

# Hesi Product Dictionary

## Hesi Root Complex



**Hesi Root Complex is an elixir for clones and young plants, but also mother plants and plants under stress.**

Root Complex is a combination of trace elements with vital components (vitamins, amino acids, plant sugars and enzymes) that provide young plants with an optimal start.

**In addition, Root Complex ensures a thicker stem and a strong root system.**

After repotting and other stressful circumstance, Hesi Root Complex improves the overall condition of the plant. Root Complex stimulates a maximum colonization of healthy micro-organisms in the medium.

**Root complex is ideal for mother plants and clones.**

Add some Hesi Root Complex to the mother plant a few days before the **clones are cut**, this will ensure that the new plants will already have all the required substances for taking root rapidly.

**Plants that have been cared for using Hesi Root Complex have a perfect start and are healthy and strong.**

Plants feel stress too. Repotting, for example is hugely stressful, as they have to form new roots before they can grow properly again. Changes in location and light also cause plants stress. Root Complex helps to normalize a plants metabolism fast!

**USE: pour in the feeding water;** this can also be done in combination with SuperVit, Powerzyme, and other nutrients.

**For young plants:** 1 to 2 times a week until the plant grows well

**In case of stress:** 1-2 times

With regular use over a long period of time, half the dosage is enough. (e.g. for mother plants)

**Dosage:**

**50ml / 10 L**

**With long term use:**

**25ml / 10L**

**Can be used on all systems:**

**Soil, Hydro and Coco**

## **Hesi PowerZyme – Enzyme extract for Plants!**



**Ensures a clean and oxygen-rich plant medium.**

**Strengthens the plants and the roots.**

**Improves the microflora and raises the resistance.**

The roots of a plant constantly renew their outer hull. Old cells are repelled and replaced by new ones. The faster a root grows, the more old root material ends up in the plant medium. Old plant parts mainly consist of cellulose. Only special micro-organisms can demolish cellulose. They transfer cellulose into plant-active grape sugar. The roots directly use the sugar for food. When a part of a plant (like leaf or root) is no longer useful for the plant, it takes all the transportable content like minerals out (that's why they turn yellow) and the cellulose is left behind. The plant then gets rid of the dead leaf or root. A plant renews its parts constantly. This is why indigestible cellulose remains are left in the medium, which is being contaminated increasingly. In nature there are special micro-organisms, especially fungus, which digest the plant fibres with the help of **enzymes**.

**Hesi PowerZyme is an extract made out these specialized micro-organisms, and contain these enzymes in its pure form.** The big advantage of pure enzymes is that no quaint micro-organisms can disturb the healthy microflora.

**What are enzymes?** Enzymes are protein molecules, which catalyse the metabolism. /for every task there is a special species of enzymes. Enzymes have two vital advantages:

1. They work 100% independently from cells, therefore they are also isolated in an extract.
2. They can repeat their task many times (working some days without stopping) until they are used up.

For this reason Hesi PowerZyme must be used regularly, to keep the plant medium in an optimum condition.

**Rotting plant parts debilitate the oxygen levels, but with hesi PowerZyme, oxygen content in the medium is always maximal.**

Hesi PowerZyme is suitable for every plant medium in evry stadium of the cycle.

**Use :** Add to the feeding water at least 1 time a week or regularly together with the nutrients and other boosters. Don't Spray.

## Hesi SuperVit



Hesi SuperVit is a highly concentrated mix of vitamins and amino acids that improve the metabolism and overall health of the plant. This results in stronger growth and better flowering. SuperVit is suitable for all plants and applications.

How is all of this possible?

**SuperVit is a mix of 15 vitamins and 10 amino acids**, that all play a large role in the metabolism of a plant. The vitamins and amino acids (vital substances) of SuperVit are the building blocks of, among other things, plant hormones, enzymes and chlorophyll.

