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2017: A Unique Year

By Hannel Ham

2017 (MMXVII) started on a Sunday (dominical letter A) of the Gregorian calendar and is the 2017th year of the Common Era (CE) and *Anno Domini* (AD) designations. It is also the 17th year of the 3rd millennium, the 17th year of the 21st century, and the 8th year of the 2010's decade.

2017 is unique as it is not only a prime number, but the 306th prime number. The previous year known as a prime year was 2011 and the next one will be 2027. There are only two divisors in 2017 (1 and 2017) that when added together equals 2018. Furthermore, it is not a Fibonacci, Bell, Catalan and regular (Hamming), nor a factorial of any number. The number 2017 is a deficient number because the sum of its proper divisors is less than itself. Its deficiency is 2016. The Binary numeral of 2017 is *11111100001*, the Octal numeral is *3 741*, the Duodecimal value is *1 201*, the Hexadecimal representation is *7e1*, the square is *4 068 289*, the square root is *44.911*, and the scientific notation is 2.017×10^3 .

Fun facts are that 2017 seconds equals 33 minutes and 37 seconds. If you count from 1 to 2 017 it will take approximately 33 minutes. This is only a rough estimate based on a speaking rate of half a second every third order of magnitude. However, involuntary pauses or bathroom breaks were not included in the calculation! Also, 2017 backwards is 7102, it has 4 decimal digits and the sum of the digits equal 10. The 2017th prime is 17 539. Some insects (for example the Cicada) will live in the ground for a number of years, and will emerge after 13 or 17 years. As 13 and 17 are prime numbers, it makes it harder for predators to adapt and kill the insects, increasing survival rate. Because of interesting occurrences like these in nature, prime numbers are used in Cryptography, generating hash numbers and pseudo-random number generation.

2017 has been designated as the International Year of Sustainable Tourism for Development and ties in with Forestry. May 2017 be a very special year.

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Special Gems of Forestry 2017

The SAIF, through the contributions of Hannel Ham, continue the series of interesting articles that examines the various indigenous and plantation trees of South Africa. This year we examine the eucalypts and continue with the indigenous trees. In January we examine *Eucalyptus grandis* and *Ziziphus mucronata* (our tree of the year for 2017).

Reminder:

Please communicate any changes of addresses
or other contact details to Corine at
saif@mweb.co.za

Fun Facts: Special Gems of Forestry: January 2017

Ziziphus mucronata: Rhamnaceae Family (SA no. 447)

Common name: Buffalo-thorn, blinkblaarwag-‘n-bietjie, umPhafa, umLahlankosi, mokgalo

TREE OF THE YEAR 2017

Ziziphus originated from Greek (*zizyphon*), Arabic (*zizouf*) and Latin (*zizyphum*). The species name *mucronata* is Latin and refers to the stipular thorns or the apex of the leaves. The Afrikaans name (wag-‘n-bietjie) is very descriptive of the small, vicious thorns that take time (wait-a-bit) to release from your clothes. Thorns are in pairs of two with the one facing backwards. The young twigs are zigzag and the tree is a hermaphroditic species. The family Rhamnaceae has 49 genera and 900 species. The genus *Ziziphus* includes approximately 86 species with *Ziziphus mucronata* being the best known. Another well-known species is *Z. mauritiana* (ber or jujube tree) because of the fruits which are often found in Asian food shops. Historic records indicated that Christ's crown of thorns was made from *Ziziphus spina-christi* Willd.

Habitat: distributed throughout the summer rainfall areas of sub-Saharan Africa, extending from South Africa northwards to Ethiopia and Arabia. It grows in areas dominated by thorny vegetation in both temperate and tropical climates, open scrubland, woodland, forest margins and riverine vegetation. *Ziziphus mucronata* is a very hardy species and resistant to frost, drought, seasonal waterlogging, salt spray and soil salinity. It can grow at an altitude of up to 2 000m,

with MAT of 12 to 30°C, MAP of 446 to 1 200mm and a variety of fine textured soils.

Allergies: unknown

Growth rate: can grow up to 20m but normally 3 to 10m tall with a growth rate of 4 to 6m in 4 to 5 years.

Pollinator: bees

Wood characteristics: yellow, fine-grained, heavy wood containing 12.2 to 15.7% tanning matter.

