Zimbabwe Plant Breeders Association

Innovative. Creative. Exceptional

NEWSLETTER

ZPBA Newsletter Issue 3 of 2019

IN THIS ISSUE

In the News

Upcoming Events

Emerging Issues

1. WHO IS ZPBA- Zimbabwe Plant Breeders Association

ZPBA is a **membership-based**, **not-for-profit**, **non-political**, **professional association** of Zimbabweans based locally or abroad active or interested in plant breeding and/or plant breeding-related fields (e.g. seed agronomist, seed inspectors, seed technologists, geneticists, germplasm conservation specialists, biotechnologists, molecular biologists, etc.) launched on the **26th of January, 2016** at Holiday Inn, Harare.

ZPBA hopes to contribute towards agricultural and industrial development in Zimbabwe through creating a platform for information exchange and sharing amongst plant breeders and related professionals, contributing towards policy dialogue, building capacity in both the public and private sector through relevant training.

ZPBA is governed by **an elected Executive Committee**, which **derives its powers** from the **membership** and functions through an **appointed Secretariat**.

ZPBA is legally registered as a **Trust** in Zimbabwe: registration number 1791/2018. The **ZPBA Board of Trustees** consists of the elected **Executive committee of the ZPBA** who are bound by the Trust Deed and the ZPBA Constitution.

Read more http://zpba.org.zw/

2. IN THE NEWS

2.1 Potential of Wild Okra (*Corchorus olitorius* L.) to contribute to food and nutrition security of Zimbabwean communities

Clemence MUITIRE*; Tatenda MAYAYA; Noel NDLOVU

**Contact: + 263 735 235258 ; muitireclemence@gmail.com*

Indigenous vegetables have received less research attention from crop scientist (Makobo *et al.*, 2010) yet they hold great potential to significantly contribute to food and nutrition security of communities due to their adaptability to the local climatic and soil conditions. Because of the little attention given to them, these vegetables are sometimes referred to as the neglected and underutilized species (NUS).

Picture by Doreen Badze

One such vegetable is Wild okra (*Corchorus olitorius* L.) a native vegetable to most African countries including Zimbabwe. Wild okra is a diploid plant with 2n = 2x = 14 chromosomes. It belongs to the Angiosperm family Tiliaceae (Osawuru *et al.*, 2013). It is commonly known as Derere in Zimbabwe, Krin in French (West Africa) and Mlenda in Swahili (Roy *et al.*, 2006). In most tropical African countries, the vegetable is widely found in the wild. This wild occurrence coupled with the large intra-species genetic diversity found in Africa, points to Africa as the center of origin of the species (Roy *et al.*, 2006). The vegetable has numerous types which vary in growth habits, leaf margins, leaf colour, leaf shapes, days to flowering, leaf length and width, number of leaves per plant and stem and petiole length.

Nutritionally, fresh leaves of the vegetable are reported to be rich in vitamin A and C (Ogunkanmi *et al.*, 2010), vitamin B1, B2, C, carotenoids and minerals (Adediran *et al.*, 2015), high levels of iron (Osawuru *et al.*, 2013), methionine rich proteins (Ogunkanmi *et al.*, 2010) and dietary fibre (Adediran *et al.*, 2015). Besides its leaves being consumed as relish, wild okra has been reported to have several other uses. It is used as folklore medicine for the treatment of tooth ache, gonorrhea, dysuria, chronic cystisis, pain, fever and tumors (Zakaria *et al.*, 2006). The seeds are used for treating fever and as a purgative; they possess broad antibacterial properties (Pal *et al.*, 2006). In some African countries, the plant is used as a source of bio-degradable and renewable lingo-cellulose fiber (Ogunkanmi *et al.*, 2010). Ecologically, the crop is reported to grow very easily in rural subsistence farming systems compared to other exotic species such as rape and spinach (Modi *et al.*, 2006). This trait makes Wild okra suitable for domestic production to ensure easy access and constant supply of the nutritious vegetable. With all these benefits, Wild okra deserves more attention from crop improvement scientist for full exploitation of the crop for food and nutrition security and income generation for African communities.

Key References:

Adediran, O. A., Ibrahim, H., Tolorunse, K. D., Gana, U. I. 2015. Growth, Yield and Quality of Jute Mallow (*Corchorus olitorius* L.) as Affected by Different Nutrient Sources. International Journal of Agricultural Innovation and Research. 3(5): 2319-1473.

