
Success With Velvet Bean in the Republic of Benin

Velvet bean, *Mucuna pruriens*, has probably had more impact on farmers lives than any plant distributed from our seedbank. You have read about it in many issues (see especially 20-3, 24-4 and 37-1).

A brief review for new readers. Velvet bean is an extremely vigorous vine that grows well in moderately poor soil, is drought resistant, and fixes a lot of nitrogen on its roots. It is interplanted with corn as a green manure. Soon after the corn matures, it covers the entire field, killing weeds. It can even kill vigorous grasses like imperata grass. It is cut back and left in place just before corn planting time. This kills the vine, which now protects the soil from erosion, retains moisture, and eventually turns into compost.

How effective can it be? Tom Post reported that in Belize it had doubled and, in some cases even tripled, corn yields. A Project Global Village publication in Honduras reported up to 4-fold increases in corn yields.

The latest annual research from the International Institute for Tropical Agriculture in Nigeria reports on their experience in Benin. Demonstration plots of different kinds were established in farmers' fields. Groups of farmers met periodically to observe the results and to discuss what experiments they would want to do on their own fields. They were especially impressed that velvet beans could smother young shoots of the vigorous weed "spear grass" (*Imperata cylindrica*). Farmers harvested 80% more corn with velvet bean than on continuously cropped land. Farmers that chose an alternative experiment (pigeon pea) had only a very modest improvement.

Next farmers with "completely depleted fields" were given two optional experiments: plant acacia trees for a multi-year fallow or velvet bean. Many planted velvet bean one month after sowing corn, during the first rainy season, then let it grow into a dense cover during the second rainy season. The results were dramatic. They recorded, on average, a 10-fold increase in corn yield (from 200 to 2,000 kg per hectare). National extension authorities are now applying this technology in all zones where soils are depleted and imperata is a problem.

The article ascribes the success of the effort to several factors. Farmers were not just involved in the experiments but also in choosing which experiments to do. A range of options were presented. Farmers had a chance to see demonstration plots showing the effects of technologies before they made a selection. They were not simply told about hypothetical benefits and asked to make a selection. Finally, the effect of velvet beans on corn yield plus the bonus of imperata control had a decisive impact.

The amount by which velvet bean can increase yields clearly varies greatly from place to place. If the soil is sufficiently depleted, it has the potential to make an enormous difference. If you have not yet tried velvet bean and it is not readily available near you, we can send a trial packet. If you do not have back issues of EDN, you might also want to request the Technical Note on Green Manures (http://members.echocommunity.org/resource/collection/D9D576A1-771A-4D95-A889-4FBD9E75D03D/TN_10_Green_Manure_Crops.pdf) at the same time.

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