



KENYA

THE KILLER DAISY

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An employee of Kapi LTD works on quality control.

THE KILLER DAISY

The flower that's gaining an important role in organic farming

- ▶ Pyrethrum, a flower from the Asteraceae family, has been used for centuries as a natural insecticide.
- ▶ The pyrethrins extracted from the flowers contain an extremely low level of harmful substances – up to 10 times less toxic than alternatives – and for this reason it is the most commonly used insecticide in organic farming.
- ▶ Kenya has always been the largest producer and exporter. The flowers can be harvested every 15 days, ensuring farmers year-round revenues.
- ▶ In the 1980s the production of synthetic pyrethroids led to a huge decline in pyrethrum farming in Kenya.
- ▶ The growing demand for organic food products has revived the sector and numerous farms have started growing the plant once more; the sector has also been boosted by the arrival of private companies.

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Aerial view of the nursery. The cleaning of the pyrethrum is done once every 2 weeks, strictly by hand. In other countries, such as Australia (a large pyrethrum producer) cleaning and harvesting are automated. According to some studies, this lowers the quality of the plant (during cleaning) and pyrethrum (with mechanisation are also collected leaves and stems).



The plants are harvested approximately every 10 days and, if well looked after, have a life cycle of 4 years.



Also the drying and monitoring procedure is divided into parts based on the place where the pyrethrum was harvested. Scientific research has helped to improve the quality of the harvested pyrethrum.



In the 1980s in Kenya annual production of pyrethrum reached almost 30 thousand tonnes. Production declined dropping to a mere 200 tonnes in 2016. Today the demand for natural pyrethrum is rising rapidly.



On particular days, which are planned in advance, the facility is cleaned of any chemical residues and organic products are made using pyrethrum mixed with sawdust to ensure that the coil is flammable but slow burning.

The pyrethrum is a flower. Actually, it's the "flower of death", a nickname that neatly describes this delicate daisy imbued with murderous power. The pyrethrum, which is cultivated mainly in the hills of Nakuru in Kenya, is the arch foe of the insect world. Indeed, when insects encounter the substance extracted from the flower, they are stunned, paralysis sets in and then they die. Used for centuries as a natural insecticide, it was only in the middle of the 19th century that pyrethrum made an impact on the global pesticides market, earning an eminent position among natural insecticides. It contains, in fact, extremely low quantities of toxic or harmful substances; it is extremely volatile and does not penetrate the plant sap.

During the nineteen eighties, however, the pyrethrum crisis began, caused mainly by the chemical synthesis of pyrethroids that gave life to a very different market of products that were cheaper but not organic. Today, however, this special daisy is being grown once again on the clay hills of Nakuru at an altitude of over 1500 metres. The Kenyan government has decided to liberalize production of pyrethrum, allowing private companies to get involved as part of an ambitious attempt to revive the sector and help local farmers meet the growing global demand for organic products. Once sown, the plant will provide a yield approximately every 15 days, all year round.



Mr. Joel Maina Kibett explains the changes that have occurred since 2012, the year in which pyrethrum processing was liberalised by the government's PBK (Pyrethrum Board of Kenya), introducing the possibility for international actors to become involved in "processing" the flowers and distributing the insecticide extracted from them.



The storehouse of Kenya PBK, the former government monopoly, where the pyrethrum is unloaded and dried.



The mosquito coils before they are placed in the furnace.



Marie Njoki, who has been deaf and mute since birth, lives in the village of Eburru on a farm with her father and sisters. Her job is to harvest the pyrethrum. In Kenya mechanisation is not possible because the plant is farmed in the hills.



The packaging department of Kapi LTD.



Grace is proud of her work and is very grateful to Kantegra for having revived pyrethrum farming. For local people it means future employment prospects and real social benefits for the entire community in Landi.



