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**Why tick management
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**Temperature management
in broiler production**



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Dear readers,

This has been a remarkable year, and 2025 also marks the start of an exciting new chapter for ProAgri Africa. After years of printed publications and thousands of stories celebrating the incredible resilience of African farmers, we are proud to announce that starting in 2026, ProAgri Africa will become a fully digital format.

This was not a decision made lightly. For many years, our printed magazine has been a trusted companion on farm tables, in offices, and in agricultural enterprises.

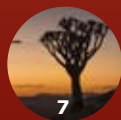
Just as agriculture evolves, so must we. Moving to a digital format allows us to continue compiling high-quality, relevant, and practical agricultural content without interruption. This will include sharing news, articles, and stories faster and more dynamically, enhancing your reading experience with easy, immediate access from any device, and reaching farmers across Africa and beyond, wherever they may be.

Rest assured, ProAgri Africa's heart remains in exactly the same place. Our focus is still on you, the farmer, providing practical solutions, expert advice, inspiring stories, and the latest news on agricultural technology. Every digital edition will feature the same passion, depth, and expertise you have come to expect.

As we wrap up another year, we want to take a moment to thank you, our dedicated farmers, partners, and readers, for your ongoing support, trust, and engagement. Your passion, resilience, and commitment to agriculture inspire us every day.

From all of us at ProAgri Africa, we wish you a blessed festive season filled with joy, quality time with your family and friends, and safe travels.

ProAgri-greetings!
Bianca Pretorius
bianca@proagri.co.za

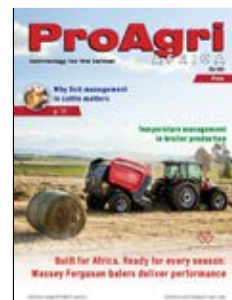


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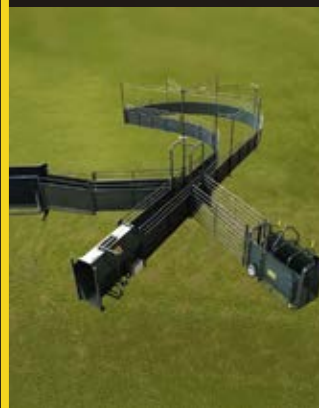
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The role of temperature management in broiler production

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Temperature plays a vital role in broiler production. The broiler bird will not perform to its full genetic potential if it is not provided with the correct temperature, whether during brooding or in the older stage. The main objective of temperature management is to provide a comfortable and healthy environment for growing birds in an efficient and cost-effective way. Failure to provide a conducive environment during rearing will reduce profitability, resulting in reduced growth and development, poor feed conversion and increased disease, condemnation and mortality.



During brooding

This happens in the first two to three weeks of your production. Temperatures must be regulated so as to provide an optimum environment for the chicks. During this stage, chicks are poor at regulating their body temperature and therefore require an external heat source. If the house temperatures are low, the chicks become chilled and stressed. If the environment is too hot, they become inactive and will spend most of the time lying down. Use a thermometer while observing chick behavior to ensure that the temperature is kept within the chicks' thermal comfort zone. When chicks huddle together near a heat source, then the temperature is too low and therefore you should provide more heat. If they stay far away from the heat source or move to the extremities of the room, then the pen is too hot. In this instance, reduce the heat and open the curtains to allow more cool air in. Chicks that are within their thermal comfort zone are spread out all over the pen, eating, drinking, sleeping and playing!

Regulating brooding temperature

During brooding, temperatures are kept optimum by providing heating by way of, among others, infrared bulbs, gas burners and braziers. Follow the recommended daily temperature to maintain consistent heat and reduce

temperature fluctuations in the brooder.

Regulate the pen temperature by balancing temperature and ventilation. Too much ventilation will cause the temperature to drop, while poor ventilation may result in increased temperatures within the pen. Balance the two to get the right temperature when dealing with either chicks or older birds.

