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**D E C I S I O N**  
of 22. November 2002

**Case Number:** T 0777/01- 3.3.5

**Application Number:** 95200611.2

**Publication Number:** 0673901

**IPC:** C05F 3/00

**Language of the proceedings:** EN

**Title of invention:**  
Composting method and obtained compost

**Applicant:**  
Smit, Berend Jan

**Opponent:**  
-

**Headword:**  
Composting method/SMIT

**Relevant legal provisions:**  
EPC Art. 56

**Keyword:**  
"Inventive step - no, obvious solution to a known problem"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 0777/01 - 3.3.5

**D E C I S I O N**  
of the Technical Board of Appeal 3.3.5  
of 22 November 2002

**Appellant:** Smit, Berend Jan  
36, Roosdomsweg  
NL-7475 AK Markelo (NL)

**Representative:** Prins, Hendrik Willem  
Arnold & Siedsma  
Advocaten en Octrooigemachtigden  
Sweelinckplein 1  
NL-2517 GK Den Haag (NL)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 11 January 2001  
refusing European patent application  
No. 95 200 611.2 pursuant to Article 97(1) EPC.

**Composition of the Board:**

**Chairman:** R. K. Spangenberg  
**Members:** G. J. Wassenaar  
M. B. Günzel

## Summary of Facts and Submissions

- I. European patent application No. 95 200 611.2, publication No. 0 673 901, was refused by a decision of the Examining Division. The decision was based on three sets of claims.

Claim 1 of the main request read as follows:

"Method for composting cellulose containing verge waste resulting from mowing of verges and/or cellulose containing ditch waste resulting from cleaning ditches which waste is not permissible to spread over land, comprising the steps of:

- (i) removing solid particles, such as stones, sand and iron parts from the verge and/or ditch waste;
- (ii) mixing the verge and/or ditch waste with manure in a ratio of 0.5:2;
- (iii) dewatering the mixture to a dry substance content of about 40-80%; and
- (iv) aerobically composting the dewatered mixture at a temperature of 50 to 90°C such that detrimental components present are inactivated, into compost usable on agricultural land."

Claim 1 of the auxiliary request differs therefrom in that the expression "not permissible to spread over land" was replaced with "a negative demand material".

Claim 1 of the second auxiliary request differs from claim 1 of the main request in that the expression "not permissible to spread over land" was deleted.

II. The following prior art documents were considered:

D1 = FR-A-2 673 070,  
D2 = EP-A-0 235 637,  
D5 = EP-A-0 506 139,  
D6 = FR-A-2 639 634,  
D7 = DE-A-3 932 002.

During the proceedings the appellant made reference to D8. a letter from the "Unie van Waterschappen" to its members dated 1 April 1998, discussing problems relating to the disposal of verge and ditch mowings.

The Examining Division held that the subject-matter of claim 1 according to the main request lacked clarity within the meaning of Article 84 EPC and that the subject-matter of claim 1 of the auxiliary requests lacked an inventive step over D1 when taking into account D2, D5, D6 and D7.

According to the Examining Division the definition of the cellulose-containing waste materials by indicating their origin and the way they were obtained, did not clearly differentiate these waste materials from other cellulose containing waste materials. The requirement that it was not permissible to spread the waste over land was not clear without indicating the permission-giving authority. With respect to inventive step they considered that D1 represented the closest prior art and that the processes according to claim 1 of the auxiliary requests differed therefrom essentially only in the selection of the cellulose-containing waste material. The appellant had, however, not shown any technical effect arising from the choice of the selected waste material.

III. The appellant lodged an appeal against this decision. He argued that the invention concerned the disposal of verge and ditch waste which was no longer allowed to be spread on the land and that the state of the art consisted in dumping the waste at considerable cost. The technical problem underlying the invention was therefore to process verge and ditch waste so that dumping costs were decreased or avoided. Since this problem was not treated in D1, this document was, contrary to the Opposition Division's opinion, not the closest prior art and not suitable as a starting point for considering inventive step. Solving the problem by composting the waste material as now claimed was not obvious because the skilled person would not have expected that contaminants present in the waste material could be removed in this way. The prior art did not disclose a process in which the chemical waste character of verge and ditch waste was transferred into a valuable product. The present waste material should not be compared with grass and garden materials which did not possess the waste character which set a bar to any processing unless it could be shown that the waste character was removed by that processing. In this respect reference was made to D8.

