



# Euberry – Kick of Meeting : Report and Plan of Activities P1 – UPM - IT Marche Polytechnic University, Università Politecnica delle Marche

Since July 1st: Dipartimento di Scienze Agrarie, Alimentari ed Ambientali Department of Agriculture, Food and Environmental Science





D1.1 - Fully integrated databases for each genus incorporating pre-commercial germplasm (P1, P2, P3, P6, P8).

First Year - 2011

Varieties	SD Varieties	<b>DN Varieties</b>	North	- Center	Adapt.	South Adapt
49	39	10		36		13
Advance	d Selections	SD Selectio	ons	DN Sele	ctions	]
	60	53		/		
Backcross	s Selections	F3 Selection	s F2	Selection	ns F1	Selections
	57	25		31		1

#### **STRAWBERRY**

(Fragaria x ananassa):

(F1, F2, F3 F. viginiana glauca) Second Year - 2012

Varieties	SD Varieties	<b>DN Varieties</b>	North - Center Adapt	South Adapt.
50	40	10	36	14

Advanced Selections	SD Selections	<b>DN Selections</b>
28 + new selections	21 + ?	7 + ?

<b>Backcross Selections</b>	F3 Selections	F2 Selections	F1 Selections
To be defined on data	To define on data	To define on data	1-12





Type of Plant: **Frigo plants** Date of planting: **25/07/2010** Cultural System: **In Soil - Open field** Type of soil: **calky and clay soil** 

#### Bal. Tritatable Rot Total Comm. Total Soluble Misshaped Undersize acidity **Firmness** Precocity Fruit Chroma L\* b\* Cultivar Country Fruits Yeld Solid a\* Discarded Yeld Index Weight (g/plant) (megNaOH/ (g) Index (g/plant) (g/plant) (g/plant) (g/plant) (g/plant) (°Brix) 100g FW) (g) **ADRIA** ITA 149 31,2 145 115 186 446 1232 1677 6,13 10,77 461 35,72 35,83 20,83 41.46 24,0 70 263 1088 36,55 40,81 23,92 ALBA ITA 135 70 123 1351 6,67 13,10 480 47,31 ASIA ITA 142 26,8 1 29 97 127 1203 7,00 9,23 338 35,83 37,87 23,22 44,42 1331 BETTY FRA 140 19.0 13 274 152 440 1042 1482 7,13 9,22 398 34,42 34,65 19,45 39,74 CANDISS 143 21,3 89 896 37,88 36,67 20,93 0 9,63 11,12 42,26 FRA 74 163 1059 348 CLERY 20,5 271 894 ITA 137 12 98 161 1165 7,93 10,10 394 37,30 39,74 24,49 46,69 **CRISTINA** ITA 152 30,8 8 88 93 188 1219 1407 7,27 10,58 334 39,02 41,38 25,58 48,66 7 **FIGARO** 145 18,6 121 252 486 7,50 9,65 405 40,18 38,99 26,74 47,28 NL 124 738 23,8 32 35,73 36,83 20,23 10 125 17,73 MALWINA DE 164 83 366 490 9,10 318 42,03 NORA ITA 137 18,4 18 165 102 285 896 1181 7,87 11,80 497 36,59 41,60 23,50 47,78 109 **ROMINA** 135 18,8 54 69 233 810 7,47 10,20 520 34,94 39,20 22,32 ITA 1043 45,11 **SONATA** 147 18,0 3 810 8,50 9,28 288 37,80 37,77 23,62 NL 213 92 308 1118 44,56 142 14,0 25 SWEET EVE UK 17 81 123 197 320 12,40 11,43 560 36,94 40,43 22,04 46,06

#### Strawberry: Preliminary results of first Year - 2011





D1.1 - Fully integrated databases for each genus incorporating pre-commercial germplasm (P1, P2, P3, P6, P8).

	First Year - 2011
	- Evaluation field planted in november 2010
	Varieties n° 13 Selections n° 10
<b>BLUEBERRY</b> <i>V. corymbosum</i> L.	No production in the first year, for plants development
<i>V. virgatum</i> Aiton	Second Year - 2012
	Other 5 new varieties and other to be defined will be added





D1.1 - Fully integrated databases for each genus incorporating pre-commercial germplasm (P1, P2, P3, P6, P8).







