COTTON

Cotton is a shrub-like plant (bush) from the family of *Malvaceae*. The fruits of cotton are wrapped in fine plant fibers, which are used for the production of yarn, the main reason of its cultivation. The cotton yarn is today irreplaceable in textile industry for the manufacture of highly appreciated and required cotton fabric, placing cotton's fibers amongst the most important natural fibers in textile industry. From the 19th Century to the present, the production of cotton and cotton fabric has quickly evolved and progressed in terms of quantity and quality. This development has been an important issue in industrial and agriculture research. The cotton fiber represents about 50 percent of the global textile industry and covers half the needs of the entire textile production.

Gossypium herbaceum

Cotton is a plant that thrives in tropical and subtropical regions, with a possibility to be grown successfully in the areas of arid climate, such as the Mediterranean region. In Egypt and Syria for instance, growing cotton is an important economic activity, these countries being famous for their cotton textile industry. It is however important to say that, speaking about the Mediterranean countries in general, at least partial irrigation must be ensured in dry areas planted with cotton.

The largest cotton producers in the world are China, India, the United States and Pakistan.

Cotton has been produced first in the 4th Millennium BC, in the Indus Valley of India. Its cultivation was first to be spread in the Mediterranean area, and subsequently in other tropical and subtropical areas of the world.

Cotton requires a warm climate without periods of cold and frost. As a crop, cotton requires plenty of sunshine, a large number of sunny days, and high temperatures. The best harvest is obtained if cultivated in the areas enjoying medium to dry climates, with the annual rainfall of not more than 600 mm. Cotton thrives on difficult soils, which do not require to be supplied with massive quantities of nutrients.

Young cotton plant

Cotton bud before opening

Open fruit cotton

Cotton's flower

Natural, wild, or spontaneous cotton (*Gossypium arboreum)* is a long lasting plant, usually growing as a shrub or a tree, reaching up to 10 m of height, opposite to numerous annual varieties or cultivars of cultivated cotton (*Gossypium herbaceum*), displaying large yellow or white flowers with 5 petals. The plant provides compacted and larger fruits which open at the age of maturity, dissolved from the falling seeds, together with white or yellow plant fibers, used for the propagation of seeds, which can be transferred by the wind over great distances. Fibers have a silk like appearance and their size ranges from 2 - 5 cm, depending on the variety of cotton. Many varieties and cultivars were selected from the above mentioned two types of cotton, these two types not being cultivated nowadays, primarily for their short fibers (0.2 - 0.5cm).

Cotton without treatment (control)

Cotton treated 1 X

Cotton treated 2 X

Cotton treated 3 X

On the four photos above (which is recorded by the group 5K from Adana) it possible to see the different development of cotton, depending on the number of treatment with Zeogrow. Cotton is planted in large areas and treatment is performed selectively. In the upper photos the differences between treated and un-treated cotton crops are important.

Only a few experiments of Zeogrow utilisation in cotton productions have been undertaken up to the present day. These experiments were conducted in Syria, mainly on large plantation farms, and such treatments gave encouraging results. Only a couple of practical comparative experiments were realized on smaller surfaces there, so that observations on the impact and the effect of Zeogrow on the growth and development of cotton plants can be considered very successful:

- Treated plants develop quickly, especially while they are younger. Plants reach a greater height, have stronger stems, and blossom earlier, with flowers of impressive, attractive colours. The leaves are also of an intense green nuance.

- The fruits of treated plants reach maturity ten days earlier compared to non treated ones. We can see the plants treated with Zeogrow developed longer fibers. The

research of the impact of Zeogrow on the quality of cotton fibbers has only started. So far, on the basis of a few comparative tests in Syria, we have only approximate pictures of Zeogrow's impact on growth, development and production of cotton.

Two fields of cotton in full maturity, Syria

On the photos above we see the surface dozrelog before the cotton harvest. Both photographs were taken in Syria on the estates with the traditional production of cotton (without treatment with Zeogrow).

In Turkey and Syria, we met many entrepreneurs, landowner and agronomist who are great enthusiast of Zeogrow propagation in their countries. They all tend to do this preparation as soon as possible; begin to use it in total agricultural areas. They believe that the application of Zeogrow is the simplest and most effective way to ensure the ecological production in agriculture fields. In Turkey there is a well organized group of young enthusiasts who, very effectively, promote, propagate and effectively performed Zeogrow use in various parts of Turkey in large agricultural fields and in comparative experiments. The results that they achieved so far are really impressive. Due to the encouragement of the group, many agricultural producers used Zeogrow regularly in plastic tunnels and in open places. After each treatment with Zeogrow, an effect is visible, and with repeated applications (once a week) is simply incomparable with the result obtained in the field of non treated plants.

It is necessary to say truly - at the end of this small study of Zeogrow effects on growth, development and production of cotton - that responsible people must find a way that would lead, effectively and quickly, toward promotion, extensive distribution and use of Zeogrow in countries where Zeogrow gained a great supporter and enthusiasts. This refers not only to Turkey and cotton, but also many other countries and crop plants that have successfully achieved Zeogrow application. At present manufacturers are now important to find the best way of distribution and use of Zeogrow because it is simply in the interest and for the benefit of all humanity.

Summary:

We see that plants treated with Zeogrow (Basic) show:

- Higher growth
- Higher yield
- More resistance to draught
- Longer fibres
- Less contents of tar (Harz)
- Health of plant is passed to next generation and further on, expected to lead to a premium quality after several years