

# Agri-dryer reduces food wastage in Africa

ILAN SOLOMONS | WRITER

There is a significant drive throughout Africa to combat food shortages by reducing raw-product wastage, and agri-dryer technology is being used to tackle this issue by extending the shelf life of food stuffs, thereby allowing for longer marketing timelines and increasing the value of previously unwanted food items, says agricultural processing equipment manufacturer Dryers for Africa manager **Catherine de Villiers**.

"The agricultural industry in Africa is developing in leaps and bounds, with increasing interest in the use of agri-dryers from individuals and large-scale organisations across Africa," she tells *Engineering News*.

The company is supplying equipment to several projects locally and in the rest of Africa, including the Agricultural Research Council, in Nigeria; the Interprofessional Fund for Agricultural Research and Advisory Services, in Côte d'Ivoire; the National Food Technology

and Research Centre, in Botswana; and the Nkowanowa Demonstration Centre, in Limpopo, South Africa.

De Villiers notes that additional funding has been made available to help small farmers in Lesotho improve their agricultural practices, assisting many of these farmers in buying Dryers for Africa's range of agri-dryers and juicing plants to add value to their products.

The United Nation's International Fund for Agricultural Development has, in the last three years, provided \$10-million to help small farmers in Lesotho. "All our projects range from four to eight weeks, depending on the size of the project and the nature of the challenges we face, owing to the transport logistics of our product," she says.

## CD 1500 Agri-Dryer

De Villiers points out that, in the last five years, the company has introduced a range of dryers – which are manufactured at the company's



### LOCALLY PRODUCED

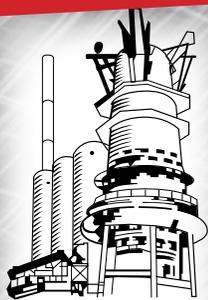
Dryers for Africa manufactures all its equipment at the company factory, in Mpumalanga

factory in Mbombela (formerly Nelspruit), in Mpumalanga – including the CD 1500 containerised agri-dryer, which is manufactured using refurbished shipping containers.

The CD 1500 is a commercial multipurpose dehydration machine that can be used to dry a range of agricultural crops including, but not limited to, bananas, mangoes, peaches, figs, apples, pineapples, tomatoes, berries, chillies, paprika, garlic, onion, cassava, herbs, spices and flowers. It can also be used to cure meat and fish.

"The CD 1500 is a game changer for the agricultural processing industry," she asserts.

## Africa's Leading Provider of Furnace & Industrial Services



**The  
DICKINSON  
GROUP**  
Founded 1910



### Products and Services:

- Turnkey Furnace Projects
- Refractory Installations
- Furnace & Heavy Industrial Demolition
- Precast Refractory Shapes
- Refractory Anchors & Stud Welding Equipment
- Plant & Smelter Services
- Silo Cleaning Services
- Industrial Vacuum Services
- Rotary Kiln Services

### Dickinson Group of Companies

Tel: +27(0)16 421 3720  
Fax: +27(0)16 422 1038  
e-mail: info@dgrp.co.za  
Web: www.dgrp.co.za

### Sub-Saharan Africa branch offices:

- Mozambique:  
Tel: + 258 2 173 0294/5
- Tanzania: Tel + 255 777 216 457
- Zambia: Tel + 260 961 02 5717



**CD 1500 AGRI-DRYER**  
The multipurpose dehydration machine can be used to dry a range of agricultural crops

## Shipping Container Recycling

De Villiers says melting down a 3 700 kg steel shipping container to make steel beams requires 8 000 kWh of energy, while the process of recycling 3 700 kg of steel to manufacture a container dryer requires only about 10% of the electrical energy needed to melt the container down for reuse.

"Refurbishing a used container provided us with a strong, durable shell that is able to not only handle the long-distance travel to our customers, which are mostly located in remote locations in Africa, but also to withstand the

high temperatures of the dryer system," she points out. Further, De Villiers notes that the container exterior remains unmodified, allowing for easy transportation by road, sea or air.

The CD 1500 comprises a 6 m shipping container with a stainless steel floor plate. The dryer's container walls, doors and ceiling are insulated by 50 mm of polystyrene and 0.6 mm of white chromadek faceplate on both sides.

The CD 1500's airflow is produced by a galvanised casing-axial, with a high-speed 380 V motor, as well as an aluminium impeller and blades.

The dryer's electrical panel is equipped with isolators, circuit breakers, fan contactors, overloads, heat contactors, relays, overheat safety thermostats, over- and under-voltage monitors, as well as an emergency stop.

The CD 1500 also has a digital programmable temperature controller, with a PT100 sensor, wet-air outlet control damper, as well as a fully automated enviro-controller, with programmable temperature and humidity control.

"In keeping with global trends, we can provide

**The CD 1500 is a game changer for the agricultural processing industry**

– CATHERINE DE VILLIERS

end-users with gas- or solar-powered conversions for all the agri-dryers," De Villiers points out.

## Challenges in Industry

De Villiers notes that a steady stream of business has been secured during the first half of the year, which she hopes will continue until year-end.

"The biggest challenge we face from an operational perspective is transporting the CD 1500 and our other agri-dryers across challenging roads and rail infrastructure in Africa. Additionally, the rising cost of transportation often exceeds the value of the item being transported," adds De Villiers.

## Research and Development

De Villiers notes that company founder **Hamish Brebner** identified a need to reduce fresh-food wastage at a small-scale level.

"Therefore, Brebner decided to establish Dryers for Africa in 1999 using his experience and skills as an engineer to design the agri-dryer prototypes and modifying them through trial and error," she states. "Since then, each machine we manufacture is carefully calculated and designed for optimal operation. Continual research is performed to... reduce unnecessary costs, improve efficiencies and... provide an easy-to-use, cost-effective product for our customers," De Villiers concludes. 

ENGINEERING NEWS COUPON ON PAGE 66 E337950



Tel: +27 (0)16 986 0030  
Fax: +27 (0)16 986 0127  
e-mail: rfq@turnmill.co.za

[www.turnmill.co.za](http://www.turnmill.co.za)

12 Fairbank Street NW7  
Vanderbijlpark, 1911  
PO Box 2092, Vereeniging, 1930



**Fabrication and reconditioning specialists**  
supplying your total needs for:

- Pressure Vessels  
Columns, Shell & Tube Heat Exchangers and Drums
- Shop Fabricated Tanks
- Rotary Kilns and Processed Fired Equipment
- Materials Handling & Structural Components
- Mill Components and Spares
- Rotable Unit Repairs and Refurbishment
- CNC Turning
- 6 Axis CNC Milling

  
**TURNMILL**  
PROQUIP ENGINEERING (PTY) LTD  
Member of the Structa Group

Turnmill is an ISO 9001:2008 and an ISO 3834 Part 2 Certified Company  
Turnmill is a level 4 BBBEE contributor