D1.2 - Integrated sets of characterised germplasm for strawberry, raspberry, blackberry, currant and blueberry across the climatic zones of the EU as a core collection to be used for breeding programs (P1, P2, P3, P5, P6, P8).

- The work covers strawberry (*Fragaria*), currants (*Ribes*), raspberry/blackberry (*Rubus*), and blueberry (*Vaccinium*) species. To identify key germplasm with enhanced traits linked to increasing crop quality and consumer acceptability, we will highlight:
- (i) Shelf-life and storage ability
- (ii) Flavour components
- (iii) Nutritionally active components

- To identify key germplasm with enhanced traits linked to increasing crop value and grower profitability, we will also highlight:

- (i) Yield components (berry number and size, marketable yield)
- (ii) and disease resistance for sustainable production
- (iii) Environmental plasticity, for climatic adaptation
- (iv) Extension of cropping season through flowering characteristics





D1.4 - Defined new varieties for cultivation in specific EU areas and cultivation systems (strawberry, raspberry, blackberry, currant and blueberry) (P1, P2, P3, P5, P6).

## Which strategy?

-New varieties from our breeding program

- Identification of commercial varieties to adapted to center south EU

- Priorities for creating new berries: "Traditional" Quality as Quality Attributes (QA) Firmness, Colour,
  - Soluble Solids (SS) content and
  - Titratable Acidity (TA)
- Nutritional Attributes (NA) Complex evaluation of many factors
- The primary factor is the fruit Total
- **Antioxidant Capacity (TAC)**
- TAC, phenols and anthocyanins content
- as Nutritional Attributes (NA)







Healthier fruit of better quality

Nutritional quality: new Concept of Quality (QA and NA)

Increased consumer acceptance and health





### ROMINA - AN99.78.51 NEW VARIETY 2011





-Cultivation area (42°N to Northern conditions)
 -High adaptability to not fumigated soil
 -Very early ripening
 -Fruit conic or bi-conic shape
 -Good taste whit sweetness (high sugar and low acidity)
 -High firmness and shelf life
 -High vitamin C and Folate contents

Marketing for health benefits

# **CRISTINA - AN01.211.51**

#### NEW VARIETY 2011



-Cultivation area (41°N to Northern conditions)
-High adaptability to not fumigated soil
-Very late ripening
-High productivity (81 % commercial production)
- Large Fruit (33 g FW) of conical shape
- Good flavor

## **BREEDING PROGRAM**

### PLANT PRODUCTIVE PARAMETERS OF SELECTIONS FROM INTER AND INTRA-**SPECIFIC CROSS POPULATIONS, EVALUATED IN 2010.**

	СС	Fruit weight <sup>(a)</sup>	Misshapen <sup>(a)</sup> / Plant	Undersize <sup>(a)</sup> /plant	Rot fruit <sup>(a)</sup> /plant	Comm. Pr. <sup>(a)</sup> / plant	Tot. Prod. <sup>(a)</sup> / Plant
F2 FVG	AN07,003	11.7 (0.6)	18.5 (5.4)	110.5 (19.1)	78,8 (16,6)	349.0 (26.7)	556.8 (39.2)
AMILIES	AN07,004	13.9 (1.0)	10.4 (2.9)	116.7 (20.2)	48,4 (7,8)	356.7 (52.7)	532.1 (54.0)
	AN07,005	12.9 (0.1)	15.0 (3.5)	190.8 (38.7)	62,4 (12)	300.5 (41.2)	568.6 (67.9)

	СС	Fruit weight <sup>(a)</sup>	Misshapen <sup>(a)</sup> / plant	Undersize <sup>(a)</sup> /plant	Rot fruit <sup>(a)</sup> /plant	CommPr <sup>(a)</sup> / plant	Tot prod <sup>(a)</sup> / plant
F3 FVG	AN07,006	14,4 (0,8)	15,1 (3,9)	162,1 (21,9)	77,2 (7,7)	401,6 (29,3)	656,1 (41,9)
FAMILIES	AN07,215	13,6 (0,5)	3,9 (1,5)	97,8 (31,3)	135,6 (34,8)	265,6 (35,3)	502,2 (40,1)
	AN07,216	14,7 (0,9)	10,7 (4,1)	110,5 (28,2)	51,1 (11,5)	376,3 (48,9)	548,6 (76,3)