Open curtains covering the windows from top to bottom and not from bottom to top. This will ensure a clear outlet for waste gases (such as carbon dioxide, ammonia and carbon monoxide) and a good inlet for fresh air. This is important because warm waste air will always rise to the top and find its way out through the opening at the top of the window. Then the cool oxygen-rich air entering the pen from the top warms up as its moving downward, reaching the chicks at just the right temperature.

Effects of low temperatures during brooding

- Low feed and water intake translates into poor growth and development of chicks.
- Chilled chicks have suppressed immunity, making them more susceptible to diseases, leading to high first-week mortality.
- High mortality can occur when chicks huddle together, crushing one another.
- If chicks don't eat or drink because they are chilled and uncomfortable, they will not digest feed and hence will not benefit from the heat produced during the digestion process.



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HI 16	1800mm	35 - 50HP
HI 28	2615mm	60 - 80HP
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DISC DIA.		20"



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2	1400mm	35 - 50HP
3	1900mm	50 - 66HP
4	2900mm	60 - 80HP
6	4000mm	85 - 90HP
WORKING DEPTH		0 - 120mm
FERTILIZER HOPPER		60L
SEED HOPPER		45L
MIN. ROW SPACING		420mm



DISC PLOUGH

NO. DISC	WORKING WIDTH	TRACTOR SIZE
2	600mm	35 - 50HP
3	900mm	60 - 75HP
4	1200mm	80 - 90HP
WORKING DEPTH		150 - 300mm
DISC SPACING		550mm
DISC DIA.		26"



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OFFSET DISC HARROW

MODEL	NO. DISC	WORKING WIDTH	TRACTOR SIZE
CRSG	14	1550mm	75HP
CRSG	16	1750mm	85-95HP
CRSG	18	2000mm	95-105HP
CRSG	20	2250mm	125-140HP
CRSG	24	2420mm	132-145HP
CRSG	28	3200mm	148-163HP
CRSG	32	3650mm	169-185HP



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MODEL	AMD-ED	
PRODUCTION	SOYA	500Kg/Hr
	MAIZE	1500Kg/Hr



- The digestive tract is not stimulated; hence, its development is poor, resulting in poor growth rates and low weights.
- The chicks will not take up the carbohydrates they require to absorb the residual yolk sac quickly. If the yolk sac remains unabsorbed, it increases the risk of navel yolk sac infections (such as Omphalitis), which will result in increased mortality in the first week.
- The yolk sac has maternal antibodies that the chicks benefit from once they absorb it. If it is not absorbed, the chicks will not get the full benefit of the maternal antibodies, resulting in poor health and increased mortality.

Temperature management in older birds

Temperature management in older birds is also critical. Once birds get older, their body temperature ranges between 40 and 44 °C. The appropriate temperature in the house is between 13 and 25 °C. The birds are constantly losing heat to their environment.

In order to keep them comfortable, provide a balance between their

body temperature and the house temperature. If the house temperature is lower than the body temperature, the chickens will lose body heat and become cooler. When kept in a hot, poorly ventilated pen, the birds may overheat and suffer heat stroke. We need to keep them cool with lots of fresh air and good quality oxygen.

This can be achieved by the following activities:

- Providing adequate ventilation – wide open windows on either side of the house.
- Using an appropriate stocking density with emphasis on environmental temperatures.
- If the pen becomes too cool, close some of the curtains to reduce drafts and help raise the temperature.

Results of poor heat regulation in older birds

- If they are not kept in a cool, well-ventilated pen, they may get heat stroke, which can result in heat stroke and death.
- The feather cover on older birds is more useful in heat retention and not heat loss when the ambient temperature is too high. This helps the birds cool off by providing a cooler environment.

- Overheated birds will drink more water to cool themselves at the expense of feed intake, resulting in delayed growth.
- If temperatures are too low, the birds will consume more feed, much of it being used to generate body heat through the digestive process.
- High temperatures resulting from poor ventilation will cause poor litter quality, leading to buildup of ammonia, an outbreak of diseases and skin lesions on the birds' body.