Uses: fruits are eaten fresh or dried with meal or porridge. Young leaves can be cooked and eaten as spinach, while seeds are roasted, crushed and used as a coffee substitute. *Ziziphus mucronata* is also a valuable fodder tree in drier areas as stock and game (giraffe, eland, kudu, sable, black wildebeest, nyala, impala, klipspringer, springbok, Sharpe's greysbok, steenbok, Damara dik-dik and warthog) relish the highly nutritious leaves and fruit. Beekeepers also consider this tree a valuable source of nectar. The wood is hard and makes good firewood and charcoal, while the termite-resistant wood is used for building poles and posts, live and dry fences, and for hunting and fishing weaponry. Whips and bows are made from saplings and from the flexible shoots. Thorny branches are sometimes used to make impenetrable kraals or fences. Roots are powdered and baked and can be used for almost any pain and to treat snakebite. The bark is used as an emetic, rheumatism, for stomach troubles and to treat coughs.

General: Africans have many beliefs and superstitions attached to this tree. Zulus and Swazis use the buffalo thorn in connection with the burial rites of chiefs (*umLahlankosi*). The tree can also keep evil spirits away from villages or houses. In Botswana and most parts of South Africa, it is believed to be immune against lightning, anyone standing under one in a storm would be safe. Furthermore, if it is felled in summer, a drought, hail or lightning will certainly follow. The species is easily raised from seed or cuttings.



Eucalyptus grandis: Family: Myrtaceae
Common name: Rose gum, flooded gum

There are more than 700 *Eucalyptus* species and most are native to Australia. Only 15 species are found outside of Australia. An estimated 500 of the 700 species can be used in plantation forestry. The generic name is derived from the Greek words *eu* (*eu*) "well" and *καλύπτω* (*kalýpto*) "to cover", referring to the operculum on the calyx that initially conceals the flower. *Grandis* is Latin and refers to full-grown, large, great, grand, tall, lofty and powerful.

Native: it grows on the eastern coast of Australia, tolerating sandy through to heavy clay soils. It stretches from Newcastle on the New South Wales central coast to Bundaberg in southern Queensland. Smaller stands of rose gum occur to the west of Mackay on the central Queensland coast and in pockets in the ranges from north west of Townsville to west of Bloomfield in far north Queensland.

Growing conditions: it occurs on flats or lower slopes of deep, fertile valleys or often fringing rainforests, but prefers moist, well-drained, deep, loamy soils of alluvial or volcanic origin.

Allergies: occasional sneezing from the wood dust.

Growth rate: a fast grower that can grow between 30 and 55m tall with a trunk diameter of 1.2 to 2m. A very productive commercial plantation species.

Wood colour: heartwood ranges from pink to reddish brown, while the sapwood is distinctly paler. It is usually straight-grained or shallowly interlocked, with a uniform medium to coarse texture.

Wood odour: no characteristic odor.

Uses: although *E. grandis* experiences a large amount of shrinkage during drying, it is fairly easy to work with. It also glues, stains, and finishes well when used in flooring, millwork, furniture, and boatbuilding. *Eucalyptus grandis* is a popular plantation species worldwide for plywood, particleboard, paper pulp, charcoal and fuelwood. In Australia it is mainly harvested from natural stands for panelling, sawn building timber, flooring, joinery, furniture and general construction. However, variation between provenances in growth performance, frost tolerance and climate adaptation have been documented.

General: the tallest tree is over 75m. The timber is rated durable to very durable but not termite resistant. To increase disease and insect resistance, it is hybridised with species like *E. urophylla*. It has apiculture value (honey) and is slightly salt tolerant. *Eucalyptus grandis* is drought sensitive, has windbreak potential, has high carbon sequestration potential and regenerates after fire damage.

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The Dedicated Service Award of the Southern African Institute of Forestry Awarded to: Sally Upfold

We all know Sally as being one of the vital cogs in the ICFR machine. As the Knowledge Manager at this great institution, she has job responsibilities that would easily disorientate and distract many people. Sally remains focussed on her task at hand, yet also deals smoothly and efficiently with the many other requests and responsibilities that the forestry industry throws at her. In this busy schedule, Sally still finds the time to serve the SAIF, and manages to prioritise the SAIF's needs. The SAIF KZN branch is the SAIF's largest and most active branch. The benefits of having a large member base and being in close proximity to Pietermaritzburg are offset by the performance expectations placed on you once you are nominated to the KZN committee, and even more so when assuming the branch chair position. Under Sally's leadership of the branch, it continued to grow in strength and professionalism. The new insights that Sally brought to this committee and the way that she managed her team resulted in a shift in branch operation to a more modern operating style which valued the importance of participation, collaboration and partnerships. One only needs to examine the high quality of the branch events over the past few years to see the impact that Sally and the branch has made.

