

Observation on growth performance of four vetiver varieties under natural shade

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**H.M. the King's
Initiative Projects**



**Restoration of Natural
Resources**

**Forest, Soil, Water,
Biodiversity**

Significance of vetiver utilization in the highlands is soil erosion prevention



• shade-tolerant varieties are needed for the forest areas

• slow rate of slip-multiplication

• practical transportation of propagating materials should be developed



Vetiver variety research in HHK Centre



- vetiver varieties released by the Land development Department (Min. of Agric.& Coop.)
- local varieties



Shade-tolerant varieties

- most of vetiver grass grow well in full sun-light
- shade-tolerant varieties are in need for utilization in forests





Local vetiver collection plot



Selected varieties

HKPW 07, HKS 04,
HKU 05, HKUH 03



Observations (3 years)

plant ht., no. of
clump/pl., clump
size

growth behaviour



Trials

vetiver slips were grown
under canopies
of indigenous trees, e.g.

Morinda tomentosa,
Phyllanthus emblica,

Shorea obtusa,
Shorea siamensis,

Tectonea grandis,

Terminalia alta,
Terminallia chebula and
Xylocarpa



Growth and development

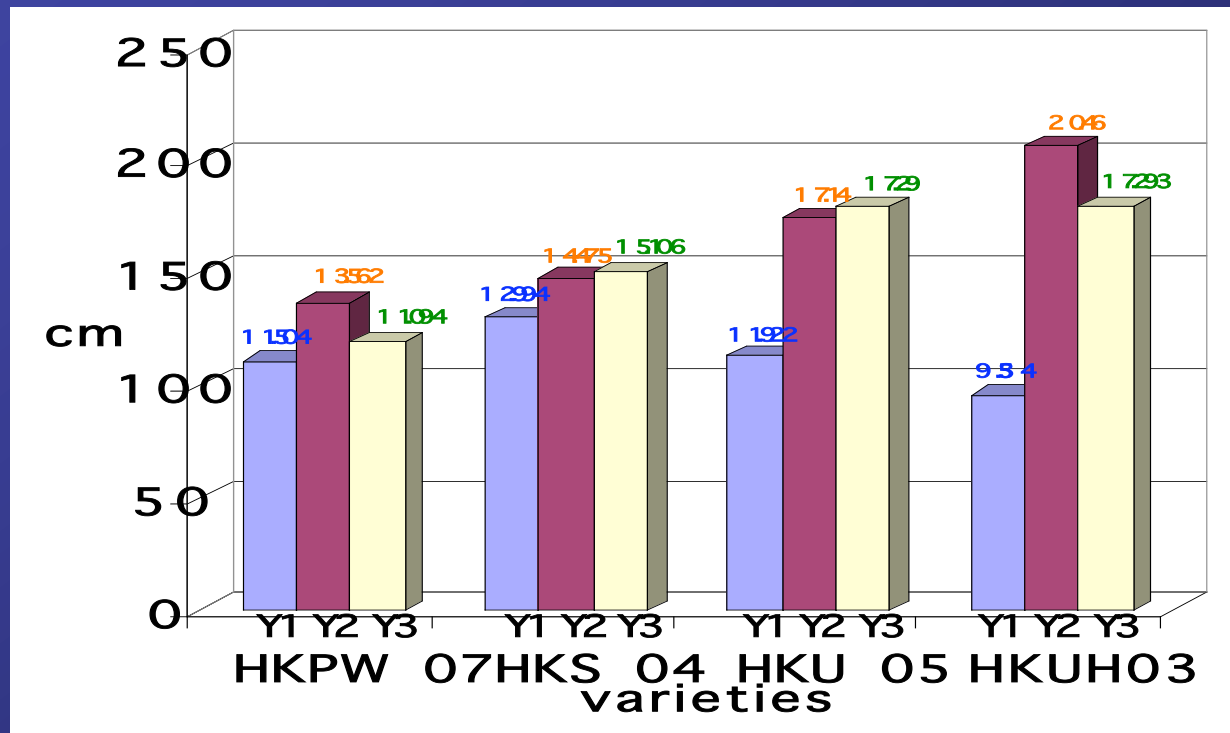


Fig. 1 Means of plant height of four varieties of vetiver grass grown under natural shade.

