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intervention in July, but the reductions for Imboso Mwanga are less than those for the other villages. This shows conclusively that (as expected) the effectiveness of the preventative strategy depends on the continued use by all the women of the detoxification method.

The good news is that there have been no new cases of konzo in the Boko villages since the intervention started in July 2011. There has been a reduction in the mean total cyanide content of cassava flour from 50 to 18 ppm and in the mean urinary thiocyanate content from 930 to 225 µmole/L urine. Current levels are still higher than those in Kay Kalenge village[6], partly due to the fact that initial conditions were much worse in the Boko villages than in Kay Kalenge and also because the uptake of the detoxification method by the women is not as complete as at Kay Kalenge. It is hoped to improve the uptake in the final three months of the Boko village project, that has been funded by the Australian Agency for International Development (AusAID).

Konzo is known to occur in Bandundu, Kasai Occidental, Kasai Oriental and South Kivu Provinces of DRC, but the number of cases of the disease in DRC is unknown. A survey in 2009 by ACF (Action Against Hunger) in most of the health zones of Kwango District in Bandundu Province reported 2218 konzo cases[9], and we are currently conducting a konzo survey in Kwilu District in Bandundu Province. The simple prevention strategy used in Kay Kalenge[6] and in the Boko villages, will be used in further villages in DRC in 2012-3 and also in Nampula Province of Mozambique, supported by AusAID.

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Lathyrus research in Portugal

Lathyrus spp. in Portugal are nowadays underutilized crops. The main species grown are *L. sativus* (grass pea) for food and *L. cicera* (chickling vetch) for feed.

Important in the past for the poorer population and overlooked by the wealthy, grass pea has been gaining a new niche as a traditional delicacy, with a special place on the menu of trendy restaurants (normally stewed with different kinds of meat and vegetables) in the southern part of the country and serving as main theme for a couple of annual gastronomic festivals in the central region of Portugal. There are no records of neurolathyrism outbreaks during historical times in Portugal. This contrasting situation with our neighbour Spain, is probably because Portugal has never faced such extreme hardship times and famine as the one felt during the civil war in Spain, and due to that grass pea has never been used as a staple food for the Portuguese. The only known available cultivated grass pea germplasm are traditional landraces selected by the farmers. Farmers produce it mainly for their own consumption, selling only the surplus. Therefore grass pea can only be found in Portugal in some local markets in low quantities. Chickling vetch on the other hand has a high potential to conquer the big animal farmers from the Central-south of Portugal, as an alternative crop for the more marginal lands. The National Institute of Agronomic Research (Instituto Nacional de Investigação Agrária - INIA) has registered two *L. cicera* cultivars “grão de gramicha” and “grão de comenda”[1], to be used as animal feed and fodder crop, known to perform well in these regions.

Lathyrus spp. have considerable potential on neutral to alkaline soils. Not accidentally, in the country areas were *Lathyrus* spp. are known to be grown, the pH values of the soils range from 6.6 to 8.5 (Figure 1).

In Portugal, as in the rest of Europe there has been increasing emphasis on local production of legumes. Initially, this was mainly meant for animal feed, to avoid the hazardous use of animal based cattle feed (linked to “mad cow disease”) and the importation of soya meal, but lately also an increased diversity of protein sources for human consumption is sought due to the growing concern about healthy food habits. Chickling vetch and grass pea fulfill these feed and food purposes. Their cultivation is also justified by the need to recover marginal lands (as through green manuring). Due to the above, breeding efforts are needed to supply the Portuguese farmers with highly productive, locally adapted, sustainable varieties.

With the aim to provide biotechnological support to breeding programmes we develop research on several *Lathyrus* species, presently with support from the national FCT funding (PTDC/AGR

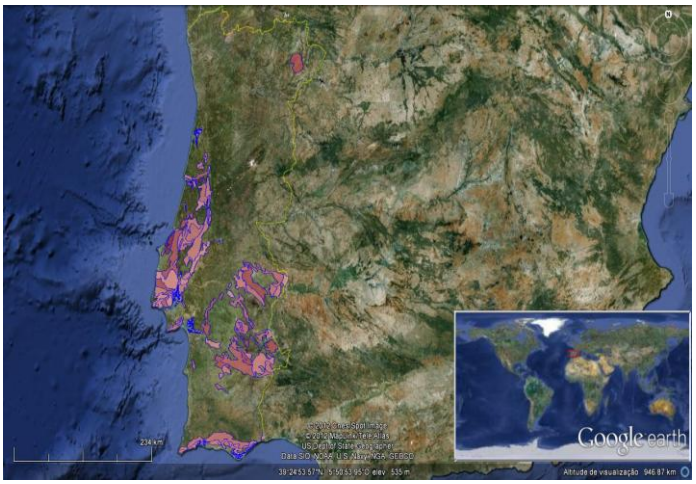

Figure 1 – Neutral to alkaline soil areas in Portugal identifying the potential *Lathyrus* spp. production areas. Google earth plugin with soil pH values acquired at http://googleearthpt.blogspot.pt/2009_04_01_archive.html (accessed 31-05-2012) based on the report by Câmara-Freitas[11].

GPL/103285). We are characterizing the physiological responses of different *Lathyrus* spp. to drought[2,3], developing new molecular tools for *L. sativus* and *L. cicera*[4] and adapting tools developed for the model legume specie *Medicago truncatula* and major crops like pea, lentil and faba bean to *Lathyrus* spp.[5]. Combined with the rust, powdery mildew and *Ascochyta* resistance evaluation that has been done in the past[6-10], these new biotechnological tools are allowing the identification of the underlying candidate resistance genes. These genes will speed up a more efficient resistance breeding. The transferred tools will also enable more fundamental comparative mapping and synteny studies between grass pea and chickling vetch and the other legume crops.

In the future we intend to support the development of a national *Lathyrus* grower's net to disseminate the accumulated scientific knowledge to the real end users, invest on the quality aspects that they value most, and assist on eventual participatory selection to increase quality and tackle their major constrains.

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