**With SuperVit plants get important building materials ready to use. The Plants don't need to produce them anymore. Which saves time and energy!**

**Plants** can produce these building blocks themselves from minerals, but with **Hesi SuperVit** **the plants are with the vital substances in a ready-to-use form**. This saves time and energy. The energy that this saved is noticeable as an improvement in the growth and flowering and as optimal resistance and health.

The flower production is boosted, the light absorption of the plant is improved and the metabolism is accelerated. SuperVit activates growth and flowering hormones and is suitable during all periods of the plants cycle.

**Plants are healthier if they are taken care of by SuperVit! And they more, stronger flowers**

### **THE USE of SuperVit:**

**SuperVit is used throughout the entire cycle. Add to the feeding water or spray.**

**Dosage: one drop of SuperVit per 4.5 litres of water (= 1ml for 65 L)**

**Do not overdose SuperVit**

**Suitable for all growing methods: soil, hydro and coco**

# Hesi Soil Fertilizer

Plant cultivation in a soil substrate differs from hydroponic systems in many points. Soil holds water and nutrients longer and enriches unused materials itself. That is why Hesi nutrients are free of ballast materials and rich in organic fertilizer, so that the planting soil is barely affected.

## TNT Complex for the growth period

Hesi TNT Complex is a very powerful growth supplement, which is easy on the plants. The nitrogen used is 100% organic. Organic nitrogen compounds have no EC value because they are not salts, but they do contain a high percentage of nitrogen. Therefore young plants are loaded with a minimum of salts, which creates ideal growing conditions. So, it appears that TNT Complex has a low EC value, but its degree of effectiveness is very high. TNT Complex contains all the necessary nutrients and has been enriched with many vital components (vitamins, amino acids, plant active sugars) which guarantee successful growth. Plants treated with TNT Complex develop a large number of growing points and become strong and powerful with healthy green colour. Never overdose with TNT complex, because this will cause the plant to grow too high and it will then consume too much energy for the transport of the roots to the tops at the end of the cycle.

**TNT Complex is ideal for mother plants and clones.**

Use: Add to feeding water during growth

Dosage: 50 ml / 10 L

For very young plants and mother plants 25ml / 10L

## Hesi Bloom-Complex for the flowering phase

Hesi Bloom Complex provides all the necessary substances to flowering plants for their extra needs during flowering. Apart from the nutrition (nitrogen, phosphorus, potassium, magnesium, calcium, trace elements etc.), Hesi Bloom Complex has also been enriched with vital components (amino acids and vitamins) that stimulate the development of the plant in an optimal manner. **The result of this is an exuberant bloom!** In addition, Hesi Bloom Complex contains a pH corrector. The pH of the feeding water is corrected to a slightly acidic value. Bloom Complex contains no unnecessary ballast and is therefore fully absorbed by the plant. The trace elements have been stabilized in organic complexes. That is why they remain available and stable at all pH levels, until they are absorbed by the roots. Moreover, Bloom Complex contains two kinds of nitrogen: mineral and organic. All of this apparently

keeps the EC content low with high effectiveness and activity of the nutrients. This is the reason why you should not base the doses of hesi nutrients in EC values, which you are used to doing with other supplement brands.

**Therefore do not overdose!**

**Use:** add to the feeding water during the flowering phase.

**Dosage:** 50 ml / 10 L

## **Hesi Phosphorus Plus**

**Flowering amplifier**

Hesi Phosphorus Plus is used in combination with the Hesi Bloom Complex in the second half of the flowering phase. During flowering, the plant develops an increased need for phosphorus and potassium. Using Phosphorus Plus, we give plants the right means at the right moment: phosphorus for extra formation of flowers and potassium for a fast transport to flowers.

Hesi soil nutrition has been balanced to the ratios in the soil environment and ensures that the plants are taken care of in an optimal manner. Thanks to the use of high-quality ingredients, the plants absorb all the substances offered to them so that no residues are left behind.