IV. In the annex to the summons to attend oral proceedings, the Board indicated as its preliminary opinion that even if the appellant's view of the technical problem underlying the invention was taken as a starting point for inventive step considerations the claimed process seemed to be obvious on the basis of common general knowledge and the teaching of D5. The Board was unable to detect a prejudice against composting the waste material used in the claimed process in the available prior art documents.

- V. By a letter dated 18 November 2002 the appellant informed the Board that he would not attend the hearing. Oral proceedings took place as scheduled on 22 November 2002 in the absence of the appellant.
- VI. The appellant requested in writing that the decision under appeal be set aside and a patent be granted on the basis of the claims according to the main request filed with the letter dated 20 March 2000 or one of the auxiliary requests filed during oral proceedings before the Opposition Division on 29 November 2000.

### **Reasons for the Decision**

1. The appeal is admissible.
2. It follows from the general concept of the expression "waste" in the context of the disposal of verge and/or ditch waste that this waste is a negative demand material which may not be spread over land. The explicit mention of these requirements in addition to "waste" in claim 1 of the main and first auxiliary request, therefore, does not limit the scope of these claims with respect to claim 1 of the second auxiliary request. Thus for the issue of inventive step the subject-matter of claim 1 of all the requests can be treated as being the same.
3. Claim 1 comprises a process whereby verge waste resulting from mowing of verges is mixed with manure, whereafter the mixture is dewatered and the dewatered mixture aerobically composted. According to the submissions of the appellant this verge waste has chemical waste character which is removed by the claimed process which produces a valuable product which can be used as fertilizer on agricultural land.

According to the published patent application the mowings from verges are a waste material because it is no longer permissible to spread such waste over the land and it can only be dumped at increased costs (column 1, lines 9 to 21). It is further indicated that the verge waste may comprise solid particles such as stones, sand and iron parts, which should preferably be removed before the composting process, but there is no disclosure that the waste is chemically contaminated (column 4, lines 46 to 50). Also D8 does not disclose any chemical contamination of verge mowings. It confirms that such mowings may no longer be spread over land and discusses further legal limitations in the Netherlands with respect to the disposal of such waste material. Although D8 does not belong to the state of the art (the letter was written after the effective filing date of the patent application and it is not sure that it belongs to the public domain) the Board does not dispute that its content might represent the knowledge of a person skilled in the art dealing with the problem of the disposal of verge mowings at the priority date of the patent application (14 March 1995). According to D8, the main reason why verge mowings should be removed is based on ecological considerations, namely the wish to reduce the nutrients in the verges (D8, point 1). There is no indication in D8 that the problem of disposal of verge mowings has anything to do with a contamination by chemicals.

4. The Board does not dispute that D1 does not disclose the composting of verge waste and that such waste can be distinguished from other cellulose-containing waste material specifically mentioned in D1 such as bark, grape seeds and straw (page 4, lines 18 to 20). The Board therefore accepts that, with respect to the method of present claim 1, D1 does not represent the closest prior art, and that state of the art is rather the disposal of verge mowings by dumping. In agreement

with the presentation in the patent application and the submissions of the appellant during prosecution the problem underlying the alleged invention can be seen in the disposal of the verge waste in an economical and ecologically acceptable manner which avoids dumping costs (points 12 to 14 of the grounds of the appeal). This problem has become urgent because legislation in many countries has prohibited or limited the dumping of organic waste materials such as verge waste so that, independent of cost savings, alternatives for dumping the waste had to be found. The appellant proposes to solve this problem by composting the verge waste in the presence of manure following the process steps according to claim 1. Since in many cases the disposal of manure is also a cost factor and ecologically problematic and since it is further plausible that the compost obtained has commercial value the Board is satisfied that the claimed method actually solves the above-mentioned problem.

