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report

Alan Short

KZN Department of Agriculture and Environmental Affairs

Email: Alan.Short@dae.kzntl.gov.za

The Congress was attended by about 200 delegates from eleven countries, including several African Countries, the United States and Australia. The width of topics presented was enormous, and it was often difficult for delegates to choose between two equally relevant parallel sessions. The Congress was a mix of workshops, symposia and “ordinary” sessions, with many different institutions and fields of study represented.

Themes

The theme of the Congress was Range & Forage Science in a Developing Environment. The Mayor of Bela-Bela presented the opening address on behalf of the MEC for Agriculture in Limpopo province, Mrs DP Magadzi, who was unfortunately ill on the day. She spoke eloquently about the need for advancements in agricultural science and technology as a cornerstone of development in this country.

The first of three keynote addresses was presented by Prof. Sam Fuhlendorf, of Oklahoma State University. Prof. Fuhlendorf was one of

two American researchers invited to the Congress to provide some insight into the recent paradigm shifts on fire and grazing management that have emerged from their long-term trials. Prof. Fuhlendorf has an impressive publication record (about 36 peer-reviewed papers and 20 book chapters), despite his relative youth. He presented a fascinating account of his work on heterogeneity in North American Tallgrass Prairies, and how this impacts on rangeland structure and functioning (positively) and animal production (no difference or better than traditional burning and grazing practices).

Some of the major sessions will be highlighted below.

Invasive Plant Management

The South African Weed Science Society and the GSSA held a joint symposium on “Invasive Plant Management” on the first day of the Congress. The second keynote address of the Congress was by Prof. Dave Richardson, on the invasion ecology of riparian vegetation. A number of very interesting papers were presented, on biocontrol and integrated

weed control, as well as some papers on the ecology of plant invasions and the implications of this for control of invasions. A number of key concepts emerged from the symposium: (1) that no single control method is effective alone; (2) that a wider landscape approach needs to be used to manage plant invasions, and that single-species control measures are inadequate for managing plant invasions; (3) that plant invasions have major effects on the ecology of rangelands and riparian areas, switching the ecosystem from one state to another, and simply clearing the invasions will not automatically cause the system to switch back to its former state; and (4), that we need to understand more about the ecology of plant invasions in order to effectively prioritise control strategies and efforts.

Long-term research and monitoring

A symposium on long-term research and monitoring was arranged by Prof. Winston Trollope of Fort Hare University. This symposium generated a great deal of discussion, both during the session and around the dinner table afterwards. Several presenters gave summaries of a few of the “Ecological Gems” as Prof Trollope called them, of Southern Africa – long-term research trials that have contributed enormously to our understanding of key processes in veld ecology. These trials have formed the basis of many of our current veld

management recommendations, and we are still gaining new insights from them. In many cases, the original questions have changed, and issues such as climate change, soil processes, and biodiversity, as well as other key ecological processes that affect production, are being investigated.

The third keynote address was by Ron Masters, Director of the Tall Timbers Research Programme in the USA. The Tall Timbers research programme is a private, non-profit long-term fire research programme that has generated enormous amounts of data, and fascinating insights into the role of fire in savannas and grasslands of the southern USA.

A number of questions were raised by the symposium (1) have long-term trials been useful; (2) should they continue; and (3) do we need new ones? The answer to all three questions was an overwhelming “yes”, for a number of reasons:

Short-term changes may be misleading: many long-term trials have shown fluctuations in key responses within short time periods, but with a very clear long-term trend (e.g. increasing or decreasing abundance of a certain group of important species).

Key variables may respond in one direction for some time, and then suddenly change direction as the system reaches some threshold and changes. Such as response was shown in the plots protected from fire at Ukulinga. For the first

twenty years, a key grass, *Tristachya leucothrix*, increased, only to suddenly begin decreasing and then almost disappear after fifty years. Had the trial been discontinued after twenty years, this response would never have been observed. Similarly, in the Towoomba long-term grazing trials at Bela-Bela, bush density was not even considered important enough to measure for the first thirty years, and then suddenly and dramatically increased after some forty or fifty years.