**With Phosphorus Plus the formation of the flowers is more powerful!**

**Use:** add to the feeding water in the second half of the flowering phase along with Hesi Bloom Complex

**Dosage:** 25 ml / 10 L

# Hesi Hydro Fertilizer

**Hydroponic fertilizers immediately provide all the necessary nutrients in the correct concentration to the irrigation water so that the nutrients can be absorbed immediately and sufficiently when passing the roots.**

Hesi Hydro supplement is available in a growth and bloom version. In Hesi Hydro Growth and Bloom the usual A and B components have been united in one bottle. This provides a maximum of comfort along with optimal nutrition. Hesi Hydro contains complex-binding substances that keep the trace elements stable and make them tolerant to the nutritional components. Because of this they remain stable until they are absorbed by the plant. Furthermore, the complex-binding substances make the trace elements independent of the pH-value, so that these remain available at every level.

All Hesi supplements are enriched with vitamins and other vital elements that take extra care of the plant and enhance its growth and flowering, but also encourage the development of micro-organisms in the medium. Especially in hydro systems a healthy medium is important because the systems do not contain biological microbes in the beginning.

## Hesi Hydro Growth for the growth period

Hydro Growth contains proportionally more nitrogen components than Hydro Bloom, because in the growth phase the plant uses a lot more nitrogen for the production of new plant parts. The vital components are fully geared to the growth period, and this is why the plant is pampered in a hydro medium as well.

**Use:** add to the feeding water (in your hydro system)

**Dosage:** 50 ml / 10 L

## Hesi Hydro Bloom

Hydro Bloom contains a higher concentration of phosphorus and potassium components compared to the Hydro Growth. Plants have an increased need for phosphorus as well as potassium in order to create strong and healthy flowers. During the first half of the bloom, this need is satisfied for 100% by Hesi Hydro Bloom. In the second half of the flowering phase, Hesi PK 13/14 is added together with Hydro Bloom in order to fulfil the needs entirely. Hydro Bloom Contains a mix of vital substances that is particularly geared to the flowering phase.

**Use:** Add to the feeding water during flowering (in your hydro system)

**Dosage: 50 ml / 10 L**

## **Hesi PK 13/14 to boost flowering**

Plants have an increased need for phosphorus as well as well as potassium in the flowering phase, by applying PK 13/14 we completely fulfil this need.

The flowering phase is the supreme point in the life of the plant. The metabolism is then working at full power and large quantities of enzymes are being produced for flowering. Furthermore, the plant gets bigger and therefore needs more components. The specific substances that are responsible for this are phosphorus (enzymes and hereditary characteristics) and potassium (for the transport within the plant)

To ensure that the plant is not unnecessarily loaded with ballast or an excess of salts, Hesi PK 13/14 should be used starting from the second half of the flowering phase up to one week before the end of the cycle. The dosage is gradually increased over the final weeks of the flowering phase. PK 13/14 is balanced to Hesi Hydro and Hesi Coco.

**Use:** add to the feeding water during the second half of the flowering phase.  
(in your hydro system)

**Dosage: Starting from the 2<sup>nd</sup> half of the flowering phase: start with lowest dosage (2.5ml/10L)**

**Gradually increase dosage up to the highest dosage (15ml/10L)**

# Hesi Coco Fertilizer

**Coco substrate is used both in pot cultivation and in hydroponic systems, Coco is neutral, but can hold different minerals such as calcium. Hesi Coco fertilisers have been adapted for this.**

## **TNT Complex for the growth period**

Hesi TNT Complex is a very powerful growth supplement, which is easy on the plants. The nitrogen used is 100% organic. Organic nitrogen compounds have no EC value because they are not salts, but they do contain a high percentage of nitrogen. Therefore young plants are loaded with a minimum of salts, which creates ideal growing conditions. So, it appears that TNT Complex has a low EC value, but its degree of effectiveness is very high. TNT Complex contains all the necessary nutrients and has been enriched with many vital components (vitamins, amino acids, plant active sugars) which guarantee successful growth. Plants treated with TNT Complex develop a large number of growing points and become strong and powerful with healthy green colour.

