



Maximizing the value of every acre with superior protection against the damaging effects of solar stress

INCREASE MARKETABLE YIELD

ENHANCE CROP QUALITY

IMPROVE WATER USE EFFICIENCY

# PURSHADE: MAXIMIZING THE VALUE OF EVERY ACRE

## THE IMPACT OF SOLAR STRESS



The sun, while critical for photosynthesis and plant growth, can sometimes provide too much of a good thing in the form of ultraviolet (UV) and infrared (IR) radiation. UV and IR wavelengths are not visible to the human eye, but they can be harmful and cause solar stress in crops—compromising plant health and causing visible sun damage, as well as heat stress. Today solar stress is recognized as a very serious threat to the value of crops and has been shown to account for average losses in marketable yield ranging from 8% to as high as 50%—adding up to millions of dollars in economic losses annually.

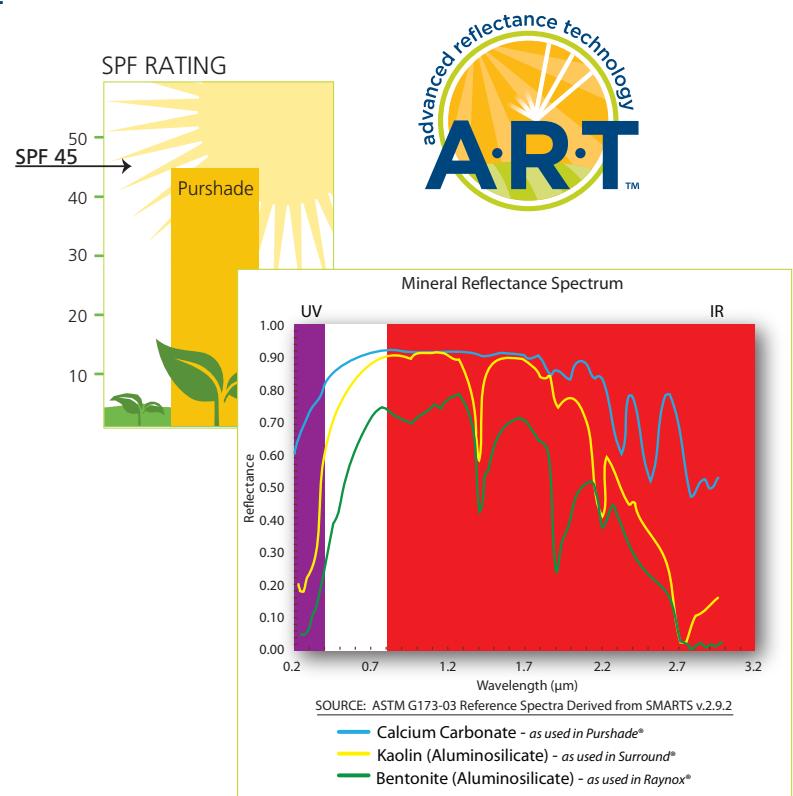
Depending on the crop, the negative effects can range from surface cell damage and discoloring to dehydration and a reduction in internal fruit quality (i.e., firmness, color, juice). Regardless of the type of damage, solar stress can dramatically reduce crop quality and hinder yield potential—both of which cut deep into a grower's profit. The good news? These problems can be prevented with the right protection.

## THE PURSHADE ADVANTAGE

Purshade® is the industry's top-performing plant protectant for preventing the damaging effects of solar stress. Based on superior materials and engineered with Advanced Reflectance Technology™ (ART™), Purshade protects plants from damaging UV and IR radiation while still allowing photosynthesis to occur. No other formulation compares with Purshade's ease of use or effectiveness at reducing sun damage and promoting plant health. Incorporating calcium-based Purshade as part of a planned spray program helps growers maximize their return from every acre planted.

Studies have shown that with Purshade, growers can experience:

- Increases in marketable yield
- Improvements in grade
- Greater efficiencies in water use



## BEST PERFORMANCE IN THE FIELD

Tested and proven, Purshade has been shown to:

- Increase marketable yield up to **30%** by reducing cullage and promoting improved plant health and crop production.
- Reduce sun damage by as much as **40%**, as well as improve crop quality with larger fruit and/or better coloring.
- Reduce plant stress by **20%–60%** and in turn improve the plant's use of available water resources.



## BEST FORMULATION

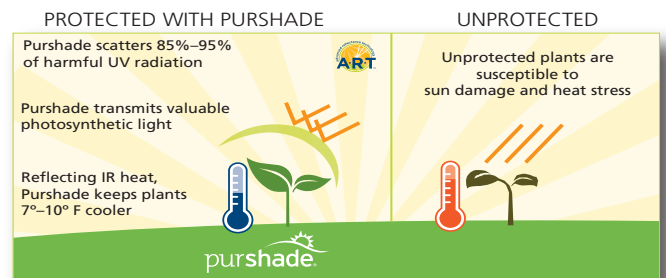
Designed with the grower in mind, Purshade was specifically formulated to be easy to mix, apply, remove, and store. Its patent-pending wet concentrate formula tank mixes, stays in suspension without re-agitation, provides uniform distribution and even coverage, and removes easily during standard post-harvest processing. Purshade can be applied using typical ground or aerial sprayers with standard nozzles, and is compatible with most fungicides and insecticides, making it easy to incorporate into an existing spray program.

