



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
23.02.2000 Bulletin 2000/08

(51) Int. Cl.⁷: **C13D 3/16, C13F 1/02**

(43) Date of publication A2:
17.11.1999 Bulletin 1999/46

(21) Application number: **99108020.1**

(22) Date of filing: **23.04.1999**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **13.05.1998 IT GE980039**

(71) Applicant: **ERIDANIA S.p.A.**
16128 Genova (IT)

(72) Inventors:
• **Mantovani, Giorgio**
44100 Ferrara (IT)
• **Vaccari, Giuseppe**
45039 Stienta (Rovigo) (IT)

(74) Representative:
Porsia, Attilio, Dr.
c/o Succ. Ing. Fischetti & Weber
Via Caffaro 3/2
16124 Genova (IT)

(54) **Method for the production of white sugar of commercial quality from microfiltered or ultrafiltered raw beet juice**

(57) Method for the preparation of white sugar of commercial quality from raw beet sugar, including the following operations:

- microfiltration or ultrafiltration of the juice, after separating the organic and mineral particles whose size is above 50 microns, using membranes whose size is between 5000 MWCO and 0.5 micron;
- juice sweetening;
- juice concentration in multi-effect evaporators;
- cooling crystallisation of the juice thus obtained;
- separation and washing of the crystals.

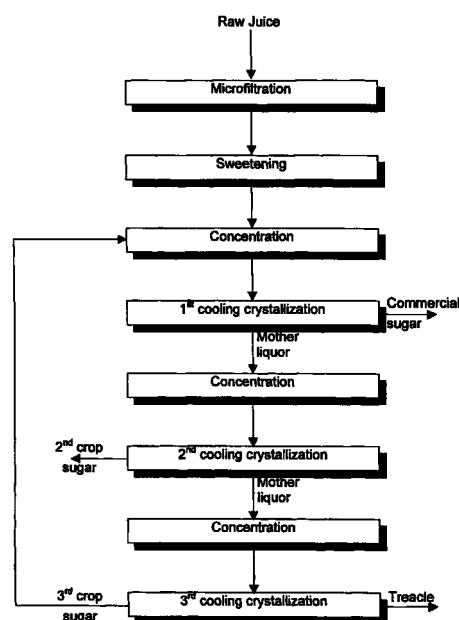


Fig. 1



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 10 8020

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
D,X	US 5 554 227 A (THEOLEYRE MARC-ANDRE ET AL) 10 September 1996 (1996-09-10) * column 3, line 65 - column 5, line 15; claims 1,2,6-8 *	1,7,9	C13D3/16 C13F1/02
X	US 4 115 147 A (SHIMIZU JUNICHI ET AL) 19 September 1978 (1978-09-19) * column 2, line 6-68; claims 1,2; examples 1,2 *	1,4,7-9	
X	WO 95 27798 A (INT FOOD PROCESSING INC) 19 October 1995 (1995-10-19) * page 8, line 14 - page 9, line 7; claim 5; examples 1,2 * * page 10, line 7-11 * * page 17, line 21 - page 18, line 17 *	1,4,6,8,9	
A	VACCARI G: "Elimination of the traditional purification by raw juice crystallization" L'INDUSTRIA SACCARIFERA ITALIANA, vol. 90, no. 5, page 151-161 XP000865517	1-3	
X	* page 151, paragraph 2; figures 5,9,10 *	9	TECHNICAL FIELDS SEARCHED (Int.Cl.6) C13D C13F
A	VACCARI & AL.: "Cooling crystallization or raw juice:Results of the second years pilot plant experimentation" INTERNATIONAL SUGAR JOURNAL, vol. 95, no. 1138, page 381-390 XP000857744 Ferrara	1-3,5	
X	* page 382, line 1 - page 383, line 1; figures 3,5,8 *	9	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30 December 1999	Examiner Tallgren, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03 82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 10 8020

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

30-12-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5554227 A	10-09-1996	AU 698506 B	29-10-1998
		AU 7776394 A	18-05-1995
		BR 9404350 A	04-07-1995
		CN 1105705 A	26-07-1995
		EG 20282 A	30-07-1998
		EP 0655507 A	31-05-1995
		US 5902409 A	11-05-1999
		ZA 9408722 A	03-07-1995
US 4115147 A	19-09-1978	JP 1241806 C	26-11-1984
		JP 52120137 A	08-10-1977
		JP 59012278 B	22-03-1984
WO 9527798 A	19-10-1995	US 5468300 A	21-11-1995
		AU 681516 B	28-08-1997
		AU 2279595 A	30-10-1995
		AU 692864 B	18-06-1998
		BR 9507316 A	30-09-1997
		EP 0754244 A	22-01-1997
		JP 9511651 T	25-11-1997
		US 5468301 A	21-11-1995