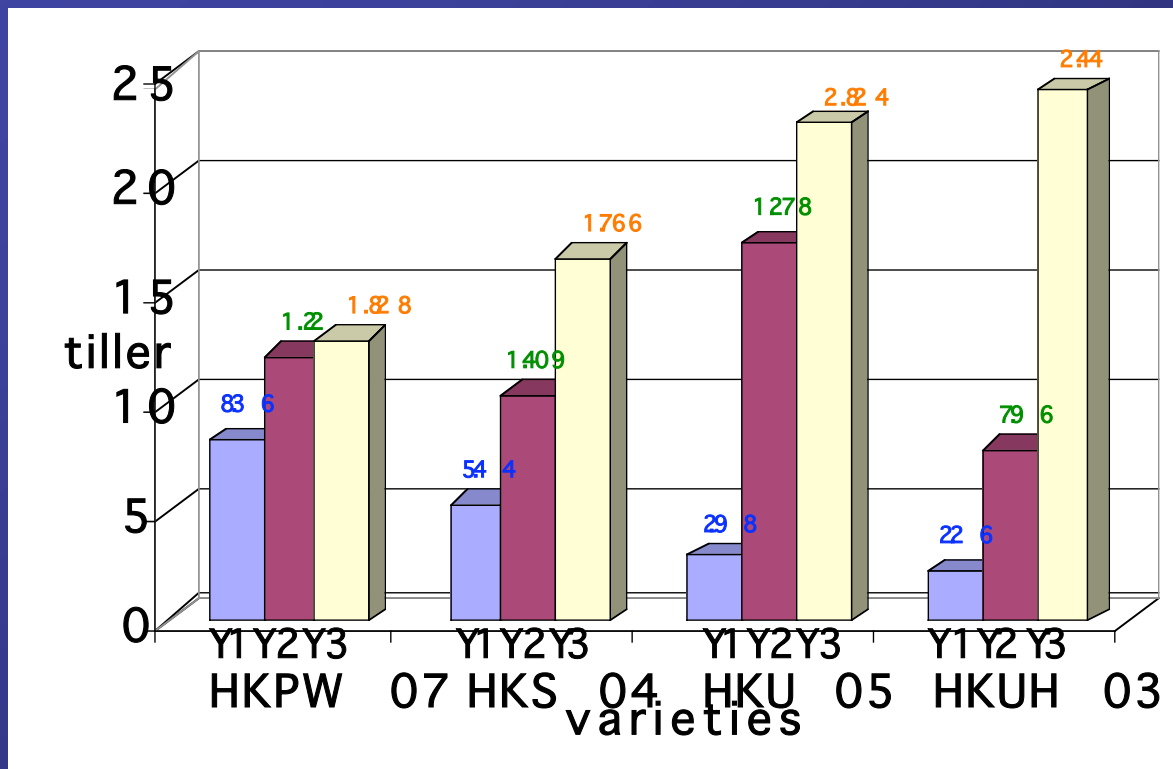


Fig. 2 Means of number of tillers per clump of four varieties of vetiver grass grown under natural shade.

