ROYAL Eijkelkamp

Meet the difference

SOLICARE Actively Aerated Compost Tea

For optimal soil and plant health

Meet the difference

Bring your soil back to life

Since 1911, Royal Eijkelkamp has been making a difference in soil and water worldwide. Our soil is the basis of our existence. The crops that humans and animals need for their survival root in it, and it is a vast reservoir for water. Water is vital for many of the earth's processes, but due to the continued increase in population, growing industrial output and climate change, we are placing more pressure on water supply and water quality. Royal Eijkelkamp is involved in soil and water projects related to land degradation, food security, urbanisation, pollution, land development and natural resources.

Only the best for your soil and your environment

A single handful of healthy soil contains billions of microorganisms, each of which is unique and plays an indispensable role in the soil's ecosystem. A healthy soil biology creates good soil structure, increases soil water capacity, and increases the amount of organic matter as well as the availability of plant-available nutrients. When soil biology is healthy, plants will be healthy and resilient as well. Healthy soil biology also helps to store substantial amounts of carbon in the soil. This results in a reduction in the amount of CO_2 in the atmosphere and is therefore an important tool in the battle against climate change. This means that by managing the soil sustainably, you are contributing to a better climate. Furthermore, good soil management can have a positive influence on your immediate surroundings: sustainable cultivation systems are biodiverse and release no or only a minimal amount of chemicals into the environment. Managing your soil sustainably therefore not only has benefits for you, but also for others. Royal Eijkelkamp supplies the know-how, the products and services that you need to make your soil healthy. Discover how you can improve your soil!

For more information, please visit our website www.royaleijkelkamp.com or contact sales@eijkelkamp.com.

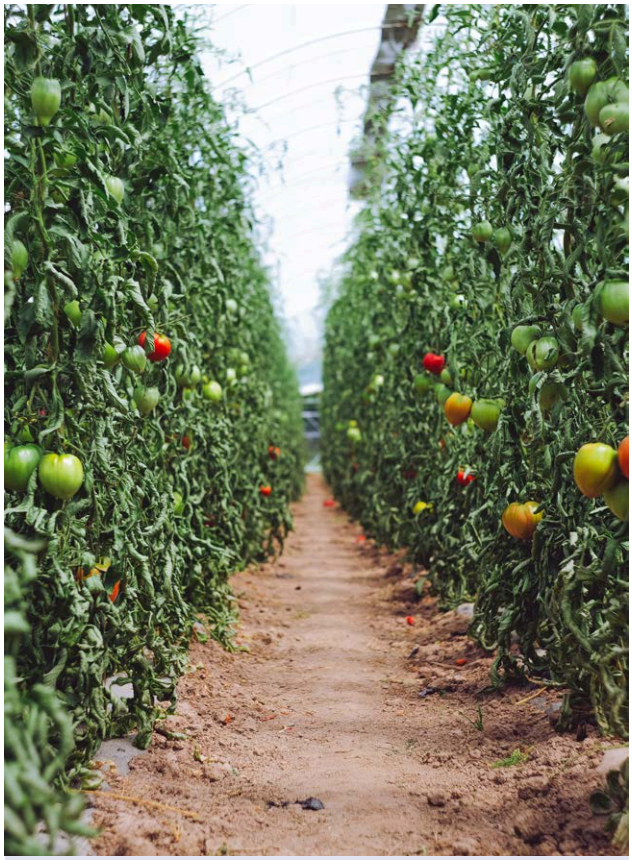
SOLICARE Actively Aerated Compost Tea (ACT)

If the soil biology on your plot is not optimal, this can have a negative influence on both soil and crop.

SOLICARE (ACT) is the solution. This actively aerated compost tea is full of essential microbiology that is vital for the formation of healthy and fertile soil. Not only does ACT provide nutrients that are immediately available to your plants, it also establishes and improves microbial life. As a result, plant-available nutritients are also guaranteed in the long term. SOLICARE ACT is a practical tool to stimulate soil life, promote plant growth and increase biodiversity.