Makobo, N.D., Shoko, M.D. and Mtaita, T.A. 2010. Nutrient content of Amaranth (*Amaranthus cruentus* L.) under different processing and preservation methods. World Journal of Agricultural Science. 6(6): 639 - 643

Modi, M., Modi, A.T. and Hendriks, S. 2006. Potential role for mind vegeatbles in household food security.A preliminary case study in Kwazulu – Natal, South Africa. African Journal of Food, Agriculture and Nutritional Development. 6:1-13.

Ogunkanmi, L.A., Okunowo, W.O., Oyelakin, O.O., Oboh, O.B., Adesina, O.O., Adekoya, K.O and Ogundipe, O.T. 2010. Assessment of genetic relationship between two species of Jute plants using phenotypic and RAPD markers. Int J Botany. 6(2): 107-111.

Osawuru, M.E., Ogwu, M.C., Ogbeifun, N.S. and Chime, A.O. 2013. Microflora diversity on the Phyloplane of wild okra (*Corchorus olitorius* L. Jute). Bayero Journal of Pure and Applied Sciences. 6(2): 136 -142.

Roy, A., Bandyopadhyay, A., Mahapatra, A.K., Ghosh S.K., Singh, N.K., Bansal, K.C., Koundall, K.R and Mohapatra, T. 2006. Evaluation of genetic diversity in jute (*Corchorus* species) using STMS, ISSR and RAPD markers. Plant Breed. 125: 292- 297.

Zakaria, Z.A., Somchit, M.N., Zaiton, H., Jais, A.M. and Sulaiman, M.R. (2006). The in vitro antibacterial activity of C. olitorius extracts. Int. J.Pharmacol. 2:213-215.

2.2 Selecting and Handling Seed Potato

Abraham MAKADZANGE, Research & Extension Agronomist – Matapiri Seed Sales

Contact: + 263 773 264140 ; abraham.matapiri@gmail.com

GENERALLY a "five percent rule" applies with potato seed lots. A seed lot with five percent or more total defects is too high to use.

Thus to determine the physiological age of seed potatoes, a farmer should gather samples, place them indoors and allow them time to sprout. Observe the sprouts that come from the sample to determine the physiological age of the seed. There are distinct stages through which potato seed passes.

Dormant Seed: *(right)*

If the potatoes do not sprout at all, they may still be in a period of dormancy. Most potatoes undergo a dormant or resting period. The length of dormancy varies with the variety. There are chemical and non-chemical means to break or greatly reduce the dormancy period.

Young Seed: *(left)*
Young seed is characterized by apical dominance. Young seed will have one or just a few sprouts. These sprouts emerge from eyes on the apical or bud end of the tuber. There is a strong, internal inhibitor that keeps eyes on the center and stem end of the tuber from sprouting. Eyes distant from the apical end may never sprout. Young seed will produce a plant with few stems. A low stem number leads to a low tuber set. Larger, but fewer, tubers would be expected from young seed.

Middle-aged Seed: *(right)*
Middle-aged seed will have multiple sprouts. All the eyes on the potato could sprout. There is no clear apical dominance; eyes from the bud end, the middle and the stem end will sprout. Middle-aged seed produces plants with multiple stems that lead to high tuber sets.

Old Seed: *(left)*
Old seed will have branched sprouts that can appear hairy. These sprouts are weak, and they will not produce a vigorous plant. Typically, plants from old seed will produce high tuber sets, but the plants lack the vigor to bulk the tubers to a desirable size.

Potato No Top/ Little Potato Disorder: *(right)*
Seed can be so old that small tubers form on the sprouts once they emerge from the eyes. “Potato No Top” is the name given to this disorder of extremely old seed. Seed with “Potato No Top” disorder should not be used. Any stress during the growing season produces potatoes that are physiologically older than those grown without stresses.

Seed Treatments

Chemical seed treatment is often used as insurance against disease. Chemical seed treatment is recommended if seed is to be planted in very wet, very dry or very cold soils.

Planting Quantity per Hectare

The quantity of seed required per hectare depends on the average seed size and the seed spacing. Larger seed has been shown to produce bigger yields in some varieties. Bear in mind, however, that many other factors besides seed size and physiological age of the seed determine the final yield. These include soil temperature at planting, accuracy of the planter, soil moisture, fertility and diseases.