	сс	Fruit weight <sup>(a)</sup>	Misshapen <sup>(a)</sup> / plant	Undersize <sup>(a)</sup> /plant	Rot fruit <sup>(a)</sup> /plant	CommPr <sup>(a)</sup> /pla nt	Tot prod <sup>(a)</sup> / plant
FxA	AN07,007	16.3 (1.0)	27.5 (5.1)	103.0 (11.5)	182.0 (32)	464.3 (38.9)	776.8 (57.7)
FAMILIES	AN07,009	18.0 (0.6)	22.1 (5.7)	76.3 (14.8)	190.9 (36.4)	431.1 (38.2)	720.4 (80.3)
	(a)= grams						





D1.5 - Validate genes controlling fruit nutritional quality and plant flowering (P1, P5, P6).

Current transformation and regeneration systems for both octoploid cv. 'Calypso' (everbearing) and cv. 'Sveva' (short-day) strawberry at **P1** and **P6** will be used to transfer genes identified and isolated in Task 1.2 by **P5** and **P6**.

Ready to perform regeneration and transformation when new construct will be ready





D2.2 - Develop methods to modify strawberry plant architecture in nursery production (P1, P2, P6, P8, P9, P14), to avoid summer hot temperature for strawberry and raspberry in S Europe (P1, P13, P14) and understanding of berry physiology affected by environment in C and S Europe (P14, P10), flower-bud differentiation and chilling requirement (P8).

See presentation from Gianluca Savini – P13 for a joint collaboration





# D2.3 - Methods for improved propagation, plant protection and resource use efficiency in berry (P1, P2, P6, P7, P8, P9, P11, P13, P14,).

#### First Year 2011

With the aim to evaluate the possibility to adopt in vitro culture for the production of nursery mother plants, nursery plots were prepared by comparing mother plants of Alba, a well know commercial variety in EU, propagated with standard *in vitro* and *in vivo* (frigo plants) protocols.

The nursery performance of the two types of mother plants was analyzed by detecting the following parameters: number of crown per plant, number of leaves per plant, petioles length, number of runners and stolons on each plant, stolons diameter and stolons roots length. These data were detected at the end of the nursery propagation cycle.



### Results





#### from (mm) to (mm) Class A++ > 15 A+ 12 14,9 Α 8 11,9 Α-6 7,9 < 5,9 Discard

Test SNK P ≤0,05









# D2.3 - Methods for improved propagation, plant protection and resource use efficiency in berry (P1, P2, P6, P7, P8, P9, P11, P13, P14,).

#### 2° Year 2012

- Results of second cycle of mother plant propagation (vitro and frigo)

- Results of daughters plants resulting from the first cycle of propagation:

- phenotype
- production
- quality





D2.4 - Methods to modify growth conditions in tunnels for season extension (P1, P2, P11, P13, P14).

DAVIDE

D2.5 - Develop method for crop season extension of raspberry in C and N Europe and blackberry and blueberry in S Europe (P2, P8, P14,).

GIANLUCA





D3.1 - Delivery of standard operating procedure for all analytical approaches with respect to fruit quality and composition and sensory parameters (P1, P3, P10, P14).

#### Sensorial parameters analytical methodologies

<u>Soluble Solids (SS)</u>: evaluated by hand held refractometer (ATAGO, IT). Results expressed as °Brix.

<u>Titratable acidity (TA)</u>: evaluated by titration using solution of NaOH 0.1N and bromotymol blue indicator. Results expressed as meq NaOH/100g FW.

Firmness (F): evaluated by penetrometer using star shape tip. Results expressed as grams (g).

<u>Chroma index and L\* grade</u>: evaluated by tristimulus method using a Konica Minolta CR-400 Colorimeter.





D3.1 - Delivery of standard operating procedure for all analytical approaches with respect to fruit quality and composition and sensory parameters (P1, P3, P10, P14).

