

## **THE EUROPE AND MEDITERRANEAN VETIVER NETWORK**

**Michael Pease**

Regional Coordinator, European and Mediterranean  
Vetiver Network  
Lagos, Algarve, Portugal

### **Abstract**

The European and Mediterranean Vetiver Network (EMVN) is one of the more recently established vetiver networks. The earliest plantings are now five years old and knowledge of the potential for vetiver grass technology in the region is increasing. The main issue is climatic and the northerly limits for effective vetiver establishment have yet to be established. Alternative cold-tolerant species to vetiver are being considered. Vetiver plants are available from within the region but knowledge of the technology is generally limited. Funding is a major limiting factor.

### **Introduction**

The first introduction of a field application of vetiver grass technology (VGT) to Europe probably occurred in 1994 through an EC-funded project that sought to determine its applicability under Mediterranean conditions. Focus was limited to that area covered by the EC-funded project in southern Spain and, with the close of the project, vetiver coordination diminished.

All the countries in the region lie to the north of the tropics and subtropics. The introduction of the technology to the region remains therefore somewhat exploratory for the time being. Those European countries within the region where VGT may have application range from Portugal's Azores in the Atlantic Ocean to Albania in the East and include, for instance, Cyprus and the Greek islands. Potential for the use of VGT may lie in West Asia and the Middle East, particularly Turkey, Iran and Iraq. Along the southern Mediterranean Sea, VGT may well have application in the countries of the Magreb, particularly Morocco and Tunisia. Vetiver has been grown for some time in Israel and Egypt, but for its production of aromatic oil, not for soil stabilization.

### **Registration of EMVN**

The European and Mediterranean Vetiver Network (EMVN) was established as a non-profit association, registered in Portugal in November 1998. This was done with the intention of making EMVN more eligible for external financing as a European entity.

### **Technology Dissemination and Communications**

For a period in 1998, EMVN operated its own website which was, in fact, little more than a mirror of the TVN website. After one year this was discontinued in favour of a section within the centralized TVN website. This is more cost-effective. EMVN produced its first newsletter in April 1999 and a second one in November 1999.

### **Country-by-Country Activity**

#### **Portugal**

Vetiver was first introduced privately in 1996 in mid-central Portugal where it is thriving despite the fact that the location experiences many days of frost during the winter and, probably, maximum cold of

about -8°C. The plants are used to protect dam walls and to stabilize the banks of a heavily eroded watercourse which flows down a cultivated valley.

- Additional importations were made via EMVN in 1997 and 1998. Plants from these three importations went to private individuals, commercial bodies, NGOs, government bodies such as the departments of Agriculture and of the Environment at municipal level, and the University of the Azores.
- In 1997 the coordinator established a multiplication nursery on his property in southern Portugal where the plants have performed well. Maximum low temperatures are about -5°C and mild frosts may occur on 5-20 days each year. Total precipitation is about 450 mm per annum with some five dry months. With adequate water, plants behave normally, reaching a height of some 2 m and with active root growth. Multiplication rates are about 30:1 per annum.

## **Spain**

In 1994, an EC-funded project sought to determine the application of vetiver under Mediterranean conditions. The selected site was a steep slope of 60 % on an access road leading to a reservoir near Lorca, in Murcia region. The area has a harsh climate with precipitation of only 300 mm per year, 5-6 dry months and poor soils. Details of the trial were published in TVN Newsletter #16. Since 1998, no maintenance or irrigation has been provided. Nevertheless, the plants have survived well and the hedges are proving effective not only in controlling erosion but in providing a microclimate under which native species of plants have become established. Control blocks on either side show severe erosion with deep gullying and rilling.

## **Italy**

In Italy, research work has been conducted on biomass production and salt tolerance at Catania University, Sicily. In 1998, a privately owned nursery located near Milan established a holding of vetiver plants originating from the EC-funded project in Spain. Some plants have been distributed to a number of growers elsewhere in the country. Long-term performance under conditions of prolonged cold as experienced in more northerly regions has yet to be determined, but initial results are not unexpectedly negative. The nursery is now being moved to near Pisa, where climatic conditions will be much more favourable to vetiver growing. Generally, within Italy, considerable interest has been expressed in VGT. The technology is likely to have considerable application, particularly in the south.

## **Albania**

In 1997, the internationally-financed Albanian Private Forestry Development Project imported plants from EcoGroup, Florida, United States. There is no doubt that vetiver has a role in certain localities where climatic conditions are suitable. However, in many locations winters are severe and vetiver would either not survive at all or, at best, perform unsatisfactorily. The prime focus is to address problems of erosion on small holdings. However, much could also be done within the bioengineering context of stabilizing steep slopes of roads, dams, etc.

## **Other Countries**

VGT undoubtedly has potential application in such countries as Greece, Syria, Turkey and Morocco and Spanish islands such as the Canaries. Expressions of interest have been received from the above-mentioned countries, but interest has not yet translated into the introduction of plants.

## **Overview**

There is adequate indication from results of field applications, some of which were established nearly five years ago, that VGT has potential in many countries within EMVN, particularly in southern Europe, western Asia and countries bordering the southern Mediterranean. This is reinforced by the

climatic and pedologic param for effective vetiver hedgerow establishment under tropical and subtropical conditions, which indicates that VGT would also be appropriate in many locations within EMVN. In southern Europe, it is probable that the most important immediate applications will be within a bioengineering context, stabilizing road and rail cuttings and embankments, protecting dams and reservoirs, controlling leachate on industrial and municipal landfills, and protecting against erosion the landward side of erodible cliff tops.

### **Climatic Factors**

Because of the less favourable growing conditions (cold winters and long hot summers) in many parts of the region relative to tropical and subtropical regions, much emphasis needs to be placed on the known techniques for promoting early establishment. Also there is a need for awareness that vetiver is no different from most other plants in that it requires management attention in the early years of its establishment following planting. For instance, regular watering, some fertilizer application, and gap filling are important to early establishment of an effective vegetative barrier. It has been shown in Australia and China, for example, that vetiver grass hedgerow barriers can be established on engineered slopes at about one tenth the cost of engineered means, e.g. gabions, gunite, etc. It is still economic to provide water for the vetiver in its first two years of establishment even if this has to be transported.

### **“Jiji Sao”**

Many countries or regions under EMVN have geographic and climatic limitations to the potential for establishment of vetiver grass due to prolonged and intense cold in winter. “Jiji Sao” (*Achnatherum splendens*) may well have application in some of these localities since, in China, it has been shown to have a much higher tolerance to cold than vetiver. It would, therefore, be desirable to test “Jiji Sao” in a number of locations within EMVN to determine its application where vetiver would be unsuitable.

### **Limitations on expansion**

Availability of plants was a limitation on expansion but supplies are now available from within the region in Portugal, Spain and Italy. The main problem to overcome is expansion of an understanding of the technology and potential of VGT. This requires finance, which is currently limited to that provided by TVN. If the financial limitation was removed, expansion of VGT usage within the region could be expected to result from the impact of seminars, demonstrations and personal visits.