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Rotovator	1,6 m / 1,8 m / 2,1 m Rotovator

TYPE	MODEL
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Namibia News:

UAE company's investment to boost date production, job creation

by Tisha Steyn

The Namibian government has welcomed a major agricultural investment in the //Kharas Region, where Warifo Investment, a company based in the United Arab Emirates (UAE), has invested N\$500 million in the Green Agricultural Initiative for Development and Investment (GAIDIP) Oasis Agricultural Project.

The initiative is expected to transform date production in the country while creating thousands of jobs and strengthening national food security.

Prime Minister Tjitunga Elijah Ngurare, speaking at the inauguration on behalf of President Netumbo Nandi-Ndaitwah, said the project marks a significant step toward agricultural modernisation and economic diversification.

The first phase of the project has already created more than 300 jobs, with employment expected to surge to 1 200 as expansion continues. At full capacity, the development is projected to support about 3 000 workers, offering sustainable economic opportunities for communities in the region.

Ngurare said the company will plant an initial 60 000 date palms, with plans to expand to 600 000 trees within five years through its own offshoots. Once operational, the farm aims to produce 5 000 metric tonnes of dates every year, a volume that would position Namibia alongside major date producers such as Chile and Peru.

More than 12 000 trees have already been planted, supported by a comprehensive smart irrigation system designed to service over 140 hectares.

Preparations for additional high-value crops are underway, transforming the area near the Orange River into a productive agricultural hub. Besides dates, Warifo intends to grow a variety of high-value crops, such as potatoes, onions, butternut, sweetcorn, pomegranates and grapes.

Ngurare emphasised that such an investment plays a critical role in strengthening food security, warning that no nation can be fully sovereign if it cannot feed itself.

"A nation that cannot feed itself lives at the whims of those who feed it," he said, noting that the partnership

between government and the private sector is vital for job creation and long-term stability.

Following the UAE's lead

Ngurare praised the UAE's National Food Security Strategy 2051, saying Namibia can learn from its focus on boosting local food production through innovation and technology.

In the same spirit, the GAIDIP project incorporates modern, climate-smart systems, including advanced automated irrigation technology powered by renewable energy.

These systems, Ngurare said, support Namibia's NDP6 goals, which aim to modernise agriculture, strengthen value chains and enhance national resilience.

He added that the irrigation technology piloted at GAIDIP could serve as a model for similar developments along the Kunene, Kavango and Zambezi rivers, which are areas with the potential to become high-output agricultural zones.

Bold leadership

"Through this project, Warifo Investments has demonstrated bold leadership by mobilising private capital for rural development and high-value production," Ngurare said. "Their mission to position Namibia as a competitive exporter of premium dates and grapes boosts national revenue and helps integrate Namibia more strongly into regional and international markets."

Warifo Investment General Manager Husam Elshafei described the project as a "completely unique design", highlighting that the first phase alone carries an infrastructure value of more than N\$450 million.

Ngurare noted that this investment comes at a crucial time, as Namibia works to reduce its dependency on imported food, strengthen national self-sufficiency and build a resilient agricultural sector.

He concluded that strong public-private partnerships, such as this one with Warifo, are essential for driving Namibia's economic transformation. "These partnerships reduce pressure on the national budget, create jobs, attract investment and enhance long-term sustainability," Ngurare said.

The //Kharas region is the southernmost and least densely populated area in Namibia. This region consists of Keetmanshoop as its capital, and includes the towns of Karasburg, Lüderitz and Oranjemund, while Aroab, Berseba, Bethanie, Koës and Tses are self-governed villages.

The region is demarcated into seven constituencies, namely Keetmanshoop Urban, Keetmanshoop Rural, Berseba, Karasburg West, Karasburg East, Lüderitz and Oranjemund.

The region boasts world-renowned tourist attractions, including the hot water springs at Ai-Ais, Warmbad and /Ganigobes, the Kokerboom Forest near Keetmanshoop, and the Fish River Canyon – the largest canyon in Africa.

