Zumsil™ plant benefits

Si has been proven to be influential in maintaining the health of many plant species for decades (Muir et al, 2001).

Plants differ in their ability to accumulate Si (Ma and Yamaji, 2006). There are some general trends in silicon accumulation in plants: monocots tend to be high accumulators and dicots poor accumulators. There are, however, exceptions to these trends with silicon accumulation varying among ecotypes of the same species (Epstein, 1999).

Plants can be categorised in terms of Si-accumulation (Jones and Handreck, 1967):
* Wetland grasses (rice and horsetail): 10-15% dry matter (High Si accumulator)
* Dryland grasses (sugarcane, cereal and turf): 1-3% dry matter (medium Si accumulator)
* Dicots (especially legumes): less than 1% dry matter (low SI accumulator)

Members of the grass family in particular accumulate Si and several reports demonstrate the importance of Si nutrition for rice and sugarcane. Large growth and yield responses appear to occur more rapidly with Si fertilization in high Si-accumulator plants than others, but low Si-accumulator species also show increased growth and health in the presence of added Si (Epstein, 1999).

Si is attributed with improvements in many plants via improved **Plant Growth, yield or disease benefits.**

Some Examples are listed:

Crop	Benefit
TurfGrass	Resistance to abiotic and Biotic stresses. EG Drought and Heat stress; Leaf Blight; Root Rot; Brown Patch; Dollar Spot; Powdery Mildew; Leaf Spot and Grey Leaf Spot.
Wheat	Reduced Powdery Mildew;
Maize	Reduced parasitism and disease, reduced Al toxicity impact
Barley,Rye and Oats	Increased Yield
Rice	Increased Yield, reduced insect and disease damage
Sugarcane	Increased Yield, reduced insect and disease damage
Pumpkin and Watermelon	Increased Growth, reduced impact of Al toxicity
Cotton	Increased Yield
Pepper	Reduced phytophthora blight and enhanced plant growth
Citrus	Increased Yield
Apples	Increased Yield and less cold induced russet
Strawberries	Increased Fruit Yield, reduced Powdery Mildew
Grape vine	Reduced Powdery Mildew