#### NUTRITIONAL PARAMETERS ANALYTICAL METHODOLOGIES :

Extraction of nutraceutical compounds in methanol solution on *Fragaria* fruits and in acidified methanol solution on *Rubus, Vaccinum and Ribes* fruits

<u>Total Antioxidant Capacity (TAC</u>): on *Fragaria* evaluated by the **ABTS assay**, according to a previously validated procedure (Miller et al., 1993). On *Rubus, Vaccinum and* Ribes by **Ferric Reducing Antioxidant Power (FRAP)** (Benzie and Strain 1996). Results expressed as mg Trolox Equivalent/Kg Fresh Weight (mg TE/Kg FW);

<u>Total Phenol Content (TPH)</u>: evaluated by the Folin-Ciocaltou's reagent method (Slinkard and Singleton 1977). Results expressed as mg Gallic Acid/Kg FW

Total Anthocyanin Content (ACY): measured by the pH differential shift method (Giusti and Wrolstad, 2001). Results expressed as mg Pel-3-Glu/Kg FW

Flavonoid Content (FLC): measured by using a colorimetric method (Dewanto et al., 2002). Results expressed as mg of Catechin/Kg FW.

<u>Ascorbic Acid Content (VitC)</u>: measured by using HPLC evaluation as described by Helsper (2003). Results expressed as mg of Ascorbic acid/Kg Fw).





D3.2 - Identification of strategies to maximize and/or enhance fresh fruit quality via novel pre-harvest approaches including resistance induction and biocontrol (P1, P3, P9).

#### 1<sup>st</sup> year: postharvest treatments

Fruits (cv Camarosa) were immersed in solution of resistance inducers, then incubated at 20 C for 4 days (left), or stored 7 days at 0 C, followed by 3 days shelf life at 20 C (right). Gray mold and Rhizopus rot infections occurring from natural innoculum already present on the berries were recorded. RNA was extracted from fruit tissues and expression of a list of genes involved in disease resistance is in progress.







D3.2 - Identification of strategies to maximize and/or enhance fresh fruit quality via novel pre-harvest approaches including resistance induction and biocontrol (P1, P3, P9).

### Sub-Task 3.2.1 Preharvest treatments

#### 2<sup>nd</sup> year: preharvest treatments

The resistance inducers that provided the best results in the first year trials will be tested in the field on cv Alba, using a fungicide as a control. Strawberries will be sprayed at different phenological stages, ripen fruits will be harvested and stored 7 days at 0 C, followed by 3 days shelf life at 20 C. RNA will be extracted from fruit tissues and expression of a list of genes involved in disease resistance will be carried out to understand the mechanisms of action of the inducers and eventually improve their effectiveness.

#### **3**<sup>rd</sup> year: preharvest treatments

A selection of treatments that provided the best results in the 2<sup>nd</sup> year field trials will be applied again in different conditions (e.g. sensitive vs resistant cvs). Results will allow to provide a protocol for growers to control postharvest decay of strawberry through the use of resistance inducers.





D3.2 - Identification of strategies to maximize and/or enhance fresh fruit quality via novel pre-harvest approaches including resistance induction and biocontrol (P1, P3, P9).

#### Sub-Task 3.2.2 Postharvest strategies for the maintenance of fruit quality

#### **1**<sup>st</sup> year – hypobaric treatments

First data allowed to define that a pressure range between 0.25 and 0.75 atm for 4 h was effective for the control of postharvest gray mold and Rhizopus rot of strawberries

#### 2<sup>nd</sup> year – hypobaric treatments

Trials will be repeated for pressure level and duration, with fruits exposed to the tratments, then stored at room temperatures or cold stored and later exposed to shelf life. Gene expression in fruits will be investigated to assess the physiological changes involved. Quality of fruit exposed to the treatments will be evaluated.

#### **3**<sup>rd</sup> year – hypobaric treatments

The treatments that provide the best results will be applied in large scale experiments. Quality of fruit exposed to the treaments will be evaluated.









Gray mold incidence (%)

В

С



Gray mold incidence (%)



Gray mold severity (1-5)



Gray mold severity (1-5)



Gray mold severity (1-5)



McKinney Index (%)



McKinney Index (%)



McKinney Index (%)



Fruit stored at 0 C for 7 days, followed by 2 (A), 3 (B) and 4 (C) days shelf life at 20 C





# D3.3 - Evidence for the human health benefits of fresh fruit in validated human digestion, bioavailability and disease model systems (P1, P3, P4).

Joint studies for the following tasks have to be discussed.

Derek lets see your plan.