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Smart agriculture can change Namibia's food security

Despite good rains that improved Namibia's food insecurity, the country's food security remains at risk as a result of affordability, market access, a lack of resilience to climate change and resulting lack of long-term food security. (Source: Pixabay)

by Tisha Steyn

Smart agriculture can address the four main challenges of Namibia's food production, namely affordability, market access, climate resilience and long-term food stability. This will culminate in sustainable food security, which is presently vulnerable to risk.

Building a resilient future requires rethinking how Namibia produces food more efficiently and sustainably – and with stronger links from farms to markets. This is the view of Shange-Ndamona Mungoba, food technologist and Agri-Projects Lead at PS Investments, who believes the country is well-positioned to strengthen food security through innovation.

She highlights that, despite economic and climatic challenges, Namibia maintains strong food safety and fortification standards through institutions such as the Namibian Standard Institution (NSI) and the Ministry of Agriculture, Water and Land Reform (MAWLR). These structures, she says, form the backbone of a food system that can grow increasingly competitive at the regional level.

Smart Agriculture: Bridging—the—gaps

Mungoba emphasises persistent weaknesses in Namibia's food system, particularly affordability, market access, and climate resilience. Smart agriculture, she argues, can address all three.

Nearly a third of food produced globally is lost before it reaches consumers, and Namibia faces similar inefficiencies due to post-harvest losses, limited cold chain capacity, and fragmented markets. Smart agriculture solutions, such as digital monitoring, precision irrigation, and predictive planning, can dramatically reduce these losses.

One model showing promise is the "farm-to-fork" or "plug-and-play" production system, built around

coordinated offtake agreements. These contracts secure markets for farmers before planting begins, protecting them from fluctuating prices and ensuring minimal waste. The result is more stable incomes for producers and a more reliable food supply for consumers.

Namibia's climate variability, marked by frequent droughts, makes innovation essential. Remote-sensing irrigation, controlled-environment farming, and data-driven soil management can significantly boost yields while reducing risk. According to Mungoba, these approaches not only improve productivity but also strengthen the most vulnerable pillar of food security, namely long-term stability.

PS Investments: Technology at the centre of food security

PS Investments, a wholly Namibian-owned agribusiness, has placed technology-driven farming at the heart of its strategy to strengthen two key pillars, namely availability and access. The company's work supports national goals of improving food affordability and creating jobs, particularly in rural communities.

A vital component of its model is skills development. By providing training in smart farming, mechanisation, and data-based management, PS Investments equips young people and farm managers with the capabilities needed for year-round, climate-resilient production.

The company is also investing in biotechnology, particularly tissue culture techniques, to develop climate-adaptive and pest-resistant crops that are suited to Namibia's semi-arid conditions. This complements national nutrition initiatives by improving both the quantity and quality of food entering the market.

Strategic partnerships for regional impact

To scale its impact, PS Investments has entered high-level partnerships aimed at expanding national food production. One major initiative is a joint venture with the Namibian Correctional Service (NCS) and Eos Capital's Euphrates Agri Fund. This collaboration focuses on large-scale, controlled-environment farming in Katima Mulilo in the Zambezi Region.

The project will prioritise high-value crops produced through hydroponic and greenhouse systems, methods that reduce water use while ensuring consistent, year-round harvests. This regional model is designed to be replicable across Namibia.

PS Investments is also conducting feasibility studies in Nkurenkuru in the Kavango West region to establish production hubs near some of the country's most populated areas. These hubs will reduce logistics costs, shorten supply chains, and improve access to domestic and regional Southern African Development Community (SADC) markets.

The initiative includes compliance with standards developed by the Namibian Agronomic Board and GLOBALG.A.P., ensuring local

produce can easily enter major retail markets and, ultimately, meet export requirements.

The road ahead

Namibia's food security journey is one of resilience, innovation, and opportunity. While the country has a strong institutional framework, achieving lasting food security depends on continued investment in climate-

smart, technology-led agriculture.

Mungoba believes that smart agriculture represents a shift from survival farming to sustainable, market-oriented production, thereby strengthening all four pillars of food security, namely availability, access, utilisation, and stability.

