



*[translator's notes are italicised and in brackets]*

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*[oblong stamp reading:*

**RESEARCH INSTITUTE OF HORTICULTURE**  
**DEPARTMENT OF CULTIVATION AND FERTILISATION OF HORTICULTURAL PLANTS**  
**ORNAMENTALS CULTIVATION AND FERTILISATION LABORATORY**  
96-100 Skierniewice, ul. Waryńskiego 14  
phone/fax 46 834 55 47

Skierniewice, 02.12.2015

RO-88/15

## OPINION

of the Research Institute of Horticulture in Skierniewice

regarding the fitness of growth stimulant under trade name of "TOTAL-HUMUS" in the cultivation of ornamental plants

This opinion has been commissioned directly by the manufacturer of growth stimulant under the name of "TOTAL-HUMUS", Eko World Matylda Mazur-Zaskurska, ul. Traugutta 1B, 66-460 Witnica. The opinion is based on documentation supplied by the manufacturer: declaration, abridged description of production technology, report of physical, chemical and biological tests performed in the Institute of Soil Science and Plant Cultivation of the State Research Institute in Pulawy, opinion on meeting quality requirements and the maximum content of impurities issued by the Institute of Soil Science and Plant Cultivation of the State Research Institute in Pulawy, and report on agricultural research performed in the Research Institute of Horticulture in Skierniewice.

**1. Name of growth stimulant: "TOTAL-HUMUS"**

**Type of growth stimulant:** organic

**Form of growth stimulant:** semi-liquid, black

**2. Manufacturing technology**

"TOTAL-HUMUS" growth stimulant is manufactured using lignite - humic acid extracts.

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*Kordylewska*



**3. Declaration of company:** Eko World Matylda Mazur-Zaskurska, ul. Traugutta 1B, 66-460 Witnica.

The manufacturer has declared the following indicators characteristic specific to the "TOTAL-HUMUS" growth stimulator.

Item	Values (% m/m)
Nitrogen content (N)	at least 0.4
Phosphorus content (P <sub>2</sub> O <sub>5</sub> )	at least 0.1
Potassium content (K <sub>2</sub> O)	at least 0.3
Organic carbon content	at least 6.2

**4. Assessment of suitability of the growth stimulator for use in line with the intended purpose**

The Research Institute of Horticulture in Skierniewice assessed the effectiveness of growth stimulator under the name of "TOTAL-HUMUS" in the cultivation of *Tagetes patula nana fl.pl.* "Aurora", *Salvia splendens* "Ramona" and Mexican paintbrush *Ageratum houstonianum* (test report dated 6.09.2015) and in the rooting of cuttings of ornamentals, i.e. (*Pelargonium zonale*), *Osteospermum* (*Osteospermum*) and petunia (test report dated 27.08.2015). The influence of the product on the growth and development of plants was assessed in experiments.

The tests showed that the application of "TOTAL-HUMUS" growth stimulator in the cultivation of bedding plants stimulated the growth of the root system and made a significant impact on their further development. A material impact of the tested growth stimulator on the vegetative growth, initiation of flower buds and blooming. Also a stimulating impact of the product on the development of lateral shoots - tillering. The best effects of how "TOTAL-HUMUS" growth stimulator works in the cultivation of ornamentals were observed when the product was applied prior to planting, in concentration of 0.05% and during vegetation every 7-10 days in concentration between 0.02-0.04%.

The tested growth stimulator also proved to be effective in the rooting of ornamentals. The tests performed at the Institute in Skierniewice demonstrated a stimulating impact of the tested product on the development and quality of the root system. It has been found that the "TOTAL-HUMUS" growth stimulator may be used to soak the cutting base or to water the soil prior to the propagation of cutting. The best effects of the "TOTAL-HUMUS" growth stimulator in rooting were observed if the cutting base was soaked in stimulator solution at 0.01 % or if the soil was watered with solution at 0.1 % prior to the propagation of cutting. Good effects were also recorded after applying the tested stimulator in the cultivation of maternal plants - watering the plants with solution at 0.2% 2 weeks prior to the planned cutting.

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*Matylda Mazur-Zaskurska*





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The tested growth stimulator did not cause any negative changes in the plants. Taking the above into consideration, I hereby conclude that growth stimulator under the name of "TOTAL-HUMUS" may be recommended for the cultivation of ornamentals in line with its instructions for use.

**5. Information on the impact of the growth stimulator, correctly applied, on the human and animal health, and on the environment**

Based on the results of physical and chemical tests of the "TOTAL-HUMUS" growth stimulator, conducted at the Main Chemical Laboratory of IUNG - PiB in Puławy (test report no. 15S21 dated 31.08.2015) and biological tests in the Department of Agricultural Microbiology of IUNG - PiB in Puławy (report no. 15S21 dated 08.06.2015), the "TOTAL-HUMUS" product does not contain any impurities, parasite eggs or bacteria. In the light of the binding legal regulations, the application of the product, following the instruction, in the cultivation of ornamentals, does not pose a direct or indirect threat to human or animal health and to the environment.

**6. Information on the compatibility of the growth stimulator with plant protection products, for stimulator designed for combined application.**

Growth stimulator under the name of "TOTAL-HUMUS" is not compatible with plant protection products and therefore it should not be used in combination with such products.

**7. Approved draft of instructions for use (appended)**

I hereby approve, without remarks, the instructions for use and storage of growth stimulator under the name of "TOTAL-HUMUS".

Opinion drawn up by:

[oblong stamp:

acting HEAD OF THE ORNAMENTALS  
CULTIVATION AND FERTILISATION LABORATORY

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dr inż. Jacek Nowak]

[oblong stamp: RESEARCH INSTITUTE OF  
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I, Agata Kordylewska, certified translator of the English language entered in the register of certified translators kept by the Minister of Justice under entry number TP/48/13, do hereby certify the above to be a true and faithful translation of the document presented to me in the Polish language.

Translation no. 126/2017

Poznań, 19 December 2017

Agata Kordylewska