The same energy seen in her branch contributions was and is witnessed on Council as well. Sally's contribution to the editing and conclusion of the Forestry Handbook was invaluable. She has also played a critical role in establishing a framework for future SAIF publications and assisting the SAIF take a path forward into a new generation of "publications" that will more effectively serve the needs of the new forestry practitioner. Besides this, she has carried out many other functions, and one is almost hesitant to name them in case some are left out! Two very important aspects that she dealt with was the oversight of Southern Forests

for Council, a publication which continues to go from strength to strength; and representing the SAIF on the Local Organising Committee of the World Forestry Congress. Besides these direct Council activities, Sally's involvement in the establishment and organising of the now very successful and popular ICFR Science Symposium; her organisation around the IUFRO/ICFR symposium at the WFC; her general organisational activities at the WFC and her specific organisation of the South African Forestry stand at WFC must be specifically mentioned. Sally was requested to remain on Council has a co-opted member when her term as KZN branch chair had passed. The SAIF is very appreciative of her willingness to continue to serve the SAIF in this capacity. Her intimate involvement with some of the burning issues at the SAIF made this very important, and she had no hesitation to indicate that she is willing to serve professional foresters in this capacity if it she can add value to them.

The SAIF expresses great appreciation to a lady who is willing to keep the SAIF as a priority amongst many other matters of high priority.



Have you been earthed yet?

By Rob Thompson

Towards the end of last year, I listened to a radio programme presented by the well-known and informed naturalist, and past forester, Dave Pepler.

Dave emphasised the need for people to take the time to become earthed (or ge-aard in Afrikaans). His theory is that given the hustle and bustle of modern life, along with its attendant hi-tech and so called connected nature, people are generally becoming disconnected, albeit, that they remain unaware of this. The discussion he led, is made all that more relevant given that many of us are returning from a well-earned end of year break. I felt it appropriate and opportune to share the underlying message with you as we move into 2017.

With literally everything being on line, thumb strokes are literally taking over the spoken word. We no longer need to worry about sore throats, however, carpal tunnel syndrome does present some deal of concern. Why talk when you can send each other emoji's even though you may be seated in front of each other? On the rare occasion that an old fashioned verbal conversation does occur, the monotony thereof is thankfully broken repeatedly by ones cell phone announcing that your stop orders are going through or that importantly, a dog in Russia has learnt to play the piano whilst seated on a bar stool.

When one builds a house, particularly in a lightning stricken area, it is always a good idea to earth the building to divert electrical currents away and prevent damage to the structure. Dave's contention is that the (unnecessary) on line information overload that we willingly embrace every day, is akin to a lightening-storm beating away at our own structure. We start to lose the sense of self. Our creativity wanes and

the functionality of our own structure is left severely compromised.

The sooner that one recognizes the jeopardy one faces, the sooner an 'earth-ing' mechanism can be put into place. As forestry practitioners we are in an ideal position to earth ourselves. Of course this does not infer that we carry around an antenna, which, after all, would look somewhat arbitrary when attending a management meeting or doing a field inspection. What we are advised to do however, is regularly and purposefully remind ourselves of the textures and wonder of our natural surroundings.

Take a break from the cell phone and computer and study your surrounds with a renewed and inquisitive perspective. Instead of just driving the bakkie from point to point, get out and go for a short walk. Take time to appreciate the environment within which you operate and embrace the smells and sights and textures it provides. Your field audits should deviate now and again from strict adherence to the inspection template to once again focus on the natural wonders that we tend to overlook daily. Picking up a handful of soil, a close up inspection of the bark on a tree, taking a photograph of an attractive scene from a unique point of view or crushing a leaf to accentuate the scent it contains are all examples of means to earth oneself.

We are all fortunate to be working in or with access to forestry areas. Many city based folk have to go on holiday to experience just some of which we are exposed to every day. As we ease back into the 2017 working environment, perhaps the most telling resolution we can make is to appreciate that which we do? Having done so, share the experience with someone directly and leave Facebook for another day.