## HIGHLIGHTS

- Calcium-based liquid formulation
- Easy to mix, apply, and remove
- Tank mixes, stays in suspension, and covers evenly
- Gentle on equipment
- Scatters UV light to reduce sunburn
- Keeps plants cooler by reflecting IR
- Broad compatibility
- Safe for workers
- Quality controlled
- Organic formulation available

## BEST PROTECTION

Scientifically engineered with Advanced Reflectance Technology, Purshade was built for solar protection. Sprayed directly onto the plant surface, Purshade forms an even layer of millions of microscopic “prisms,” or mirrors, that scatter 85%–95% of harmful UV radiation, but still allow valuable photosynthetic light to pass through to the plant. Tested in the laboratory and proven in the field, Purshade not only protects against sunburn, it also reflects heat-producing IR radiation, keeping the plant 7°–10° Fahrenheit cooler. This can reduce the incidence of heat stress and enable basic physiological processes to continue in high temperatures when they would normally shut down.



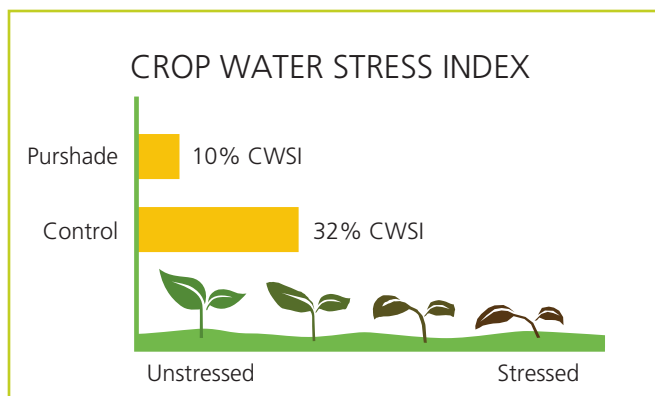
## WATER USE EFFICIENCY

The rate of photosynthesis in a plant will depend on the plant temperature and in turn the amount of water available to the plant to regulate its temperature. When temperatures rise, plants need more and more water to cool themselves. If soil moisture is high, the demands for water can be met. But when temperatures rise and soil moisture is limited, the crop will experience heat stress. During periods of stress, stomates may close to avoid cavitation, causing a reduction in photosynthesis, which in turn can limit biomass production and reduce quality potential.

By reflecting IR radiation, which causes heat, Purshade helps to keep the plant cooler, allowing for more efficient use of available water and photosynthesis to continue under solar-stress conditions. Protected by Purshade, crops are better able to:

- Extend the duration of photosynthetic activity during the day and store energy needed for biomass production during the later hours.
- Maintain normal transpiration and improve respiration.
- Lower the crop water stress index.
- Use available water in the root zone, rather than lose it to gravitational pull or evaporation.

With less stress, plants are healthier, more productive, and better equipped to resist attack from diseases and insects.



0% = no water stress. Water stress occurs when the demand for water by the plant exceeds available supply.



## PREVENTION IS THE KEY

The only way to ensure that your crops are fully protected from the damaging effects of solar stress is to start your Purshade applications early in the season—before the damage occurs. By starting early, and reapplying Purshade throughout the season, crops have the protection they need to reach their full potential, and growers have the best opportunity to maximize their return on investment.

APPLICATION RECOMMENDATIONS	
Crop	Rate of Purshade
Vines, Berries, & Small Trees	1–3 gal./acre (10–30 l/ha)
Trees (Fruit & Nuts)	2–3 gal./acre (20–30 l/ha)
Pineapples	1–2 gal./acre (10–20 l/ha)
Forestry & Nursery	0.5–3 gal./acre (5–30 l/ha)
Vegetables & Row Crops	1–2 gal./acre (10–20 l/ha)
Cereals (Corn, Grains, & Rice)	1–2 gal./acre (10–20 l/ha)
Transplant Protection	0.25–1 gal./acre (3–10 l/ha)
Soil Applications	1–5 gal./acre (10–50 l/ha)

LEGEND: gal. = gallons    ha = hectare    l = liters

*Note: This chart is not a substitute for the product label. Always refer to the Purshade label for specific recommendations and instructions before use.*



For more information:  
Toll Free (U.S.) 877.668.0303 • Main 510.580.0700 • Fax 510.580.0701  
info@purshade.com • www.purshade.com



**Purify, Protect, Preserve.**  
Manufactured by Purfresh, Inc.  
47211 Bayside Parkway  
Fremont, CA 94538