

CHAIRS' SUMMARY PAPER: Seed Production and Management - Tropical

M.D. Hare and Ramirez Aviles

Faculty of Agriculture, Ubon Ratchathani University, Ubon Ratchathani 34190, Thailand.

Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma De Yucatan, Merida, Yucatan, Mexico.

LEAD PAPERS

The first paper by Hacker and Loch, Producers views and research opportunities in production of seed of tropical forage, mainly discussed the results of a questionnaire sent to producers of tropical forage world-wide. This questionnaire requested information from producers on seed production over the past three years and their perception of problems relating to seed production and marketing.

Responses to the questionnaire were received from ten countries with the majority from Australia. The questionnaire was in English and only seven responses were received from Central and South America. If the questionnaire had included Spanish and Portuguese versions, then more responses may have been received.

The strongest responses for seed production of legumes was the need for weed control and more advice to improve production. With the grasses, seed shedding and harvest timing was of concern. The respondents also indicated that it was often difficult to market tropical forage seeds because of the variability in demand.

The paper also stated that there are very few researchers world-wide working on seed production of tropical forage species, yet there is quite a lot of published papers, particularly from Cuba. There is little published work on seed production from Africa and very few papers on recently released species.

The second lead paper by de Andrade, Tropical pasture production - practice, experiences and perspectives, gave emphasis to the Latin American experience in tropical pasture seed production.

The tropical pasture seed market is large in Latin America. In Brazil, for example, annual seed production is around 100,000 tonnes. Market size is dependent upon new plantings and pasture renewal, which in turn is dependent upon the beef and dairy industries.

Seed production systems vary from very specialist to non-specialist and opportunistic. In specialist systems, seed harvesting can be entirely mechanical or entirely manual. Some species which were machine harvested are now entirely hand harvested. For example, *Brachiaria decumbens* and *Brachiaria brizantha* seeds are now swept by hand from the soil surface in specialist systems. Non-specialist and opportunistic growers are attracted by the market only when the prices are high and may harvest seed from roadsides by hand or from pasture fields by hand or with combine harvesters. Non-specialist systems with mechanized harvesting are common for species like *Andropogon gayanus* in Brazil and even with *Cenchrus ciliaris* in Australia.

In Brazil, the main research in tropical pasture seeds has been to try and find where and how to grow the seed crops and when and how to harvest the seed. First of all, suitable regions had to be found to grow good seed crops. In many cases, areas had to be found in high altitude sites for effective seed production. Once areas were found there was often not enough general management research or crop husbandry available to help growers in the beginning. They had to produce seed by trial and error. For example, with *Arachis pintoi* a

lot of growers had to develop systems themselves ranging from planting with companion crops to harvesting methods.

The paper also argued that the need to renew huge areas of degraded pastures in the Cerrados of Brazil, the globalization of the economy, and the increasing adoption of ley farming systems create good prospects for the expansion of the pasture seed market in Latin America. The author pointed out that in contrast with these good prospects, research funding in tropical pasture production is diminishing and that new alternate funding sources will have to be found.

POSTER PAPERS

There were only five poster papers presented in this session, of which only two were relevant to the topic of tropical pasture seed production and management.

The first poster paper was by Phaikaew et al. and it looked at the current status and prospects for tropical forage seed production in Southeast Asia. Thailand is the largest producer in the region followed by China, Laos, Malaysia, Indonesia and the Philippines. Thailand's production is dominated by *Brachiaria ruzizensis* and *Stylosanthes hamata* and China's production by *Stylosanthes guianensis*. In all these countries, labour-intensive harvesting methods are used, which results in good quality seed. Governments usually guarantee the farmers a contract price for a certain amount of seed which reduces risk.

The paper also discussed the need to increase seed production of widely adapted species and to develop trade between countries in the region. Countries close to the equator may have to purchase seed from higher latitude tropical regions.

The second relevant poster paper was by Usberti et al. and this paper looked at seed quality parameters in 15 new guinea grass hybrids with variable flowering cycles. The paper concluded that seed quality parameters in guinea grass is strongly affected by genotype and that the tetrazolium test was found to be a reliable and efficient method to estimate seed viability potential.

DISCUSSION

There are now very few researchers world-wide working on tropical pasture seed production. This was reflected in the very low number of papers initially submitted, 16, and the low number of relevant papers, two, presented on the day. However, while seed research may not be carried out in depth, seed production is continuing to expand, particularly in South America and Southeast Asia. Growers will most likely have to do practical research themselves on seed crop management and harvesting techniques.

Discussion initially centered on small-holder production and it was emphasized that seed areas per farm must remain small for each species. This is to ensure that seed yields are high, seed quality is high and crops remain profitable without having to hire additional labourers outside the family unit. In most countries outside Australia, there is no certification and seed production and trade is often

informal. In many cases the government is the initiator of production and the guarantor of price.

For seed production to remain a viable industry it must be closely aligned to a market. That market may be the dairy, beef or leisure industries. In Brazil, expansion of seed production has been dependent upon the dairy and beef industries. In Southeast Asia, the dairy industry is seen as the major market for seed production. It is also hoped that seed production of species for the leisure market will increase; playing fields, home lawns, golf courses, green belts in and around cities and cover crops in plantation crops or fruit orchards will be an increasing market for tropical seeds.

At the next congress in Brazil, it is hoped that there will be more papers on tropical forage seed production and even papers on seed production of tropical amenity species.