SOLICARE ACT:

- ✓ Improves soil structure and promotes deep rooting
- ✓ Optimises the water-holding and drainage capacity of the soil
- ✓ Promotes plant resistance to diseases and pests
- ✓ Contains nutrients that can be directly absorbed by the plant
- ✓ Restores biodiversity and soil fertility



SOLICARE ACT is suitable for:

- ✓ Golf courses & sports ground management
- ✓ Viticulture & fruit cultivation
- ✓ Arable farming
- ✓ Pasture land
- ✓ Horticulture & greenhouse cultivation
- ✓ Arboriculture & avenue trees

Make your own SOLICARE ACT

You can make your own SOLICARE ACT using the SOLICARE TB-800 brewing machine and a SOLICARE brewing package. The machine and the brewing packages have been developed by Royal Eijkelkamp and have been thoroughly tested to make compost tea of a very high quality. ACT can be applied directly to the soil or foliage. There are two options to obtain a machine: direct purchase or via a rental agreement for a minimum of twelve months. We offer brewing packages particular to your company's and cultivation needs. These are supplied by a just-in-time delivery service to guarantee the highest quality.

Improving and maintaining healthy soil full of beneficial soil organisms is a process that takes several years. The results above ground cannot be seen immediately after the first few applications.

SOLICARE TB-800 brewing machine

The SOLICARE TB-800 brewing machine has been developed by Royal Eijkelkamp to make a very high-quality ACT. ACT is actively aerated, which allows only favourable aerobic microorganisms to multiply in the liquid. The SOLICARE TB-800 can brew up to 800 litres of ACT at a time. This makes the machine extremely suitable for larger areas.

- ✓ Makes high-quality organic extracts for soil and plants
- ✓ Supplies the exact and correct amount of aeration for optimal results
- ✓ Makes up to 800 litres at a time
- ✓ Easy to use
- ✓ Comes with an automatic cleaning programme

SOLICARE Brewing packages

SOLICARE brewing packages contain high-quality compost and a specially selected nutrient mix. The compost contains favourable microbiology that is needed to maintain soil life. The nutrient mix is added to the tea to allow the microbes in the compost to multiply during the brewing process. This results in a compost tea full of beneficial microbiology. This gives the compost tea a substantial effect, even on a larger scale. By using SOLISCA, our soil life analysis tool, you can measure the compost and the progress of the soil life.[1]

[1]Scan the QR code for more information on SOLISCA

Sustainable management of golf courses and sports fields

Sustainable soil management is a topical issue in the golf and sports sector. European Union guidelines and national laws for the sustainable use of pesticides make it increasingly important to drastically decrease or completely stop using pesticides on golf courses and sports fields. Chemical-free management poses many challenges, as the demands for high-quality turf made by sports clubs and athletes remain the same.

Soil compaction is often one of the greatest problems on golf courses and sports fields due to their intensive use. As soil compaction prevents the creation of a deep root system, this increases the chances of drought stress and causes the grass to lose its resilience. Growth can come to a standstill, bare spots form and fungal pathogens such as pink snow mould and dollar spot can thrive. On top of that, excessive matting is a frequently seen problem. Matting is stimulated by a high dosage of chemical fertiliser on the one hand, and a shortage of soil biology that breaks down the matting on the other.

SOLICARE (ACT) makes chemical-free soil management possible by optimising the soil biology. A healthy soil biology creates a well-structured, crumbly soil, that allows the grass to form a deep root system, which then enables better access to water and nutrients. Healthy grass with deep root formation is better armed to ward off the growth of unwanted plants and fungal pathogens. Soil with a good structure will also act as a sponge and therefore improve the water management. A healthy soil biology ensures that matting is broken down to a sufficient level. That way, your turfgrass will be healthy, resilient, and green.

At the Keppel Golf Club, we keep our greens green.

How do I use SOLICARE ACT for golf course and sports ground management?

You can apply SOLICARE ACT directly onto the grass and to the soil using a field sprayer or other spraying equipment. We advise you to apply ACT several times per growing season, depending on the initial situation, disease burden and need for fertiliser.

Sustainable viticulture and fruit cultivation

Wine and fruit growers are coming to the conclusion that sustainable cultivation methods are the future. As perennial fruit varieties grow best in fungi-dominated soil, using fungicides and herbicides will be detrimental. These damage the soil structure and water management, increase the chance of viruses and wood and foliage diseases taking hold, and reduce plant growth and resilience.

SOLICARE ACT is the solution. It contains the essential microbiology for healthy soil with an aerated structure. This will help combat compaction, resulting in deeper plant root systems and better plant health. As healthy soil acts as a sponge, this reduces the chances of competition for water, drought stress and excess water.

How do I use SOLICARE ACT in viticulture and fruit cultivation?

In viticulture and fruit cultivation, SOLICARE ACT can be applied to the soil as well as to the foliage.