New questions are being asked that were not thought of at the time the trials were established. One of the most obvious examples is the effect of climate change on productivity and sustainability of rangeland systems.

But there were certain caveats.

Poorly designed trials should not be dragged on indefinitely; Ron Masters had two trials shut down because they were poorly conceived and designed.

Following on from the first point, new trials must be properly designed – far too many long-term trials have been poorly designed from a statistical perspective, making it very difficult to tease out the interacting effects of soil, grazing, fire and climate on the results.

New trials must address specific questions that have not been adequately addressed by past or existing trials. It is too easy to set up yet another “continuous vs. rotational grazing” trial, when there are many existing trials to address these is-

sues.

Appropriate measurements must be taken on these trials – too many existing trials have had inadequate or inappropriate surveys and measurements taken to really address the key issues they are meant to address.

Long-term trials, in combination with specific, focused studies, provide valuable insights into the sustainable management of our natural resources.

South African Ecological Observation Network

Dave Balfour presented a talk on the South African Ecological Observation Network, SEAON, which was established as part of international efforts to coordinate ecological research and monitoring. The Kokstad Grazing trials have been registered on the SEAON database, which is still under construction (see Pauw and Peel (2003) and Mecenero (2005) for more background on SAEON). The SEAON initiative will consist of a series of nodes, based in each of the major biomes of South Africa. The Savanna node has been established in the lowveld, and many of the other nodes are well on their way to being established. The Grassland node will probably be established somewhere in KZN, although a hosting institution has not yet been confirmed.

Forage production and quality and animal production

A number of sessions addressed forage production and quality, both on veld and pastures. New results were presented from cultivar evaluation trials and from grazing on pasture trials. One thing that is of major concern is the shortage of new pasture research in the country. Cultivated pastures are a multimillion Rand industry and the backbone of a significant proportion of the livestock industry, and yet there is less and less investment from the various research institutions into cultivated pastures. The GSSA will be having discussions on how to get the industry more involved in the next Congress in Grahamstown, in order to try and address some of these concerns.

Erika van Zyl, Animal Scientist at Dundee Research station, presented the results of several years of research into grazing maize with sheep, including maize alone and maize in combination with other crops. The economics of grazing maize, rather than harvesting it and feeding, are quite profitable. A portion of the maize can be planted and grazed, if need be, while the rest is harvested and marketed as a cash crop. The most economical, and simplest system, was to graze maize alone (i.e. not in combination with other crops).

Erika presented two other papers on animal production from veld and pastures: an examination of

early weaning of beef calves, and a study of the value of foggaged forage sorghum for young beef animals.

CB Katongole and co-workers from Uganda (presented by Elly Sabiiti) presented the results of their work on developing feeds for meat goats. Goat meat is commonly eaten in Central Africa, and many strategies for feeding goats have been developed. Amongst them was using the scraps from the market place as an inexpensive source of feed. The goats were being feedlotted on these marketplace scraps very cheaply and successfully.

Joseph Baloyi and colleagues worked on legume hays for improving animal production on veld, especially during critical times. They presented the results of work on cowpeas, fine stem stylo, and silverleaf desmodium supplemented to sheep fed veld hay. The dry matter intake of the sheep was highest when fed cowpeas.

National Range and Forage Working Group

The National Range and Forage Working Group was established at a workshop in Pietermaritzburg in November 2005 (Morris 2006). The Working Group is coordinated by the National Department of Agriculture, in collaboration with the various provincial Departments. The workshop at Congress was facilitated by Victor Musetha of the National Department of Agriculture. The aim of the work-

shop was to coordinate research efforts in the different biomes of South Africa, to improve veld and pasture management recommendations in the country. The agricultural research capacity in the country has deteriorated severely over the past decade, and the National Range and Forage Working Group is an attempt to address this issue through coordinating existing resources and efforts nationally. A committee was elected, consisting of a representative from each rangeland biome in South Africa (Grassland, Savanna, Karoo etc).

Rangeland Management, Communal Livestock Production and Rangeland Fire Ecology

Rangeland management under fire and grazing was very well attended, and the presentations raised a great deal of discussion from the audience. A number of papers examining the mechanisms of key ecological processes, and the implications of this for veld management, were presented by researchers from a wide range of southern African environments.