5. The composting of vegetable waste is common general knowledge. Specific composting processes for the production of organic fertilizers are disclosed in D1 to D7. As an alternative to dumping vegetable waste materials such as verge waste, the skilled person would therefore consider a composting treatment in the hope of obtaining a suitable fertilizer. Verge waste resulting from mowing of verges consists to a considerable amount of grasses and is not essentially different from the waste with which every gardener is confronted. It is the well known experience of every gardener that by simply making a heap of said waste the composting process is very slow. It is, however, also common general knowledge that the composting process can be accelerated by adding nutrients for the composting bacteria, by improving the aeration and by increasing the temperature. Almost everybody living in a country with intensive cattle-breeding is also aware



of the large-scale problem of the disposal of manure and at least a graduate of an agricultural high school knows that these disposal problems are related to the high nitrogen and phosphorus content of the manure and that these elements are nutrients for the composting bacteria. The existence of a surplus manure problem is addressed in D5 (column 1, lines 10 to 24). It is also acknowledged by the application itself (column 1, lines 6 to 8). For these reasons the Board holds that it is obvious to the skilled person trying to solve the said problem to use a composting process whereby manure is added and conditions are chosen to maintain a high temperature. The more specific process parameters now claimed correspond to the process conditions known in the literature concerning the rapid composting of mixtures of manure and vegetable waste material such as grasses; see D5, column 2, lines 13 to 50, disclosing grasses as the cellulose-containing organic waste, a moisture content of 45 to 65 % by weight and a composting temperature of 40 to 90°C to obtain a suitable organic fertilizer. In the process according to D5 the composting is performed in an apparatus with shearing and kneading means. In such a case it is evident that solid particles such as stone and iron particles are removed before the mixing operation, but also in cases where composting is performed without such an apparatus a skilled person will as a routine matter remove such particles before the verger waste is mixed with the manure. A specific mixing ratio is not mentioned in D5 but the optimum ratio can easily be determined by a skilled person. There is no indication that the mixing ratio in present claim 1 is unusual in the art. Moreover the optimum ratio depends on the specific composition of the starting materials. In present claim 1 the mixing ratio does not clearly limit the scope of the claim without indication of the water content of the starting materials.

6. The appellant's essential argument that the skilled person would not have considered composting the verge and ditch waste because they contained a contaminating component which would not be removed by a composting process so that the product obtained would still contain the contaminating components rendering the product useless, is not convincing. As already indicated above under point 3 of the reasons there is no indication in the prior art or the description of the application that verge waste is generally chemically contaminated. The Board is also unable to find any support in the application as originally filed for the appellant's allegation that by mixing the waste with manure and de-watering the mixture specific contaminants are removed. The only contaminants in verge and ditch waste mentioned in the application are weed seeds (column 1, lines 35 to 41) and solid particles such as stones, sand and iron parts (column 3, lines 46 to 50). These are respectively removed by composting at high temperatures and mechanical separation means, not by de-watering. The Board does not dispute that verge mowings might contain heavy metal and herbicide contaminants but there is no indication that they are generally present to such a degree that verge waste should be considered as chemically contaminated and unsuitable for further processing. If that were the case, the product obtained according to the present application would also be useless. It has not been demonstrated that by the process according to claim 1 the amount of these contaminants can be substantially reduced. A reduction of these contaminants by de-watering is also unlikely because they are generally not or hardly soluble in water. Moreover, in the process as outlined in Figure 1 of the application clean water obtained by reverse osmosis is removed from the process (line 24). Dirty water is recycled (lines 18 and 25) so that any

chemical contaminants present in the water after the de-watering step are reintroduced into the compost mixture. The appellant's allegation that the liquid component of manure surprisingly removes the waste character of verge mowings is thus not substantiated. The waste character of both the verge mowings and the manure is removed by the composting process as such, producing a useful organic fertilizer, but that could be easily anticipated by a skilled person.

7. The Board further holds that the legal hindrance for the disposal of verge mowings referred to in D8 does not apply to mowings which are converted to compost insofar as the resulting compost itself fulfils the requirements of the Fertilizer Act (Mests-toffenwet 1977); see D8, point 2. It follows from point 6 of the reasons that the skilled person had no reason to suspect that composted verge mowings would not satisfy the conditions laid down in the Fertilizer Act.
  
8. For these reasons the Board holds that the subject-matter of claim 1 of the main and the auxiliary requests lacks an inventive step within the meaning of Article 56 EPC, so that all the requests must fail.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

U. Bultmann

R. Spangenberg