Soil application

There are various options for soil application: ACT can be either applied to the entire soil area, or injected directly into the root zone. During planting, ACT can be poured into the planting hole or the roots of the planting material can be immersed in ACT. For the best result, we advise to re-apply the compost tea several times throughout the growing season.

Foliar application

When applying to the foliage, apply ACT to the whole plant using spraying equipment. As the microbiology in the ACT has been activated during the brewing process, the organisms stick to the surface of the plant. The organisms form a protective layer around the plants tissue and supply nutrients that the plant can take up through its foliage. For the best result, we advise to re-apply several times throughout the growing season. Suitable times are when the buds start to swell, and subsequently each month during the growing season. During flowering, we advise you not to apply SOLICARE ACT to the plant's foliage, as pollination is optimised under dry conditions.

During planting, the roots of the planting material can be immersed in SOLICARE ACT to provide an extra fast start.

Read more here about the scientific research on the increased resilience in grape cultivation after applying ACT. Please scan the QR code to access the article.

For further information and a plan suited to your needs, please contact one of our experts via sales@eijkelkamp.com

Greater quality and yield in arable farming

The greatest challenges for the arable farming sector are producing high yields without damaging the environment. Farmers are feeling the effects of climate change, including drought, higher temperatures and flooding. Many of these challenges are related to the condition of the soil.

Arable farms are very efficient and generate high yields. However, certain methods used in arable farming can lead to soil compaction and damage to the soil biology. Since soil compaction impairs soil water capacity, more frequent watering needs to be undertaken during dry periods – whilst during heavy rainfall, water cannot drain away. On top of that, soil compaction prevents deep root formation, leading to the plants getting less access to water and nutrients. If a plough pan has formed, a very compact, oxygen-deficient layer is created that roots cannot penetrate. This layer is damaging to the metabolism of plants, which in turn harms plant resilience, quality and crop yield.

SOLICARE ACT contains favourable microbiology that is vital for creating healthy and living soil. A healthy soil biology builds good soil structure that is rich in organic material, as well as a nutrient cycle that ensures the crop receives the essential nutrients it needs. In contemporary arable farming, nitrate is the main form of nitrogen available to plants. If the soil biology is healthy and abundant, nitrogen will be available as nitrate and as ammonium. This creates strong plant cells and, consequently, strong and resilient plants. Therefore, a healthy soil biology results in strong crops that can compete with weeds, generating high yields of quality produce.

How do I use SOLICARE ACT in arable farming?

SOLICARE ACT can be spread on the land using a field spray or other spraying equipment. It can be applied to the soil or onto the foliage. When applying to the soil, ACT needs to be spread on the land when there are no crops in the field. This is possible after harvesting one crop and prior to sowing the next. If applying to the foliage, ACT can be applied to all aboveground parts of the crop. Since the micro-organisms produce glue-like substances during the brewing process, the organisms will stick to the surface of the plant. That way, the microorganisms create a protective layer on the plant surface, making it more resilient against diseases or parasites. The organisms also release nutrients that plants can take up through their foliage. For optimal results in soil and foliar application, we advise to apply ACT several times during the growing season.

