

ชื่อเรื่อง

**The Introduction, Early Results and Potential Uses of VGHR in
Mediterranean Regions**

ชื่อผู้วิจัย

(Trogia M.), Yoon P.K., Tacias J., Rodriguez J.N., and Frutos D.T.

ชื่อหน่วยงาน

Techagrind S.L., ITALY

ปีที่ดำเนินการ

ปีที่พิมพ์รายงาน

Abstract

The establishment and growth of VGHR were tested in the hostile, aerial and edaphic environment of Murcia, Spain. The climatic condition consists of hot summer, cold winter with sub-zero temperatures, low precipitation and negative water balance over more than half a year. The soil is calcareous, mostly clayey. Hilly topography is common with serious erosion rates of more than 5000 tm/km^2 per annum.

The experimental sites were in El Chopillo with 300 plants and in Lorca with 32,498 plants on 5 trials testing soil protection and moisture conservation under different conditions. Despite cold winter frost, trials established by container plants, from December 1994, had overall transplanting success of 95.9%.

Harvesting of plant tops in El Chopillo, produced 55 tiller and 1033 gm/plants after 14 months. In San Julian, the Malaysian and American Cultivator produced 304 and 377 gm/plant with 45 and 79 tillers respectively after 9 months.

Excavation showed that the root system in El Chopillo had reached a depth of 2.6 m. In San Julian, the Malaysian and American Vetiver had produced roots reaching down to 2.1 m. and 1.7 m. respectively. In all cases, the major root masses were at the top 0.5 m. In a 45° slope of 11 meter height, 2 blocks of 20 meters were planted with VGHR at 1 metre vertical interval in January 1995. The in between block, left unplanted as control, suffered severe erosion by September 1995 despite the low rainfall. Significant soil had been trapped by the VGHRs.

Sub-zero temperatures in winter killed exposed tops but the buried crowns survived. In early spring, new tillers were formed, followed by good and vigorous growth in Summer and Autumn. The plant's response to the seasonal weather condition suggests 4 distinct phases:

1. Frost injury and dormancy
2. Awakening and tillering
3. Rapid growth and biomass production
4. Slow growth or sustenance period.

The tropical Vetiver Grass adapted well to the weather conditions and appeared to behave like a temperate plant. This and the good growth and root system suggest potential uses for Vetiver in the Mediterranean Regions. It also suggests that Vetiver could be established in the highlands of the tropics and the subtropics.