



YOUNG SCIENCE COMMUNICATORS COMPETITION

2016/2017

ARTICLE CATEGORY

HIGHLY COMMENDED

Honey, please bee smart.

By Carla Dodd

It is no secret that South Africa is experiencing an extreme drought. Without a lot of tender loving care most gardens will have to be transformed into rock gardens, there are frequent fire warnings, and flyers are being distributed in a desperate attempt to drive home the message: “please use water sparingly.”

Most people, however, aren't too concerned. As long as there is water running over their grubby, little hands when they turn the faucet, all is well. Everything in society comes so easy that sometimes we forget where our resources come from and that a limit exists to the extent thereof. After one bout of rain the little guilt felt by society vanishes and the water restrictions are forgotten: swimming pools are filled, two showers a day becomes habit again and that leaking tap continues its dripping melody.

Ask any ten year old kid what the main constituent of the human body is and the answer would be “water”. It is as Terry Pratchett said: “Human beings: little bags of thinking water held up briefly by fragile accumulations of calcium.” It is concerning to realize how little respect humans have for water, and therefore themselves.

2016 marked the year with the lowest rainfall, in my twenty-two years of existence, in the Elands River Valley (hereafter ERV) where I grew up. Total precipitation in 2016 on our farm measured only

478 mm for the entire year. This is 66 mm less than the runner up (2005) and 295 mm less than the average rainfall over the twenty-two years.

Despite only being an hour drive from Port Elizabeth, ERV is not a well-known area of the Eastern Cape. Except for a few mountain biking and 4 x 4 enthusiasts, locals and tourists passing through to the Baviaanskloof, few people would be able to pin point it on a map. This farming community has many treasures to offer, of which the sweetest is honey. The bees work on a mixture of our indigenous fynbos and thicket and the alien vegetation Eucalyptus and *Acacia mearnsii* to produce tons of honey annually. In some instances apiculture is the main source of income to farmers, whereas others rely on pollination for their fruit farming.

The dominant bee species in this area is the African honey bee, *Apis mellifera adansonii*, also known as *Apis mellifera scutellata*. It is not only essential for the improvement in agricultural yields but also in the pollination of uncultivated plant species. Recent global declines in various honey bee species have driven dependent plant species to a similar decrease. In 2008/2009 the price of honey skyrocketed due to a widespread virus causing mortality in bees. ERV was one of the few unaffected areas. The aforementioned

decrease may be attributed to agricultural use of pesticides, loss of habitat, environmental pollution, the occurrence of pests and diseases such as the Varroa destructor mite, and of course, climate change.

However, in the case of national drought all are equal and many South African bee populations, caught in a vicious cycle, are experiencing extreme stress. Drought not only affects just about every plant process, but is usually also correlated with pathogenic attacks on plants. The compromised health and inhibition of e.g. flowering of plants during a drought has severe effects on pollinators such as bees. Decreased pollination leads to a further decrease in vegetation growth *et cetera, et cetera*.

As the ambassadors of the most intelligent species on Earth, humans need to accept responsibility for their actions. We need to realize that in the cosmos it is “one for all and all for one”. We are part of a much bigger picture, composed of small details, such as the health of bees. We are integrated in a large ecosystem and a simple act



Harvesting honey in the Elands River Valley. (Photo by Carla Dodd).

of thinking twice before you open a tap and showering only once a day can help alleviate the effects of drought. The next time a bee circles your head if you are trying to drink a can of Fanta, do not swat it but rather appreciate all it is doing for the human race. And please: “use water sparingly.”



Harvesting honey in the Elands River Valley. (Photo by Carla Dodd).

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About the Young Science Communicators Competition

The South African Agency for Science and Technology Advancement (SAASTA's) Young Science Communicators competition is an initiative that aims to encourage young scientists to communicate their world to the public, beyond their academic peer community.

It is one of a number of initiatives at

SAASTA aimed at developing science communication skills in scientists and researchers.

The competition awards four categories, namely: popular article; video clip; audio clip; and an open category. Participants are encouraged to explore their creativity in communicating their work.

For more information visit www.saasta.ac/competitions/young-science-communicators

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