Erika van Zyl presented a fourth paper on communal rangelands, asking the question "Do planted pastures have a place in communal farming?". Research indicates that communal farmers already rely heavily on supplementary feeds during winter, but that the quality of the feeds varies enormously depending on the source. Successful pasture

management programmes are constrained by lack of fencing and absence of fertiliser programmes in communal areas.

Cam MacDonald and co-workers presented a paper discussing fodder flows in communal livestock production systems. Small-scale farmers can benefit hugely by strategically supplementing their animals during critical periods. Strategic forage supply can enable communal farmers to gradually change from being "livestock keepers" to "livestock producers". "Livestock keepers" are owners of livestock that do not necessarily earn any income from their animals, while "livestock producers" are farming their animals – in other words, earning an income from the sale of animals and animal products. This can be achieved by involving the technical staff working in that area. Demonstrations of different technologies are very powerful educational tools, and inspire farmers to follow suit.

There were a number of papers discussing various issues around rangeland assessment and monitoring. Several papers looked at new, rapid or remote methods of rangeland assessment and carrying capacity estimation. Herman Fouché and WJ van den Berg presented a new application of the PUTU model of veld production, in a GIS environment, to enable predications of seasonal carrying capacities in arid and semi-arid areas. Theunis Morgenthal and TS Newby of the Institute for Soil, Climate and Water presented

an update of the carrying capacity map for South Africa (which was last updated in 1993) using coarse resolution, cheaply available satellite imagery and vegetation information. The resulting map was an update on the 1993 map, as well as filling in the blank spots left on the previous maps where the former homelands are located. The map appeared to somewhat overestimate carrying capacity in some cases, but it is a very useful first approximation and a potentially powerful planning tool for the future.

Rob Scott-Shaw, of Ezemvelo KZN Wildlife, has been working for several years on developing indices of grassland importance for conservation planning, using well-established ecological formulae as simple tools to rank patches of veld in terms of their ecological importance.

One very topical paper was presented by Lee Simons and Nicky Allsopp, on use of key resources by communal livestock farmers in the Richtersveld. In this area, animals are herded, and the herders utilise a number of different resources at different times of the day and in different seasons. This means that, although large areas of the veld have been severely degraded by decades of heavy grazing, there are still refugia such as steep koppies where the veld is in good condition. These koppies are less heavily grazed most of the time, but form important drought reserves. One interesting point is that the farmers' lands are

not used by the animals until after harvesting, because the herders can keep the animals under control and away from the lands while the crop is growing.

The real stuff

The *faux pas* award was deservedly won by John Peel, who appeared to have not yet entirely entered the information age when he was distracted several times by the unmistakable sounds of a particularly excitable bushveld coming from his shirt pocket during someone's talk. The bushveld, was, of course, his new cellphone, which apparently had been programmed (probably by a five-year-old) not to be switched off in the middle of important speeches.

Every year, the Peter Edwards Award for conservation farming is awarded to a farmer in the province where the Congress is held. The farmers must have practiced outstanding conservation farming principles through sound veld and soil management, as well as sound general farm management. This year, the competition was tough, but in the end the private game farm Thaba Thola deservedly won the award. The Congress organizers put together a superb slideshow to illustrate the hard work that the owners and the manager, André Neethling, had put into the property over many years.

Conclusions

The above discussion represents



Anushka Barak

Above: John Peel gets closely acquainted with the *faux pas* award

only a small proportion of the papers presented at the Congress, as the amount and the depth of the material covered was enormous. ecology and pasture production. More importantly, the “after-hours” discussions are where many valuable ideas are thrown around in an informal setting, and where inspiration for new projects is born.

It is disturbing that so few extension officers attend Congresses such as the GSSA Annual Congress. The new technology and ideas that are presented and discussed there are valuable tools that the extension officers can take back to their clients. Extension officers are often working under extremely difficult conditions, with little contact with other experts

in their fields, and the contacts that they make at such congresses are therefore invaluable to the development of their expertise, just as it is for researchers. Moreover, the extension officers have practical experience of the difficulties encountered in the field, and can make valuable contributions to the direction of future research.

References

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