2.2 EVENTS HIGHLIGHTS

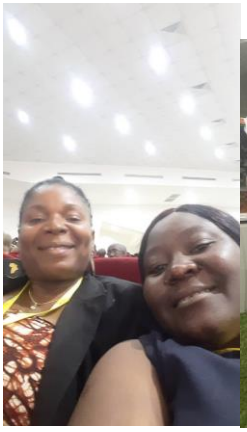
African Plant Breeders Association Launching Conference

23-25 October 2019 in Accra Ghana

‘Harnessing Genomics and Modern Breeding Tools for Food & Nutrition in Africa’

In pictures



3 UPCOMING EVENTS

3.1 ZPBA 2020 Congress and Ordinary General Meeting 29-30 January, 2020 at UZ Crop Science Dept.

NOTICE OF 2020 ZPBA CONGRESS

THEME: Addressing Fall Armyworm & other emerging issues

Activities

1. The Fall Armyworm training workshop for breeders

- 29-30 January, 2020
- Focusing on Understanding the pest in Zimbabwe, Breeding and screening germplasm for FAW host plant resistance, Sharing local information
- Touring CIMMYT screening facilities
- **Registration fee of Z$250.00 for paid-up members; Z$350.00 for the rest**

2. Ordinary General meeting of ZPBA

In accordance with section 6.2 of the ZPBA Constitution, Notice is hereby given for the Ordinary General Meeting on Thursday 30th January, 2020 (approximately from 14:00-16:30)

On the Agenda

a. Ordinary Business:

- President Report
- Treasurer Report
- Review of member subscription rates
- Election of Office bearers for the period 2020-2021 (section 5 of ZPBA Constitution)
- Selection/ nomination of 2022 Congress organizing committee.

b. Special Business (send requests by 16 January, 2020)

3.2 Workshop 'Fall Armyworm control: challenges and opportunities for the use of biopesticides' 9-11 September 2020 Cape Town South Africa. For more details visit https://www.icgeb.org/fall-armyworm-control-workshop/

4 EMERGING ISSUES

4.1 Horticulture breeding & seed production- Now there is the Horticulture Development Council whose effort is to grow horticulture sector and here are a few issues to reflect on. Is horticulture well supported in terms of local variety development and seed production? There are claims that some of Zimbabwean local vegetables (eg Black jack, Amaranth, Spiderflower), fruits and flowers (eg flame lily) have export markets **BUT** there is a lack of improved varieties. The current curricula at institutions of higher learning- how well do they support horticulture breeding and seed production sector?

4.2 **Bio-fortified crop varieties-** Of late the world over, including here in Zimbabwe, has witnessed the release of bio-fortified varieties for several crops. Do we see these nutritional components become main attributes such that in future each new variety should have a minimum level of a given component, eg iron content, zinc content etc.

4.3 **Supporting the Livestock industry-** Given the competition between humans and livestock for limited locally produced maize (mealie-meal) and soybean cake (soya chunks, processed foods), the feed industry is very keen to see active development and promotion by plant breeders of cheaper alternative crops (e.g low-tannin sorghum to replace maize, oil-rich groundnuts & sunflower for cake) or special stockfeed, fodder and pasture crops and crop varieties. Furthermore seed of fodder and pasture crops is currently not readily available.

SHARE YOUR THOUGHTS zimplantbreedersassociation@gmail.com / +263 784 618719

5 ZPBA MEMBERSHIP

4.1 Membership benefits include

Professional and personal development; **Shared costs on human resource development**; Networking; **Timely Communication (especially for events, internships, job vacancies, scholarships)**; Voting rights; **Discounted rates for events**; Sense of pride in the profession and industry

4.2 Membership Fees

Thank you to members who continue to pay their subscriptions as well as those who support fundraising initiatives. Your contributions make it possible for your association to keep going.

NEW RATES will be advised after the 2020 ZPBA Ordinary meeting.

4.3 Come work with us

- ZPBA has a platform for information exchange amongst professionals & business, for enriching and respectful discussions, and for contributing towards policy dialogue. Plans are to host at least four meetings annually. Contact if you wish to give or sponsor a presentation
- Sponsor an event or award on the ZPBA platform: The event can be a seminar, a lecture, a public debate. It can be company branded or in honour of your outstanding product or personality etc. It can be a motivational tool, use it to recognise excellence
- ZPBA can be a platform where ideas are tried, tested, incubated and come to life. ZPBA promotes a culture of research freedom conducted within the laws of Zimbabwe. Individuals can seek their funding and conduct their research on ZPBA platform. ZPBA can conduct studies/ research in the interest of its members, results of which members are free to adapt to their specific situation. ZPBA offers incubation platform if you have an idea you want to try out
- ZPBA offers a mentoring platform. For the retired, you can remain active and mentor young professionals
- ZPBA can provide services as requested by their membership- open for suggestions

6 ZPBA CONTACT DETAILS

ZPBA mobile phone: +263 (0)784 618719 (send your name if you want to be on the ZPBA WhatsApp group)
ZPBA email: zimplantbreedersassociation@gmail.com
ZPBA website: http://zpba.org.zw/