



**ADDITIVES &  
COLORS FOR THE  
PLASTICS INDUSTRY**

**AGRICULTURE  
SOLUTIONS**



## ABOUT TOSAF

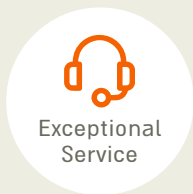
For over three decades, Tosaf has been developing and manufacturing high quality additives, compounds and color masterbatches for the Plastics Industry with the aim of providing for our customers' every need.

We have continuously grown and developed our offering, production capacity, and global reach, becoming a truly close to the market,

### GLOBAL ORGANIZATION

Servicing customers in over 50 countries in Europe, North America, South America, Asia and the Middle East, Tosaf has over 1000 employees spread throughout our production sites, warehouses, sales and distribution offices around the world.

Tosaf CEO Amos Megides established the company in Israel in 1986, and still stands at its head, leading and inspiring his team to always uphold the following three pillars:



Tosaf's major shareholders include:  
Megides Holdings Ltd. & the Ravago Group

## VAST EXPERIENCE IN AGRICULTURE

Tosaf was founded by a family of farmers with a deep connection to the soil and an understanding that advanced technology could be applied to protect crops and help them thrive.

From its earliest days the company specialized in additives and colors for the agriculture industry. Regardless of the agricultural challenge, be it extreme temperatures, low irradiation, virus-carrying insects or excess humidity, we have a color, additive or combination solution to offer.

Plasticulture - whether a greenhouse cover, mulch, the net or even the silage film - enables farmers to achieve improved quality and efficiency in crop production, while reducing

the consumption of valuable resources (water, pesticides, fertilizers, energy and arable land).

Tosaf is one of the only companies in the world to work with growers in the field as part of our development process. Through our Agriculture R&D centers, we partner with growers who are conducting their own trials to test our solutions and monitor their performance. So, when we say that our products have been tried and tested, we mean that we have seen them in action ourselves.



## OUR LEADING PRODUCTS

### UV

The two most important characteristics of a greenhouse or tunnel cover are that it does not prematurely degrade, and that it will not harm the crop. Choosing the right UV package is crucial to achieve this: it should match the relevant climate, pesticides, growing techniques and of course the crop itself. We will take these parameters in consideration before recommending the best solution.

### IR (INFRA-RED)

IR MB can increase the temperature inside the greenhouse by 2-3 °C to avoid damage to the crop caused by night frosts. We offer a wide variety of IR MB to suit conditions in different parts of the world, at different growing seasons.

### AF (ANTI-FOG)

When the temperature outside the greenhouse is colder than the temperature inside, water dripping can occur. We have developed a range of unique anti-fog products to eliminate this problem in both cold and hot climate zones.

### ANTI-BLOCK

When two adjacent polymer layers stick together, or 'block', the rolling of the film becomes impossible. Our anti-block MB eliminates this problem effectively.

### COOLING MB

An increase in the temperature inside the greenhouse may affect the viability of the crop's pollen. A cooling MB will resolve this issue, and lengthen the growing season in hot climates. Unlike other additives commonly used for this application, which reduce the light transmittance in the PAR by cutting off certain parts of it, thereby affecting the morphogenesis of the plant, our cooling MB does not negatively affect the crop.

### ANTI-DUST

One of the major obstacle faced by farmers is a reduction in light transmittance caused by the accumulation of dust on the film. Our anti-dust MB ensures better results when the film is washed between growing seasons.

### COLORS FOR AGRICULTURE

In agriculture, color masterbatches are considered to be additives, differentiated by their unique ability to reflect, absorb or transmit specific sections of the light spectrum according to the required specification. Our unique range of colors for agriculture have performance characteristics such as high durability, high stability, and ease of processing.



## INDUSTRY APPLICATIONS



### GREENHOUSE FILMS

Thanks to technological advances, Tosaf is able to produce tailor-made additives for use in greenhouse films, to support the dual goals of a reduced need for arable land and maximum yields per acre. Our range of products address the key requirements of controlled heat/light transmission, reduction of the film's surface tension, controlled mechanical properties and excellent UV stability with high chemical resistance.