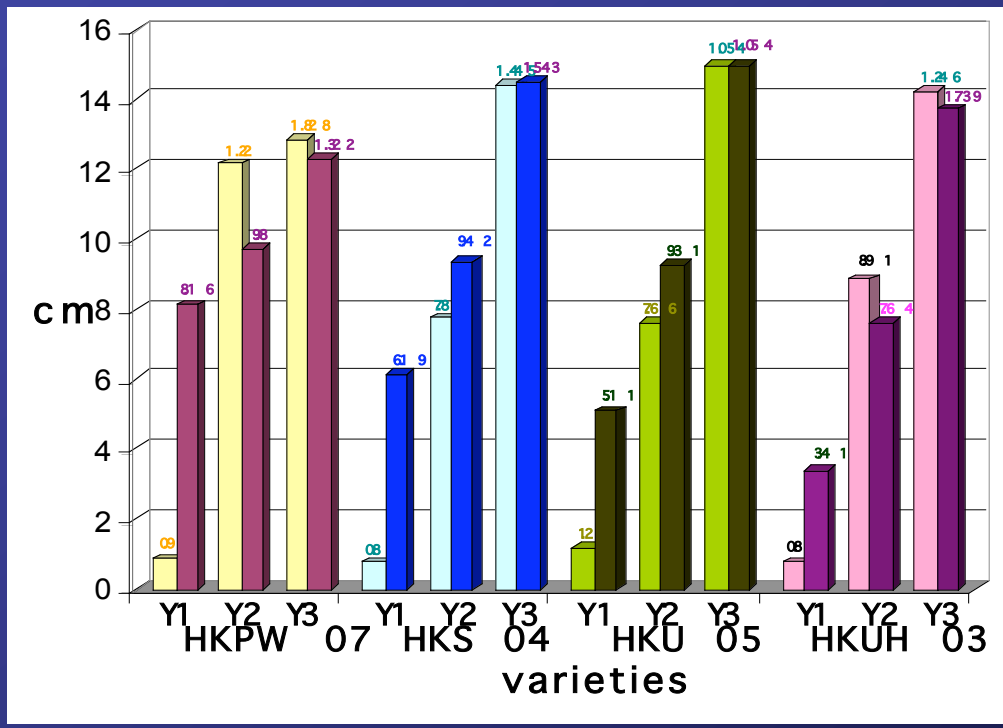
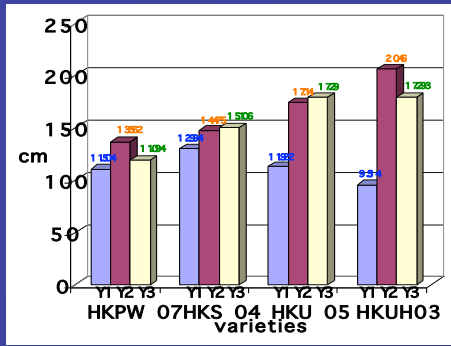


Fig. 3 Means of clump thickness (width X length) of four varieties of vetiver grass grown under natural shade.

Growth characteristics

pl.ht



HKPW 07 and HKS 04 grew fast in the 1st year

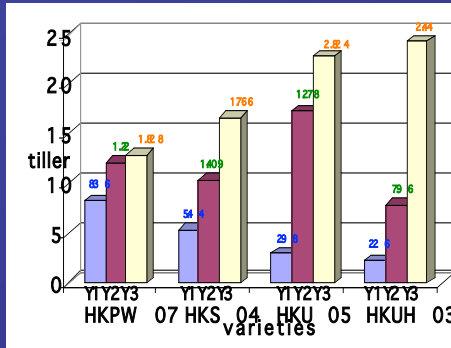
HKU 05 and HKUH 03 started slower

Indication of shading sensitivity and adaptability to shades

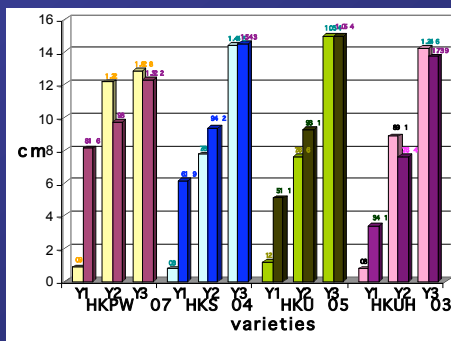
patterns of tiller expansion

allocation of varieties into forest trials can be considered from specific growth characteristics

tiller



clump size





HKPW 07



HKS 04



HKU 05



HKUH 03

Fig. 4 Vetiver grass grown under natural shade.

Further studies

- Field trials in forest areas of the HHK centre
- Characterisation of varieties for specific characters of each variety (e.g. morphology, anatomy, cytogenetics, isozyme patterns)



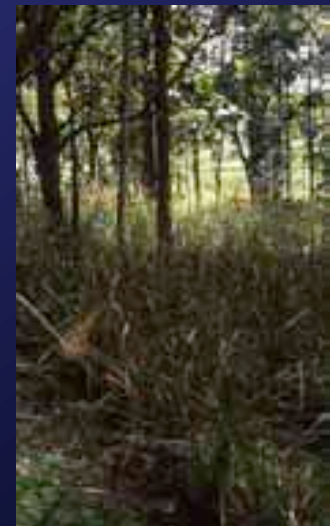
y1



y2



y3



y3

Remarks

Acknowledgements

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- Chiang Mai University