

Development of new varieties in Vetiver



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Vetiver or Khus (*Vetiveria zizanioides*):

- ❖ Vetiver is a perennial grass.
- ❖ Roots are the source of essential oil.
- ❖ Used in perfume, cosmetic, tobacco, soft drinks etc...
- ❖ Can be cultivated in a wide range of agroclimatic conditions.
- ❖ Well drained loamy soil-good growth/heavy clay soils-not support the growth.

Chemistry of oil:

- ❖ Pleasant aroma/heavy odour
- ❖ Vetiverol, α -vetivone, β -vetivone : important compounds.
- ❖ vetiveryl vetivenate – an ester also important.
- ❖ khusol, khusimol, khusitone



Major vetiver oil producing countries

Indonesia

Italy and Reunion Island

Haiti

Thailand

India

Major vetiver oil producing states in India

Karnataka

Tamil Nadu

Kerala

Orissa

Madhya Pradesh

Uttar Pradesh

Uttarakhand

Distillation and yields:

- Soaking and cleaning of root.
- Distillation period is 12-16 hrs.
- 25-30 qt/ha of root yield.
- 25-30 kg/ha of oil.

Varieties...

Earlier...

Year-1982:

KS-1: 17.8 kg/ha oil



Year-1982:

**Sugandha: 19.7 kg/ha
oil**



Duration: 18-20 months

Dharini

**Dual purpose genotype.
Useful for protecting soil
erosion.**

- **Tallest, very broad dark green leaves.**
- **Long light red-tinged inflorescence possessing dark-brown anthers and long, dark pink stigma.**
- **Longest and thickest roots.**
- **Early flowering.**

**Dense & long network a
suitable soil binder – cum
high oil yielder.**

38 kg/ha oil yield

31qt/ha root yield

Khus note-oil



Year-1998

Duration: 18-20 months

Gulabi

- **Medium tall**
- **Purple colour inflorescence**
- **Long root**

Late flowering

Suitable for drought / marginal, water logging areas, high pH, alkaline soils.

Special perfumery value

34 kg/ha oil yield

30 qt/ha root yield

Rose note-oil



Year-1998

Duration: 18-20 months

Kesari

- **Tall with thin narrow leaf.**
- **Whitish-green and long inflorescence.**
- **White stigma and slightly brown anthers.**
- **Thin fibrous and medium long roots.**

Late flowering

Suitable for drought/marginal land

Special perfumery value

30 kg/ha oil yield

30 qt/ha root yield

Kesar (saffron) note-oil



Duration: 10-12 months

CIM-Vridddhi

- **Long root.**
- **Dark purple color inflorescence.**

Very late flowering

33 kg/ha oil yield

27 qt/ha root yield

Khus note-oil



Duration: 06 months

CIM-Khushnalika

Fast root development

Khushinol rich

20 kg/ha oil yield

20 qt/ha root yield

Khushinol content: >45%



Low cost, High-Tech invention for Khus root digging

CIM KHUS-UPAY

- CIMAP has developed an efficient hi-tech low cost multipurpose khus root digging implement, **CIM KHUS-UPAY** as an alternative to laborious, time-consuming and expensive manual digging of khus roots.
- CIM Khus-Upay reduces digging cost from Rs.35000/- per ha to Rs.6000/- per ha apart from saving time.
- The implement helps in efficient digging with no root loss.



Major Do's and Don'ts

- ❖ Select right species and authentic cultivars with good quality of oil.
- ❖ Land should be well prepared for transplanting.
- ❖ Slips should be prepared from 6-8 months old vetiver clumps.
- ❖ Increase plant population if cultivated in low fertility soil and waste land.
- ❖ Transplanting of crop should be done in the month of January/February for regular crop and monsoon for soil with problem.
- ❖ Gap filling should be done by established slips in nursery.
- ❖ The roots should not be stored for a long time and distilled immediately after digging.
- ❖ The roots are washed in clean running water to remove the adhering soil particles and are spread out in shade on clean dry floor.
- ❖ The separation of oil from water is also to be done carefully due to the fact that the specific gravity of oil is almost equal to that of water.
- ❖ Oil should be stored in moisture free containers made of stainless steel or aluminium.

Thanks...