

A Nitrogen Fixing Bacteria

from **biofilm**
crop protection

Azospirillum brasilense 1 x 10⁹ cfu/ml



Az Aspen[™]

biofilm
crop protection

- ✓ For Agricultural and Horticultural Applications
- ✓ Produces healthier plants and vigorous root systems
- ✓ Nitrogen-fixing rhizosphere bacteria



Benefits of ASPEN

- » Naturally occurring bacteria that can biologically fix nitrogen as well as being a plant growth promoting bacteria
- » Increases soil and plant available Nitrogen when N levels are low
- » Produces healthier plants and more vigorous root systems
- » Tolerance of abiotic and biotic stresses is promoted by inoculation of Azospirillum in plants
- » Easy to use and can be applied via drench, in-furrow and most irrigation
- » Great synergistic benefits with other PGPR bacteria

Azospirillum can convert atmospheric nitrogen into ammonium under microaerobic conditions at low nitrogen levels, through the action of the nitrogenase complex. Azospirillum brasilense also to its capacity to synthesize phytohormones, in particular indole-3-acetic acid.

The attachment of Azospirillum cells to plant roots occurs in two steps. The polar flagellum, of which the flagellin was shown to be a glycoprotein, mediates the adsorption step. Then a surface polysaccharide in the subsequent anchoring phase.

They display a versatile C- and N-metabolism, which makes them well adapted to establish in the competitive environment of the rhizosphere. They are used for leguminous as well as non-leguminous crops in symbiosis with soil rhizobial bacteria.

Nitrogen is required in the greatest amount of all nutrients transported to plants through the soil or leaf. It drives chlorophyll production in the foliage and is one of the key elements that help keep plants green and growing efficiently.

ASPEN (Azospirillum brasilense) is a naturally occurring bacteria that are free living in the soil. tolerance of abiotic and biotic stresses promoted by inoculation of Azospirillum in plants, encompassing detoxification of oxidative stress, ISR and IST.

Seed Coating	Seedling Drench	Soil Application	Composting	Fertigation Applications
Apply at 1-2 litres per 100 kg of seed	5 litres per 100 litres of water	In furrow application @ 2 % tank mix solution over seed / up to 15 litres per Ha	Use @ 1-3 litres per M3 dependant on requirements	Apply at a rate 15 litres per ha. Maybe mixed with other organic fertilizers or plant biostimulants. Not recommended for tank mixes combined with a high salt index.