With the right technologies and partnerships, Namibia can transform its agricultural sector into a driver of inclusive growth and long-term national resilience.

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Why tick management in cattle matters

Article supplied by Beefmaster South Africa

Ticks are more than a minor irritation – they can have serious effects on cattle health, leading to weight loss, poor fertility, hide damage, reduced milk yield, and even death. As exotic tick species spread and resistance to pesticides increases, integrated tick control has become more critical than ever, says Thapelo Kgosi Ramokala, animal health specialist at the Beefmaster Group.

"Ticks are among the most important external parasites affecting livestock in South Africa," says Ramokala. "They not only cause direct damage by sucking blood and irritating the skin but also act as vectors for serious tick-borne diseases."

Common tick species and diseases

The main types of ticks found on beef cattle in South Africa include the blue tick (*Rhipicephalus decoloratus*), bont-legged tick (*Rhipicephalus appendiculatus*), bont ticks (*Amblyomma hebraeum* and *Amblyomma variegatum*), brown ear tick (*Rhipicephalus appendiculatus*) and the Karoo paralysis tick (*Rhipicephalus evertsi evertsi*).

Other significant species include the invasive Asian blue tick (*Rhipicephalus microplus*) and Hyalomma ticks (*Hyalomma marginatum*, *Hyalomma rufipes* and *Hyalomma truncatum*).

"These hard ticks are primarily responsible for transmitting deadly tick-borne diseases," says Ramokala.

The most common tick-borne diseases are redwater, spread by blue ticks; gall sickness or anaplasmosis, mainly transmitted by blue ticks; and heartwater, which is spread by bont ticks. Hyalomma ticks also cause tick toxicosis and spread diseases such as Crimean-Congo haemorrhagic fever in wildlife and humans.

Ramokala says that understanding tick life cycles is key. "One-host ticks like *R. microplus* complete their entire lifecycle on a single animal and can be managed with strategic dipping," he explains. "Three-host ticks like *A. hebraeum* drop off between life stages, making them harder to control."

Chemical control: still the first line of defence

The most popular form of defence against ticks is chemical control.

"Acaricides are the most widely used pesticides to control tick infestations," Ramokala states, adding that they can be applied via dipping tanks, spray races, pour-ons and injectables.

"Proper rotation of acaricide classes (organophosphates, amidines, pyrethroids and macrocyclic lactones) is essential to slow down resistance."

Furthermore, strategic dipping is essential. "Not dipping too often allows animals time to build some natural immunity to tick-borne diseases, while still keeping tick populations manageable," he comments.

Resistance is a growing threat

Over decades, ticks in South Africa have developed resistance to nearly all major acaricide groups. "This is mainly due to overuse or incorrect dosage," argues Ramokala. "Farmers are also guilty of dipping at irregular intervals or underdosing."

Another problem is the repeated use of the same pesticide without rotation. "Resistance results in poor kill rates, forcing farmers to dip more frequently, which worsens the problem," he says.

In terms of managing resistance, farmers need to rotate chemicals by class. "They should use a combination of products where appropriate and

monitor dip-wash concentrations to avoid underdosing."

Non-chemical options

Ramokala says not many beef farmers are aware of the ways in which they can protect their cattle without resorting to pesticides, but this can be done through pasture management, such as rotational grazing and veld resting to reduce tick numbers.

Another effective control measure is breed selection.

"Indigenous breeds like Nguni and Afrikaner cattle show higher tick resistance compared to exotic breeds. There's also biological control through natural predators, such as birds, ants and fungi."

Looking ahead

According to Ramokala, acaricide resistance is the biggest challenge to tick management, which threatens the long-term viability of many beef farmers. "In addition, resource constraints in communal farming areas make structured tick control difficult."

He believes future management will likely rely more on vaccines against ticks and tick-borne diseases should they become available, improved farmer training and integrated tick management programmes tailored to smallholder and commercial farmers alike.

