

FACTSHEET NO 6: ORGANIC CROP PRODUCTION FOR ANIMAL FEED

Introduction

Certification of organic products requires the entire value-chain in which they are produced to be assessed and certified. For a product to be sold under a certified organic label, both the producer and processor need to ensure that production complies with organic standards, and that there is no risk of contamination through harmful chemicals or genetically modified organisms (GMOs). Organic agriculture practices and standards are based on and guided by the four principles of organic agriculture: Health, Ecology, Fairness and Care.

Why organic feed for organic animals?

For organically managed livestock to be certified, a farmer must show that animals were only fed certified organic feed, be it grass or supplementary feeding, and not anything from conventional sources (e.g., derived from GMOs or grown using chemical fertilisers and pesticides). Ideally, organically managed animals are fed using feed grown on the farm, but certified feed from other sources can be bought in. As the Namibian organic sector is still in a development stage, standards allow for up to 10% of dry matter for ruminants and 15% of dry matter for non-ruminants to be derived from conventional, non-GMO sources on an annual basis. Certifiers can grant a larger percentage in individual cases of emergency or natural disasters. Fodder and feed must be adapted to the dietary needs of the species with ruminants being fed mainly on roughage (including natural grass).

Organic crop production for animal feed

If animals cannot be sustained by the natural environment on the farm, additional feed and fodder is ideally produced on-site to avoid direct and environmental costs of bringing in animal fodder from other parts of the country or region. Sowing pastures may supplement natural veld and improve animal nutrition. These pastures are managed using organic principles. Arable crops that can be grown include maize, sorghum, millet, lucerne, cowpeas, oats, sunflowers, sunhemp, mucuna/velvet beans, lab lab and pigeon peas. Crop production for animal fodder is done under organic plant production principles (see 'NOA Guide Organic crop production' for further guidance on standards and 'Organic Meat Factsheet #5' on alternative feed sources for non-crop feed for livestock).

Soil fertility management

Organic farming returns microbial, plant or animal material to the soil to increase its fertility and biological activity. Soil health and quality are the basis of soil management practices and are critical for successful pest, disease and weed management. Organic growing systems are soil based, care for the soil and surrounding ecosystems provide support for a diversity of species, are based on nutrient recycling recycling, and mitigate soil and nutrient losses.



Intercropping

Monocultures are more prone to pests and diseases as these are more able to take hold in a system where the same crop is grown year-on-year. Polycultures or intercropping are therefore encouraged in organic crop production systems as well as the incorporation of pest-repellent plants among or on the outside of the main crop. Intercropping with nitrogen-fixing legumes also enhances soil fertility.

Crop rotations

A crop rotation system is an important part of pest/disease and soil fertility management in organic agriculture. Crop rotation and intercropping practices can be used either in combination with each other or on their own, so long as a particular field is not only cultivated with a single crop year-on-year.

Cover crops & green manure

Cover crops should be grown on the main crop field during the non-growing season to ensure that the ground is covered. Cover crops can be used as animal fodder or as green manure incorporated into the soil of the field prior to cultivating the main crop in the new season. Farmers often use a mix of grains (e.g., rye), radish and a legume (e.g., clover) as cover crops because these complement each other well in terms of nutrients. Other suitable cover crops are velvet/mucuna beans (high biomass production with little water requirements) and cowpeas (specially a creeper variety).

Mulching

Mulching is a key practice in organic agriculture as it protects the soil from unnecessary water loss and extreme temperature fluctuations. Soil microorganisms are extremely sensitive to extreme day/nighttime temperature fluctuations, which are especially common in a country like Namibia. With mulch acting as a protective cover, there is a lower rate of evaporation/water loss from the soil – this means less water usage, which is very important in a dry country such as Namibia. Mulching also protects the soil surface from wind and water erosion (during for example heavy downpours). Mulch material can be collected from in and around the farm, especially leaves and dry grass. Mulching with dry materials also helps manage termites as they prefer dry materials over fresh plant material and will not attack living plants if they have dry material available.

Organic fertilisers

The use of organic fertilisers, ideally made on the farm with materials from the farm, is encouraged. The use of synthetic fertilisers is not allowed under organic standards. Natural minerals may be added to balance soil nutrients. Organic fertilisers that can be made/grown on the farm include compost, compost and plant tea, manure, green manures.

Integration of livestock into crop production

The integration of livestock into crop production systems is encouraged and can be implemented by allowing livestock into crop fields post-harvesting where they are able to feed on crop residues as well as leaving their manure on the field which in turn improves soil fertility. Poultry or pigs can be integrated into crop and vegetable production systems post-harvesting as weed and nutrient management. So-called chicken/pig tractors can be used to confine these to the respective area.

Organic pest & disease management

Pest and disease management in organic agriculture focuses on building and maintaining soil fertility. Healthy soils allow plants to thrive, and they are less likely to be attacked by pest and disease. Healthy plants have a high sugar content (as measured by the Brix value), which insects are not able to digest. Organic crop production systems promote biodiversity through intercropping, companion planting, hedges and buffer zones that offer habitats for beneficial insects that serve as natural pest control. An integrated pest management system is implemented through prevention, regular monitoring for pests and disease ('scouting') and, as a last resort, control measures in the following order: mechanical, biological, chemical (using remedies allowed under organic standards). Ecological approaches are promoted, such as the push-pull system for maize crop to manage striga weed, fall armyworm and stemborer attacks. Weeds are controlled manually and through cover cropping. Over time, organic crop production systems typically see a reduction in weeds.

Seeds & crop varieties

Non-GMO seeds are used for growing crops. Crop varieties should be selected based on their suitability for the local environment – hence, local varieties are usually best suited. Ideally, seeds should not be treated. Since non-treated seeds are not available in retail shops, organic standards under Namibia organic regulations do allow the use of treated seeds.

Preservation/storage of animal feed and fodder

Harvested feed and fodder can be stored by drying (making hay), fermenting (without chemical additives) or milling for better digestion. An alternative is to store seeds post-harvesting and sprout these prior to feeding to increase nutrient content. Sprouting seeds for animal feed is typically barley, oat and wheat, but can be done with any seed. These sprouts are high in nutrient content and can be made within a water-efficient system year-round that has no need for synthetic fertilisers or pesticides. Harvested feed and fodder cannot be stored with toxic substances that could contaminate it and it cannot be treated with chemicals to control pests.

Delivery of feed

During on-farm delivery, feed and fodder may not be contaminated with any chemicals on trailers or vehicles. This is also applicable for any feed and fodder brought in from outside sources.

About the Namibian Organic Association (NOA)

NOA is a membership-based association established in 2009 by a group of dynamic farmers and consumers with the common interest of developing the organic sector in Namibia.

About the Knowledge Hub for Organic Agriculture in Southern Africa (KHSa)

KHSa is part of the project Knowledge Centre for Organic Agriculture in Africa (KCOA), a collaborative country-led partnership funded by the German Federal Ministry of Economic Cooperation and Development (BMZ) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and non-governmental organisations. The project aims to scale up adoption of organic farming practices through five knowledge hubs in Africa. In the Southern African Knowledge Hub (KHSa), project activities are focused in Zambia, in Namibia (led by the Namibia Nature Foundation and NOA), and in South Africa and Malawi. For more information contact the KHSa Project Manager for Namibia: noa@nnf.org.na.

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