Working together with film manufacturers, we apply the decades of experience and know-how that have made us world leaders in our field to design the exact film that meets specific crop, location and climate requirements.



### MULCH FILM

The use of mulch film is increasing throughout the world due to its cost-effective performance and ease of installation. Mulches can be used to advance or delay the growing season, improve yields, decrease water and fumigant consumption, and in orchards they can help trees mature faster to give earlier fruit.

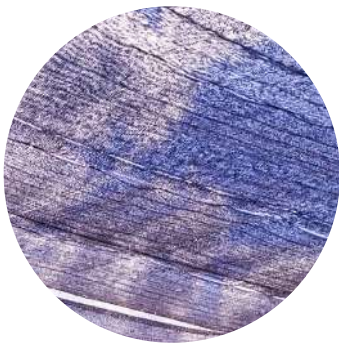
At Tosaf, we have developed a range of products that address the key requirements of mulch film-specific optical properties and high UV stability with good chemical resistance. The team of R&D specialists at our state-of-the-art production facility will recommend the most suitable combination of color and UV for your specific needs.



### SILAGE FILMS

In cold countries, maize and grass are grown during the summer, but need to be stored for use throughout the year. A plastic film is used to store the silage and maintain its nutritional value. Due to the high value of the silage it protects, it is crucial for the silage film to withstand extreme weather and resist tear for an entire year. Our products address the key requirements of mechanical strength, thin gauge extrusion, high opacity, excellent UV stability with minimal effect on cling performance.

Aside from the traditional films, new norms are being introduced to the market that make the films impermeable to oxygen. Tosaf offers a state-of-the-art oxygen barrier additive that is compatible with LDPE.



### SHADE AND MESH NET

Due to global warming, there are large areas of the world where crop production inside greenhouses is not possible. But, growing crops in the open field leads to lower yields, due to virus-carrying insects. A net-house solves these challenges by both protecting the crop from insects and enabling airing of the growing area. These nets are required to have specific optical properties, good mechanical strength and long-lasting outdoor performance. Tosaf offers specially-designed colors and UV MB with excellent dispersion that provide good processability.



### NON-WOVEN FOR AGRICULTURE

A plant is most vulnerable to virus-carrying insects and frost in the initial period after planting. Covering rows of young plants with non-woven fabrics is a perfect, cost-effective solution. The fabric is porous, so it lets out excess humidity to prevent the growth of molds, but the pores are small enough to stop insects flying through and infecting the new plant with viruses.

We at Tosaf understand the challenges in both the production of the non-woven fabric and its application in the field. Our UV and white MB suit this unique production process, increasing the service life of the polymer.



### TARPAULIN

Tarpaulin is known to have very good mechanical properties. Because of their structure, clear tarpaulin films are highly diffusive, making them a good replacement for conventional PE greenhouse cover in areas that are prone to hail, or have high-speed wind gusts. The films' superior mechanical properties also make them suitable as a replacement for the thick HDPE geomembrane, and for use as pond liners.

The production of high-quality tarpaulin involves several complex production methods. For this application, Tosaf has designed special additives that are suitable for high extrusion temperatures with low plate out.



### BALE NETS AND TWINES

Trellis crop production in a greenhouse increases the expected yield per hectare, thus reducing the requirement for arable land. Due to the weight they carry, twines require superior mechanical properties.

Hay bales are produced for easier storage on farms and are widely used in hot climate zones. The bale nets must be highly reliable to protect the high-value hay.

Both twines and bale nets are produced by twisting PP tapes in a multi-step complex production process. Tosaf has developed a complete range of solutions, including UV, PA and color MB, suitable for bale nets and twine production.



### BAGS FOR PESTICIDES AND FERTILIZERS

Whether for private use or on farms, fertilizer and pesticide bags should be robust and able to withstand year-round weather conditions. Tosaf's special UV package protects the bags from premature failure that can lead to loss of content, without reacting with the content itself.

# OUR GLOBAL REACH



PRODUCTION PLANTS

SALES OFFICES