"Farmers need to know their farm's specific tick challenges, including the dominant species and their seasonal patterns, to plan an effective control regime," he concludes.

Beefmaster Group, animal health specialist, Thapelo Kgosi Ramokala (King).



Maintain a healthy herd – tick control protects cattle and boosts production. (Photo credit: Beefmaster Group)





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West Africa Chad

by Tisha Steyn

Chad is a landlocked country in West Africa situated at the crossroads of North and Central Africa. The country's neighbours include Libya to the north, Sudan to the east, the Central African Republic to the south, and Cameroon and Nigeria to the southwest.

It has three main regions, namely the Sahara Desert in the north, the Sahel arid zone in the centre, and the more fertile Sudanian region in the south. Lake Chad, after which the country is named, is the second-largest wetland in Africa.

More than 80% of the country's population relies on subsistence farming and livestock raising. The crops that are grown and livestock that are kept depend on the local climate, and thus the climate also influences the diet of people in the different regions.

Some 10% of the country's crops are planted in the fertile southernmost part of the country, yielding good sorghum and millet crops. Although only hardier sorghum and millet crops grow in the Sahel, the region is more suitable for livestock farming, including cattle, goats and sheep – and even horses and donkeys roam the pastures.

Fishing communities living along Lake Chad rely on tilapia (low-fat, high-protein fish) and other species that are prepared fresh, dried, or smoked.

Meals are typically shared from a

communal bowl, eaten with the right hand or with thin sorghum flatbreads used to scoop up stews. The midday meal is usually hearty, followed by lighter evening plates and street-grilled meat during the cooler part of the day.

How Chad eats today

Chadian cuisine stands out for its grain foundations, resourceful sauces, and regional contrasts – from Sahara-frugal techniques to fish-rich lakeside cooking and Sudan-influenced flatbreads. Meals are communal, practical, and deeply tied to climate and mobility.

01 Staples

Boule is a starchy staple. The dish is prepared with millet, sorghum or sometimes maize flour vigorously whisked into boiling water and stirred to a smooth porridge. The porridge is formed into balls and served with stews and sauces flavoured with peanuts or leafy vegetables such as amaranth or moringa. Pieces of meat or dried fish are sometimes added.

Kisra and mullah/moulah Kisra is a thin, foldable flatbread made from a fermented batter of sorghum or

sometimes millet, poured onto a hot, smooth griddle and peeled off in sheets. Kisra can also be made into a porridge.

It is eaten with mullah, a variety of gravies or sauces, such as savoury gravy mullah bamia (okra), mullah rob (soured milk), or mullah sharmout (with dried meat). Fermentation enhances flavour and improves digestibility in a hot, arid climate.

Kisra is eaten daily, especially at lunch, with diners tearing pieces to scoop sauce from a communal bowl. The combination offers a balance of grain and modest protein, and it underscores how regional trade and nomadic routes have shaped Chad's eastern table.



Kisra is a thin, foldable flatbread made from a fermented batter of sorghum, or sometimes millet, poured onto a hot, smooth griddle and peeled off in sheets. (Source: <https://travelfoodatlas.com/chadian-food/>)

02 Sauces

Tagalia is a sauce consisting of minced meat, commonly called charmoute, tomatoes, salt, onion, and oil. It is served with dumplings prepared with wheat, corn, or rice flour.

Kawal sauce is a traditional sauce made with herbs and spices believed to help with digestion, immune support, and relief from common health issues.

03 Vegetable dishes

Moulah Daraba is a vegetable stew made from okra, tomatoes, onions and ground peanuts, often with sweet potato or squash, aubergine and leafy greens such as spinach (depending on what's in season). Fried fish or a bit of meat is sometimes added. Cayenne pepper adds spice and a beef bouillon cube (local Maggi brand) adds a savoury note. Daraba is served with boule or rice for an affordable midday meal or a common street market food.

Maharagwe, which means 'beans', is made from red beans, haricot beans, or any other beans stewed in a coconut milk sauce and flavoured with onion, cardamom, cinnamon, garlic and chili. It is considered to be an extremely nutritious dish that is usually vegan and gluten-free.

