

Response from Senior Author

The idea to do this survey came after the 2001 IGC in Brazil. There was a view around that legumes had not contributed as much as forecast, and therefore the large investment of research dollars, in hindsight, was not justified. Bob Clements decided that this suggestion needed to be investigated.

To help him prepare a list of legume success stories after the Brazil IGC, Bob gathered a team of pasture scientists with an interest in pasture legumes (Bob called them his legume fanatics). This international team submitted their list of possible success stories from around the world. We had about 30 different case studies at one stage, but this was reduced to fewer than 20 as they were examined more closely against our criteria of success. Each case study had a 'champion' to promote it and I guess that the 'champions' of the vine legume-grass systems in northern Australia were mostly retired. We were aware that the vine legume system was not being promoted or planted at any significant level in northern Australia at the moment, and for this reason, no member of the 'legume team' put it forward. However, if Jim knows that there are 50000ha of such vine legume systems currently in north Queensland, then we should have mentioned it.

I am sure that we missed other good examples from around the world — it was just not possible to get them all, *e.g.* gliricidia in Indonesia. We decided not to mention the very large areas of vine legumes under rubber and oil palm in Malaysia and Indonesia, as their primary purpose is not animal production. There is no doubt that, by other criteria, they are important.

In PNG, there may be significant areas of vine legume pastures, but in the major beef cattle area (the Markham Valley), large-scale graziers are now concentrating on planting leucaena.

They have found that the leucaena-grass system is highly productive and resilient under heavy grazing, although they need a grass species that can survive the high stocking rates imposed.

We did not include robust *Brachiaria* systems or grass-N systems as Jim mentioned. These are clearly important and indeed in many cases preferred, but our task was to examine the legume-based systems.

In conclusion, the main thrust of the exercise was not only to identify successful legume-based pasture systems but also to analyse the factors that contributed to these success stories. This is where the review was interesting. Many of the success stories had commonalities, which made us realise that adoption is a long-term and purposeful process. There should be no surprise at this conclusion.

For this reason, I suggest that some of the recent legume releases (burgundy bean, caatinga stylo, desmanthus) may struggle to reach significant adoption, as they do not have the support systems necessary to achieve success, *e.g.* our analysis showed that they need:

- to meet the needs of graziers,
- supporting partnerships and participatory involvement of relevant rural and industry groups and organisations, and
- long-term involvement of 'champions' of the technology.

Achieving significant levels of adoption is a long-term process, but one that must be achieved to ensure that the resources we invest into our research can be justified by real economic, social and environmental benefits to graziers.

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