTED	HECTARES
Apples	32 550	65	651
Pears	26 297	44	674.3
Peaches	4 074	48	194.12
Nectarine	1 465	59	63.7
Apricots	477	71	54.41
Plums	918	68	25.1

Source: Deciduous Fruit Producers Trust (2009)

figure of current volumes exported with a final estimate of 1 500 tons.

6.3 The performance of emerging farmers in the South African Table Grape Industry (SATGI)

Table 3 presents the performance or contribution of agricultural developing black (emerging) farmers of table grapes that are exporting through South African Table Grapes Industry (SATGI) on the results reported on Table 1. This shows that from the overall totals of table grapes sold, the SATGI producers contributed a lot of table grapes by 84 362 cartons (4.5 kg) sold in local markets and 15 927 440 cartons (4.5 kg) were sold in international markets with a value of some R115,2 million income earned from international markets. The local value earned on domestic markets was R5,7 million and all of the above SATGI results still have outstanding data of two farmers. The demographic information of the farmers, which is also one of the areas of interest in this investigation, was difficult to obtain.

6.4. The performance of emerging fruit farmers exporting through Deciduous Fruit Producers Trust (DFPT)

The results in Table 4 were discussed in Table 1 and most of the analysis was made from these results. Five of the commodities that were discussed in Table 1 were the information gathered from the DFPT and only plums were not analysed (because of a lack of data). From the total production volume of 918 tons, some 68% of plums were exported and 32% of plums were sold in domestic markets.

7. CONCLUSION

The Agricultural Sector can play a vital role in rural development through creating opportunities for jobs and better income for farmers. Both literature and survey results illustrate that the export sector can contribute in wealth and job creation in the Province. If the emerging farmers' participation in export markets can be strengthened, it can

contribute to economic growth, the eradication of poverty and job creation which was one of the main aims of LARP. This contribution can only be realised if or when the emerging farmers participate effectively in commercial or international markets.

The emerging agricultural sector is still facing some challenges to participate in the mainstream agricultural sector but institutions such as SATI, DFPT, and Sapex (Pty) Ltd play an important role in linking these farmers with markets. The results shown in this paper illustrate that these emerging farmers have the potential to successfully participate in international markets. The fact that the results show that export volumes are higher than compared to domestic markets, is indicative of this potential. Furthermore the monetary value (R192,2 million) that the farmers received from the export markets compared to the money earned locally (R18,2 million) for table grapes shows that the emerging sector is doing well in export markets. The results further indicate that the majority of products such as apples, plums, nectarines, apricots and table grapes are doing as well in export markets as they do locally. This is baseline information and the project shall continue to investigate whether there will be any increase or decrease in the production volumes and sales trends on 2009/2010 financial year, compared to previous years.

It is of the utmost importance that data will be made available on the export performance of the emerging farming sector by all involved parties. These figures need to demonstrate to the policy- and decision makers that their policies and business practices are on track. All participants in agriculture are subsequently encouraged to keep detailed records of their production and income statistics, as well as other success indicators, so as to track economic and financial performance.

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