Stronger and healthier pasture land

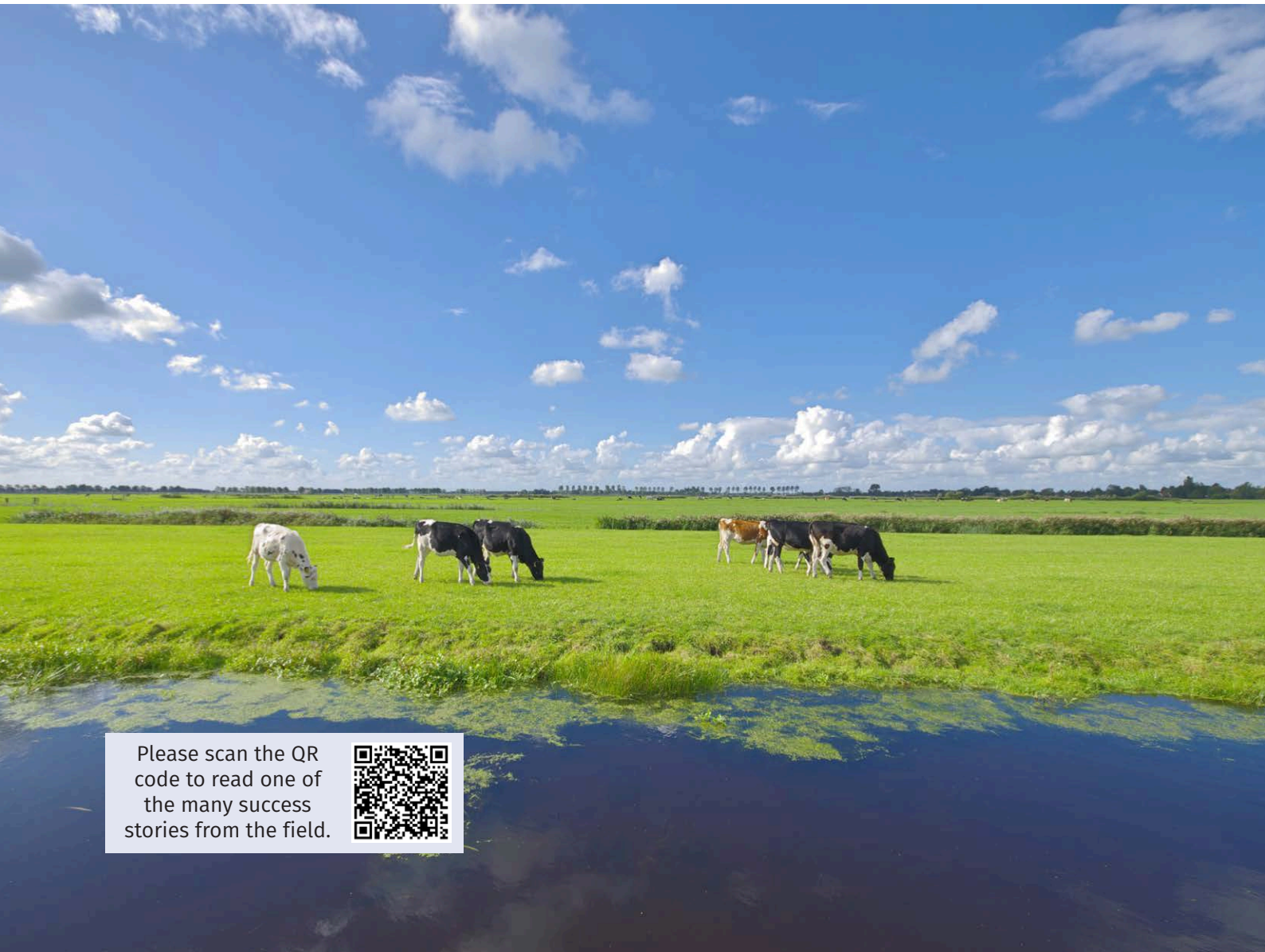
Healthy and fertile soil is the basis for healthy pasture land and therefore for animal health. Natural processes in the soil and the condition of the soil biology play an important role here.

Healthy soil has a crumbly structure, which enables grass to form deep roots. Healthy grass with deep root formation is better armed to ward off weeds, limiting their growth. The soil biology provides the grass with essential nutrients such as iron, magnesium, calcium, phosphorus, copper, zinc etc. The grass will therefore taste better and will contain all the vitamins and minerals the animal needs. Furthermore, a healthy soil biology competes with harmful organism such as animal parasites, resulting in better animal health.

If you experience problems related to grass growth, soil structure, water capacity or animal health, it may be worth it to enhance and protect your soil biology. SOLICARE ACT is an extract full of microbiology which, once applied, will establish itself and multiply in the soil. This way, the biodiversity and the soil fertility will be restored.

How do I use SOLICARE ACT for pasture land farming?

You can apply SOLICARE ACT directly onto the grass and to the soil using a field sprayer or other spraying equipment. We advise you to apply ACT several times per growing season, depending on the initial situation, disease burden and weed pressure.



Please scan the QR code to read one of the many success stories from the field.

Fertile soil for horticulture and greenhouse cultivation

Horticulture and greenhouse cultivation are highly productive cultivation systems. Achieving a high production can be challenging, especially with regards to the maintenance of soil fertility and the prevention of diseases and pests. The demand for sustainably grown organic fruit and vegetables is increasing. Growers themselves are aware that a sustainable approach with more biodiversity is the future.

If a disease threatens a crop, an intervention using pesticides may be necessary. Pesticides can harm the soil biology, especially the beneficial soil fungi. These fungi, as well as other soil organisms, are important to maintain a healthy, fertile, and well-structured soil with good water capacity. In this type of soil plants can grow deep roots and have access to all the nutrients and water they need. This will result in healthy and resilient crops.