Loubiya is another bean dish prepared with sugar or salt and eaten with bread or fritters.

Peanut and squash stew, as the name suggests, is a stew prepared using peanuts and locally grown squash as its main ingredients, as well as tomatoes, red peppers, and spinach, and spiced with turmeric and ginger. On special occasions, meat may be added.



Loubiya is a sweet or salty bean dish eaten with bread or fritters. (Source: <https://www.chefspencil.com/popular-foods-in-chad/>)

Ordevre is made with potatoes, eggs, carrots, oil, and salt, and can be eaten with bread. It is typically prepared for ceremonies or family gatherings.

Chourbah is a soup prepared with water, oil, potatoes, carrots, meat, and yellow chili, also eaten with bread or fritters.

04 Meat dishes

Jarret de Boeuf is a traditional Chadian stew made with cooked beef and vegetables, such as carrots, sweet potatoes, leeks and aubergines. The French name is a leftover from France's 40-year presence in the country and means 'shin of beef' in English. It is served in bowls and eaten with rice or fufu, an African-style dumpling prepared using cassava and plantains. Sometimes the dish is served with a light sauce with chopped tomatoes, onions, crushed garlic and coriander.

Bangaou is a stew prepared from sweet potatoes and meat, generally lamb. The dish is flavoured with ginger, onions, garlic, tomatoes and a beef bouillon cube – and sometimes peas or chickpeas are added. The stew is

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enjoyed with couscous or rice.

Agashe are charcoal-grilled skewers of beef, mutton, or goat prepared with a dry rub of ground roasted peanuts, chili, salt, and sometimes garlic or cumin. Street vendors sear the meat over hot coals and serve it with *kisra* or *boule*, sliced tomato and onions.



Moulah Daraba is a vegetable stew made with seasonal vegetables such as okra, aubergines, tomatoes and onions with bits of fish or meat added. (Source: <https://www.chefspencil.com/popular-foods-in-chad/>)

05 Snacks

Aiyash is a popular snack food prepared with millet flour, sunflower seeds, silken tofu, salt, and oil. It is served with different sauces, such as a thick peanut dip. Other dipping sauces include *saka saka*, a sauce made from crushed or finely chopped spinach and okra blended with vegetable oils.

Guima is also made with minced meat, sometimes eaten as a sandwich, and at other times mixed with an omelette. It is a favourite lunch snack.

Guima is made with minced meat and sometimes eaten as a sandwich as a favourite lunch snack. (Source: <https://www.chefspencil.com/popular-foods-in-chad/>)



06 Fish dishes

Salanga refers to small fish from Lake Chad, often tilapia or other local species, which are cleaned, salted, and sun-dried on racks, or sometimes lightly smoked.

The fish, which is briefly cooked in oil until crisp or simmered in sauces, is a rich source of protein. The fish may also be pounded into flakes for stews or sauces and served with *boule*. It is commonly sold as street food or a snack.



Canda consists of minced fish balls cooked in a sauce and eaten with bread. It is a favourite school snack. (Source: <https://www.chefspencil.com/popular-foods-in-chad/>)

Karkandji is prepared with sorrel leaf – a green herb used in cooking and salads – and meat or fish, to which peanut paste or sesame flour is added for seasoning.

Souroundou is rice cooked with chicken or fish and tomato, onion, *perci* (a type of green pepper), potatoes, and spices.

Canda consists of minced fish balls cooked in a sauce and typically eaten with bread.



Souroundou is rice cooked with chicken or fish and tomato, onion, *perci* (a type of green pepper), potatoes, and spices. (Source: <https://www.chefspencil.com/popular-foods-in-chad/>)



Agashe are charcoal-grilled skewers of beef, mutton, or goat prepared with a dry rub of ground roasted peanuts, chili and salt, seared over hot coals and served with *kisra* or *boule*. (Source: <https://500wordsmag.com/food/agashe-sudans-homage-to-its-african-roots/>)

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