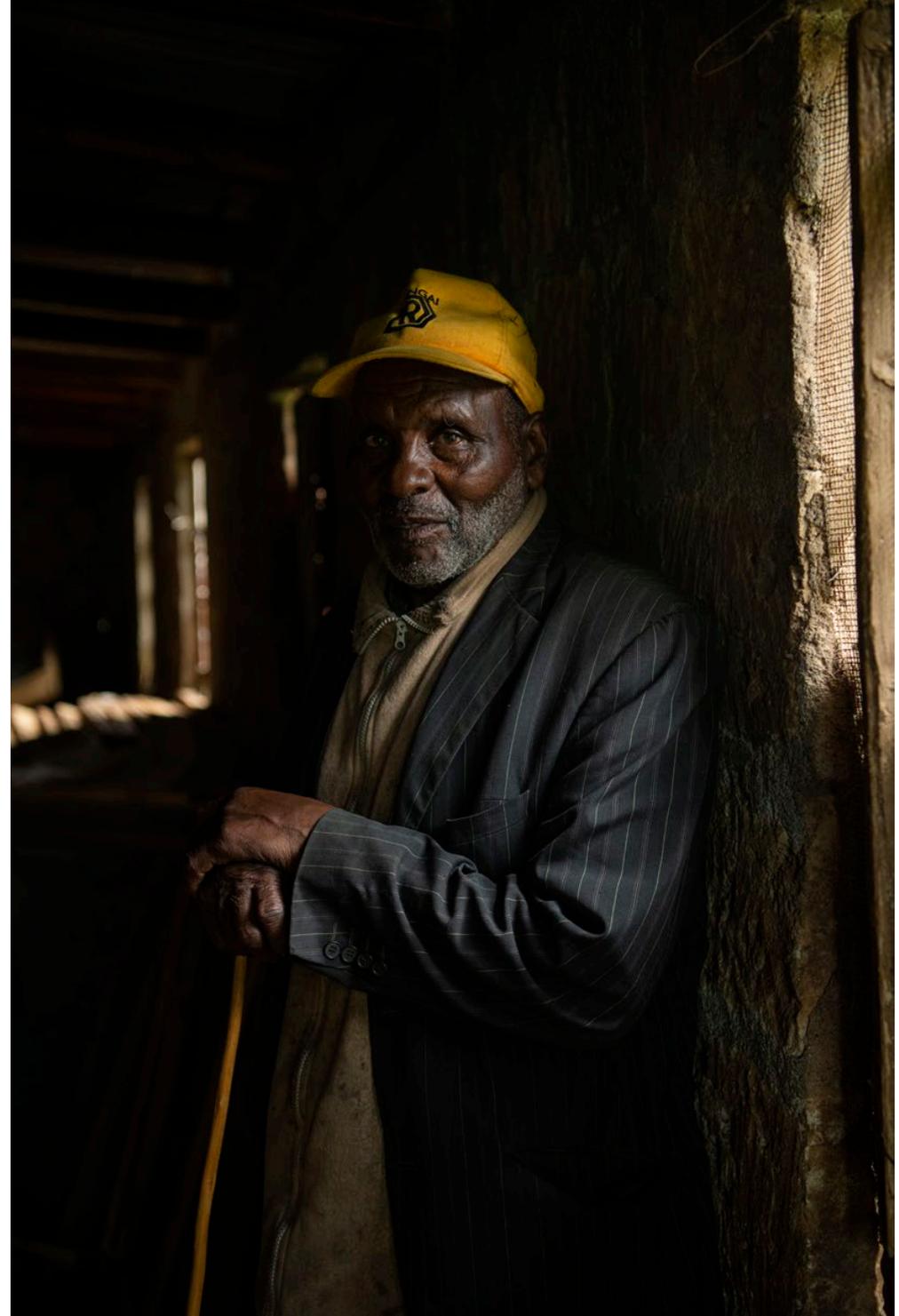
The main entrance to the Pyrethrum Processing Company, formerly the PBK.



Hundreds of mosquito coils are placed in trays and transported to huge furnaces for drying.



The pyrethrum flower, if untreated, has no effect on insects.



Jhon Kimani, an elderly farmer from Eburru. The harvested flowers are taken to a community centre and the pyrethrum is dried out in just 2 to 3 days, taking advantage of the heat produced by geothermal activity.



The extract from the pyrethrum processing is of great value and is stored in a sort of vault.



The Kentegra pyrethrum nursery, one of the private companies helping revive pyrethrum farming in Kenya. Agronomist Collins Militai and his assistant Grace Wangui.



The county of Nakuru is perfect for farming pyrethrum, both for the qualities of the soil and because it flourishes at altitudes of over 2000 metres. The pyrethrum grown above 2130m has a higher content of pyrethrin.



Dried and ground pyrethrum.



The nursery employs around 140 workers on piecework contracts.



Jhon Ngugi, a farmer from Eburro, prepares the grates on which to dry the pyrethrum. Beneath each grate is a tube funnelling the hot geothermal vapour that accelerates the drying process.