**TNT Complex has a low EC value as it contains many organic materials, nevertheless: never overdose, otherwise plants will grow too long!**

**Use:** Add to feeding water during growth

**Dosage:** 50 ml / 10 L

**For very young plants 25ml / 10L**

## **Hesi Coco**

Hesi Coco is THE supplement for flowering on coco substrates. Just like all the HESI supplements, Hesi Coco has been stabilized thanks to complex-binding substances and it is free of unnecessary ballast.

**Hesi Coco is not an A & B supplement, the A+B components are united in one bottle.**

Hesi Coco contains both organic and mineral nitrogen. All trace elements have been stabilized in protecting complexes and have been enriched with vitamins and other vital elements both for the flowering. This way, a perfect balance is created in the system a fast build-up of healthy micro-flora is achieved. It is possible that the EC of Hesi Coco is

somewhat lower than other coco supplements because no salts have been added, since this would only raise the EC and these would be of no nutritional value to the plant (ballast). It is therefore important that the maximum dose is not exceeded.

**Use: Add to feeding water.**

**Dosage: 50ml/10L**

**(if you only want a short period of growth (e.g. one week), you can use 30ml/10L dosage of Hesi Coco instead of TNT Complex)**

## **Hesi PK 13/14**

Plants have an increased need for phosphorus as well as well as potassium in the flowering phase, by applying PK 13/14 we completely fulfil this need.

The flowering phase is the supreme point in the life of the plant. The metabolism is then working at full power and large quantities of enzymes are being produced for flowering. Furthermore, the plant gets bigger and therefore needs more components. The specific substances that are responsible for this are phosphorus (enzymes and hereditary characteristics) and potassium (for the transport within the plant)

To ensure that the plant is not unnecessarily loaded with ballast or an excess of salts, Hesi PK 13/14 should be used starting from the second half of the flowering phase up to one week before the end of the cycle. The dosage is gradually increased over the final weeks of the flowering phase. PK 13/14 is balanced to Hesi Hydro and Hesi Coco.

**Use: add to the feeding water during the second half of the flowering phase.**

(in your hydro system)

**Dosage: Starting from the 2<sup>nd</sup> half of the flowering phase: start with lowest dosage (2.5ml/10L)**

**Gradually increase dosage up to the highest dosage (15ml/10L)**

# pH-Correctors

## The pH-value of the nutrient solutions

For the with hydro and coco it is necessary that the feeding water is set to a certain pH value. This pH range is around pH 6 (5.8 – 6.2). But small deviations above or below this value are still acceptable.

The reason for this is the feeding water determines the root environment because the hydroponic mediums are neutral and only give support to the roots, they cannot store the nutrient particles.

**For soil this is different**, since it is able to store nutrients and distribute them to the plant over several days, during which the pH value in the soil itself decreases.

The feeding water for **hydro and coco cultivation** however actually runs along the roots and must at this point contain all the substances in the proper concentration required by the plant. That is also why the pH-value must be optimal at the time of feeding, in order to be able to absorb all nutrients maximally.

**If the pH is much lower**, the roots could be damaged

**If the pH is much higher**, the plant can no longer absorb all nutritional components

Furthermore, plants like constant pH-values, which makes it necessary to check and, if needed, to adjust the pH of the nutrient reservoir for hydroponic cultivation.

**Use as little acid as possible, as this increases the EC and changes the NPK**

The Hesi line contains three different types of pH-correction products:

**pH minus Growth**, nitric acid 38%

Functioning: lowers pH-value

Use: during growth

**pH minus Bloom**, Phosphoric acid 59%

Functioning: lowers the pH-value

Use: during flowering

**pH plus**,

Potassium hydroxide 50%

Functioning: raises the pH-value

Use: during the growth and flowering.

**Dosage** : Carefully correct the pH-value in the nutrient reservoir as need and record the quantity of consumed pH-correctors for subsequent feedings.