Find your own way to discover your sense of self again in 2017.

The Commonwealth Forestry Association Young Forester Award 2017

As part of the Commonwealth Forestry Association's commitment to supporting the professional development of young foresters we are pleased to announce the launch of the CFA Young Forester Award 2017 in conjunction with the Faculty of Forestry at the University of British Columbia.

The CFA Young Forester Award provides a short-term work placement of three months hosted by the University of British Columbia at their Malcolm Knapp Research Forest, between September and December 2017, where the successful applicant will be able to develop their practical skills. The Award covers flights, accommodation, local travel, subsistence costs and a small bursary to cover the period of the placement.

Eligibility criteria

Applicants must:

- Be a national of a Commonwealth country.
- Hold a forestry qualification.
- Be below 35 years of age on 1st January 2017.
- Be able to travel to Canada and apply for a Canadian Study Permit.
- Hold a valid driving licence.

Application process

The Application Form below should be completed and submitted via email to cfa@cfa-international.org by March 15th 2017. The application form can be requested from the above email or from Corine Viljoen at saif@mweb.co.za. The following information must also be sent at the same time:

- An essay of at least 400 but no more than 500 words explaining why you are applying for the CFA Young Forester Award.
- A Curriculum Vitae/ Résumé of no more than two pages.

Short-listed candidates will undergo a Skype interview.

TPCP field trip to Mpumalanga

The TPCP will be in the Lothair to Sabie area on 24 and 25 January. If there are any pest / disease sites that you would like them to visit (including collecting samples to take to the TPCP Diagnostic Clinic), then please contact Brett Hurley on 0829093211 or brett.hurley@up.ac.za

Short Course: An Introduction to Modern Tree Breeding

Prof Steve Verryn will be presenting this short course. He has championed many tree breeding courses over the years, both in South Africa and abroad. These courses have drawn people from over 130 countries. The courses have ranged from general introductory courses to specialist tree breeding management, BLUP and genetic gains modelling courses.

This course will be a week long introductory course in tree breeding, with special emphasis on modern technologies which are finding their place in Tree Breeding. The course will draw on skills from the South African industry and universities.

The content includes:

- Introduction to Quantitative genetics
- Introduction to breeding strategies
- Introduction to Selection and BLUP
- Genetic gains
- Trial designs
- Molecular genetics and tree breeding
- Pests and diseases and tree breeding
- Wood properties and tree breeding
- Tree breeding and Data management
- Vegetative propagation and tree breeding
- Transformation: GM and polyploidy

Practical sessions will be included. The course will be held in Pretoria, South Africa and will run from 28th August - 1st September 2017. Contact Steve Verryn at SVerryn@CreationBreeding.co.za or telephone +27 83 652 5719 for more information or a registration form.



SAIF contact details

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December 2016/early Jan 2017 birthdays

03-Jan	J.R. BALLANTYNE	16-Jan	S. PAY
03-Jan	S.N. NJAMELA	16-Jan	T. NYAMBIYA
06-Jan	J.H. MORTIMER	17-Jan	L.R. CUNNINGHAM
06-Jan	W.J.A. LOUW	18-Jan	J.J. ERWEE
08-Jan	W. KOTZE	18-Jan	D. LÄNGIN
08-Jan	D. Roothman	18-Jan	J.W. POTGIETER
08-Jan	P. KRUGER	20-Jan	E.C.L. ADE
09-Jan	C.H. NORRIS	21-Jan	C.A. SEELE
10-Jan	T. SWAIN	21-Jan	S.T. DYER
11-Jan	J.E.F. BADENHORST	21-Jan	D. LANE
11-Jan	P. ODELL	24-Jan	G.W. BURNHAMS
12-Jan	D. DOBSON	25-Jan	J.H. SCRIBA
12-Jan	D.B. VERSFELD	25-Jan	L. VAN VUGT
13-Jan	P.E. VON BUDDENBROCK	26-Jan	R.B. MULLER
14-Jan	L.W. TITSHALL	29-Jan	T.G. KACHALE
15-Jan	F.S. MALAN	30-Jan	A.C. MKWALO
16-Jan	F.M. EGGERS	30-Jan	P.J. TRUTER
16-Jan	A.E.P. DROOMER	31-Jan	J.N. SWART
16-Jan	G. HOOGHIEMSTRA	31-Jan	R.T. LIVERSAGE