Introduction to Beijing Redlight Ltd. Co and its Technology

Beijing Redlight Conversion Limited Co. is a new and highly advanced technology enterprise. It mainly produces light conversion additive for agricultural film, glass and solar plates.

Understanding the Technology

In 1992, the company obtained the light conversion technology from the Technological University of Russia. It passed 7 years of rigorous and nationwide tests in 13 Chinese provinces. Results in the tests show that using the light conversion additive in film along with proper conditions in air and soil will largely increase production and maturity in a shorter span of time with good quality.

Solar wavelength which ranges from 380nm-720nm is required for plant growth. An ultraviolet wavelength of 400nm or less and infrared wavelength of 720nm or more are needed for plant growth. An infrared wavelength between 600-700nm accounts for 26% while ultraviolet wavelength has a peak value of 420nm and accounts for 16%. Maximum absorption of infrared and ultraviolet wavelengths are 700 and 680nm respectively. When plants receive the transfer of lightthrough the film, it will yield more in the production process. 380nm or below ultraviolet wavelength will give negative effects to crops such as mold formation and other bacterial/fungal diseases which hamper its growth. The intensity of the use of photosynthesis and sunlight is directly related to each other which are necessary for plant growth.

The principal use of light conversion additive is to increase the absorption capability of 200-400nm ultraviolet rays (absorption reaching 90%), and changing it into 593nm-615nm red and orange rays with intensive light flow density. This process proves to be very effective as it increases utilization at least 80%. The additive is prepared by adding a small amount of rare earth organic compound into pressurized polyethylene by a conventional blow technique. It increases the conversion of ultraviolet wavelength into orange-red light to 81%. As a result, it increases and promotes plant growth.

For example, using light conversion in a greenhouse for different plants proved to produce more. The following plants produced more than its normal production rate: cabbage increased 35%; tomato increased 20-40%; cucumber increased 20%; lettuce increased 40% and the maturity was earlier ranging 15-30 days. For roses, it only took 7-30 days to bloom. Field crops such as cotton, peanut, and other vegetables averaged 10-15%. More so, the quality of the produced crops was also better.

Prospective Future

Redlight Conversion Additive won first prize award during the “China Technological Patent Fair.” According to the Ministry of Science and Technology, it is the country’s *“star plan”* making its way into the “10th Five Year Plan” period as the newest high technological advancement. The Agriculture Ministry will try to push for the entry of light conversion agricultural additive in the industry in key market centers. With the entry into WTO, China’s agricultural industry faces strong competition, but through the introduction of this new technology in key market centers will open new avenues for various opportunities and developments in the sector.

Presently, Beijing Redlight Ltd. Co has once again introduced a new generation additive. Not only does it can be used for as an agricultural film additive, it can also be used in solar plates, production of glasses, automotive plastic film and glass, light conversion for automotive paint, and can make ultraviolet wavelength which is harmful to humans, be changed into infrared. This can also regulate heat in helping plant growth, being able to harvest all year round and preventing the production of old products.