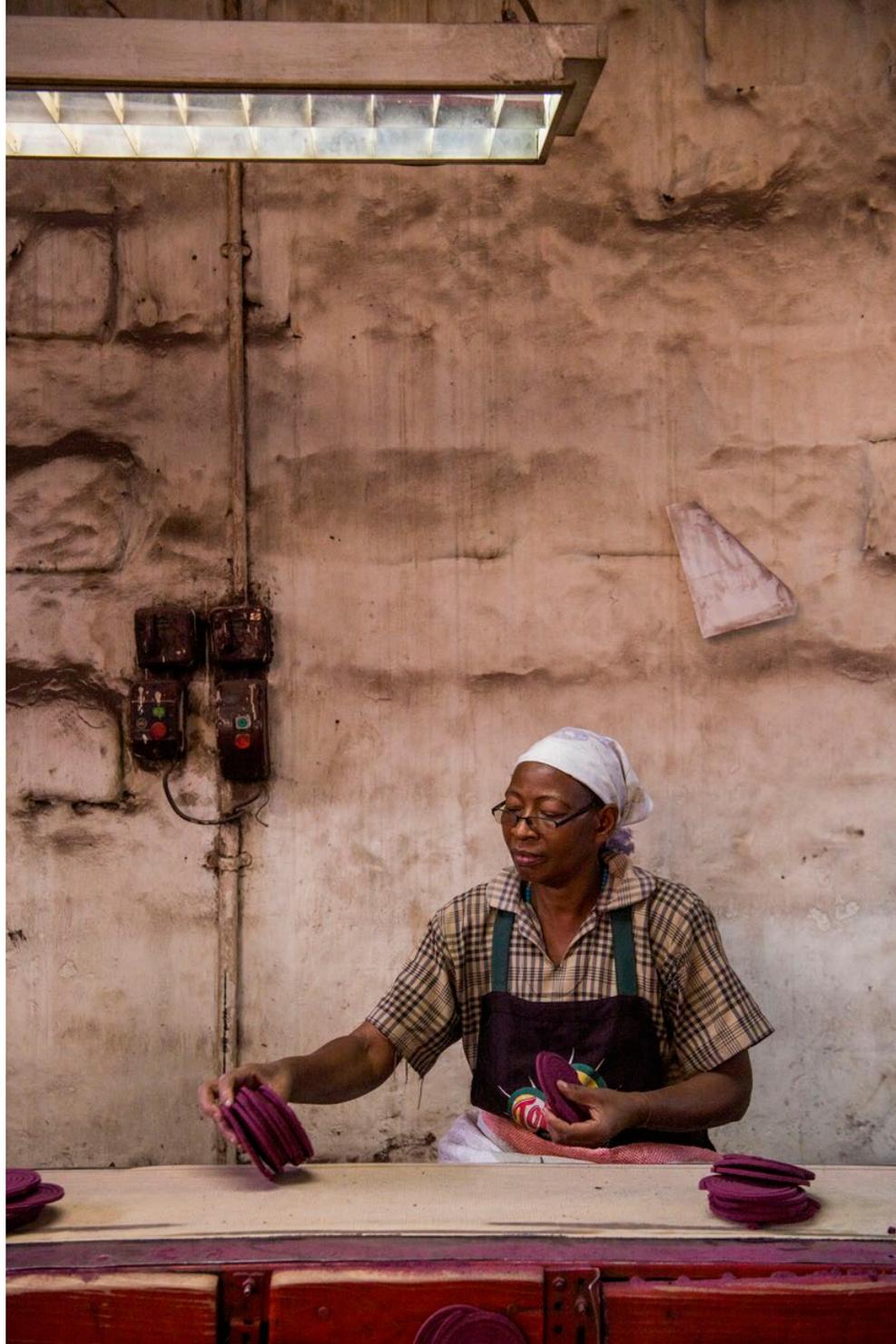
The production of mosquito coils. Although the process is mechanised, it requires a large number of personnel.



Posters for events promoted by the regional government to encourage the development of agriculture. The county enjoys a very particular climate and benefits from year-round rainfall.



The structure of the plant, with thin stalks and small leaves, means that they don't require constant irrigation.