SOLICARE ACT adds a wide spectrum of favourable bacteria, fungi, protozoa and nematodes to the soil. These include disease-suppressing organisms such as predatory nematodes, which attack harmful organisms such as root-knot nematodes and root cyst nematodes.[2] When SOLICARE ACT is applied, the organisms in it will establish themselves and multiply in the soil, restoring soil biodiversity and fertility.

How do I use SOLICARE ACT in horticulture and greenhouse cultivation?

Soil application

There are three options for soil application: ACT can be either applied to the entire soil area or poured directly into the planting hole before planting. Another option is to soak the plant's roots in SOLICARE ACT prior to planting.

Foliar application

When using ACT as a foliar application, apply it to the whole plant using spraying equipment. Since the microbiology has been activated in the ACT during the brewing process, the organisms will stick to the surface of the plant, creating a protective layer on the plant tissue. This will increase plant resilience. For optimal results, we advise to re-apply several times throughout the growing season, starting during sowing or planting. When plants are flowering, we advise not to apply SOLICARE ACT to the foliage, as pollination occurs best under dry conditions.

[2] Please scan the QR code to access further information.

Sustainable arboriculture and healthy avenue trees

There is an increasing demand for organically cultivated trees. At the same time, arboriculturists are experiencing challenges from diseases and pests, such as the oak processionary caterpillar, aphids, fungal diseases, soil-borne diseases and competing plants.

A healthy soil biology improves soil structure and tree health, in seedlings as well as in mature trees. It improves deep rooting as roots can easily penetrate into well-structured soil. Trees grow best in fungal-dominated soils, which have more fungal biomass compared to bacterial biomass. When soil biology is lacking, the soil will be bacterial-dominated, since fungi are more sensitive to disturbances than bacteria. In bacterial-dominated soils, plant-available nitrogen is predominantly available as nitrate. When soil life is rich and active on the other hand, nitrogen is available in the form of ammonium as well. This creates strong plant cells that form strong and resilient plants and trees. Beneficial micro-organisms also create a nutrient cycle, ensuring that the tree has access to essential nutrients.

SOLICARE ACT can help you successfully maintain your seedling or tree production by replenishing the biology in the soil that the trees grow in. Soils in urban areas are often bacterial-dominated, while trees need fungal-dominated soils. Urbanisation, road salt and other factors disrupt the tree's habitat. The right biology can be maintained by applying ACT on a regular basis.

How do I use SOLICARE ACT in arboriculture?

Foliar application

SOLICARE ACT can be applied directly onto the tree's foliage and branches. In doing so, useful organisms are applied to the tree's tissue, preventing harmful organisms from finding infection areas or a source of nutrients. This probiotic approach makes it easier for nutrients to be absorbed through the foliage. The surface of the plant needs to be thoroughly covered with ACT ensuring that enough beneficial organisms reach the plant's surface.

Soil application

By pouring ACT around the base of the tree a few times until it is completely soaked, useful organisms will be established and can do their work all year round. When cultivating seedlings, this application will create a strong root system.

Source: Weltzein, H. C. 1991. *Biocontrol of foliar fungal diseases with compost extracts.* p. 430 450. In: John H. Andrews and Susan S. Hirano (ed.) Microbial Ecology of Leaves. Springer-Verlag, New York, NY.

For further information and a plan suited to your needs, please contact one of our experts via sales@eijkelkamp.com

Guidelines for SOLICARE applications*

Cultivation type	Soil	Foliage (per hectare)	Number of applications per growing season	Total number of brewing packages per growing season
Golf (greens)	400 L (green)	not applicable	5	50 (per 20 greens)
Sport & Golf	800 L (per hectare)	not applicable	5	5 (per hectare)
Viticulture & fruit cultivation	400 L (per hectare)	200 L	4 / 5	9 (per 2 hectare)
Arable farming	200 L (per hectare)	100 L	3 / 3	6 (per 4 hectare)
Pasture land	200 L (per hectare)	not applicable	5	5 (per 4 hectare)
Horticulture & greenhouse cultivation	400 L (per hectare)	100 l	7 / 2	9 (per hectare)
Arboriculture & Avenue trees	400 L (per hectare)	800 l	2 / 3	5 (per hectare)

*Sustainable soil management is multifaceted. Success in terms of soil and plant health does not depend on the use of SOLICARE ACT alone, but also on other factors such as the initial situation of the soil and soil tillage. For example, the use of heavy and other kinds of machinery, frequent treading, leaving the soil uncovered, and the use of fertilisers and pesticides can have a negative effect on soil structure and plant health.

ROYAL Eijkelkamp

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