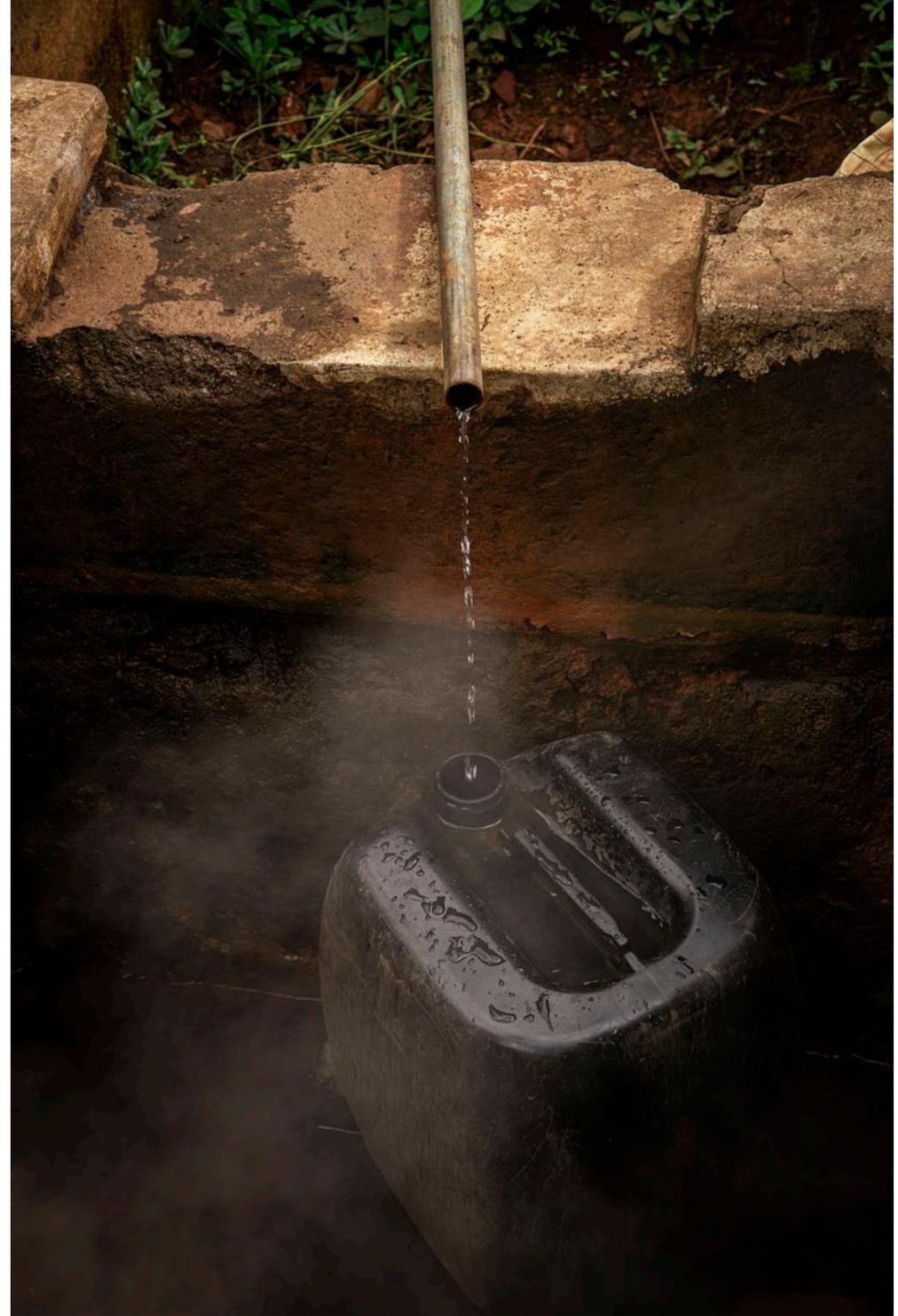
The packaging department for the purple coloured coils that are destined for the domestic market.



Mr Joseph W. Muigai, Managing Director of the Pyrethrum Processing Company of Kenya Limited. He has pledged to revive the pyrethrum sector, which has been struggling for years. The company has been through tough times following the arrest of the former general manager Paul Lolwerikoi for financial crimes and irregularities in the awarding of contracts.



Grace Wanjiru, born in 1934, is Eburru's oldest pyrethrum farmer.



The area of Eburru is subject to geothermal activity that provides tangible benefits to the area's inhabitants, in particular for the cultivation and drying of pyrethrum.



Alan Nyota, a former teacher from central Kenya. In 2015, after retiring, he moved to Nakuru to dedicate his time to farming pyrethrum. The new private players purchase the pyrethrum from farmers and pay them within a week.



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