Sub-Task 3.3.1 Impact of digestion of fruit polyphenols (P3, P1, P4)

Sub-Task 3.3.2 - Bioavailability and metabolism studies (P3, P1, P4)

Sub-Task 3.3.3 – Plant polyphenol bioactivities (P3, P1, P3, P4, P9)

# **3. NUTRACEUTICAL VALIDATION**



- The aim of this study was to explore the potential antioxidant effects of strawberry fruit, added to a semi-synthetic and isoenergetic long term diet, on Adryamicin (10 mg/Kg body weight) induced oxidative stress in rats.
- The effect of strawberry fruit was tested by comparing two strawberry cultivars:
- •Adria, having an average values of antioxidant capacity, but with high anthocyanin content.
- •Sveva, having high values of total antioxidant capacity related to high content of phenol compounds.
- Rats experimentation consisted of a sixteen weeks feeding trial with an AIN93 modified diet, where 10% percent of diet calories were replaced with lyophilized strawberry fruit from the two cultivars, compared with two groups of animals fed with a standard AIN93 diet.
- •A: **6 rats** fed with AIN93 modified diet, where 10% of the total calories were substituted with Ice-dried strawberry fruit of cultivar ADRIA, subjected to Adryamicin injection;
- •S: **6 rats** fed with AIN93 modified diet, where 10% of the total calories were substituted with Ice-dried strawberry fruit of cultivar SVEVA, subjected to Adryamicin injection;
- •D: 6 rats fed with AIN93 diet;
- •E: 6 rats fed with AIN93 diet, subjected to Adryamicin injection.

# **3. NUTRACEUTICAL VALIDATION**



### HEMATOLOGICAL AND CLINICAL ANALYSIS RESULTS













D3.4 - Characterization and quantification of quality and nutritional/nutraceutical data from the germplasm derived from improved cultivation studies (WP2) (P1, P2, P3, P4, P5, P10, P14).

NUTRITIONAL PARAMETERS ANALYTICAL METHODOLOGIES :

Extraction of nutraceutical compounds in methanol solution on *Fragaria*, and in acidified methanol solution for *Rubus*, *Vaccinum and Ribes* 

<u>Total Antioxidant Capacity (TAC</u>): on *Fragaria* evaluated by the **ABTS assay**, according to a previously validated procedure (Miller et al., 1993). On *Rubus, Vaccinum and* Ribes by **Ferric Reducing Antioxidant Power (FRAP)** (Benzie and Strain 1996). Results expressed as mg Trolox Equivalent/Kg Fresh Weight (mg TE/Kg FW);

<u>Total Phenol Content (TPH)</u>: evaluated by the Folin-Ciocaltou's reagent method (Slinkard and Singleton 1977). Results expressed as mg Gallic Acid/Kg FW

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- <u>Flavonoid Content (FLC)</u>: measured by using a colorimetric method (Dewanto et al., 2002). Results expressed as mg of Catechin/Kg FW.
- <u>Ascorbic Acid Content (VitC)</u>: measured by using HPLC evaluation as described by Helsper (2003) with some modification. Results expressed as mg of Ascorbic acid/Kg Fw).





D3.4 - Characterization and quantification of quality and nutritional/nutraceutical data from the germplasm derived from improved cultivation studies (WP2) (P1, P2, P3, P4, P5, P10, P14).

#### First Year 2011

With the aim to evaluate the nutritional and sensorial quality on *Fragaria* fruits a set of variety mainly cultivated across center-southern Europe, new selections of *F. x* ananassa, F1, F2 and F3 backcross selections of *F. virginiana spp. glauca* x *F. x* ananassa genotypes originated within the UNIVPM breeding program will be analysed for sensorial and nutritional parameters.

STRAWBERRY	Varieties 32	SD Varieties	DN Varieties 7		
(Fragaria x ananassa):	Advance	d Selections	SD Selections	DN Select	ions
<sup>-</sup> 1, F2, F3 F. viginiana glauca)		39	32	7	
	FVG Backo	ross Selectio	ns F3 Selections	F2 Selections	F1 Selections
		57	25	31	1

Type of Cross	SS	TA	FIRMNESS	CHROMA	L*	TAC	ТРН	ACY
F2	9.40 a	12.28 b	336.00 b	44.48 b	34.24 b	20.25 a	1707.46 a	464.16 a
F3	8.99 a	13.55 a	330.79 b	42.67 b	34.75 b	21.42 a	1708.72 ab	484.34 a
IS	8.45 b	10.49 c	381.77 a	46.84 a	37.54 a	14.37 b	1517.32 b	353.97 b

## **BREEDING PROGRAM**

#### FRUIT SENSORIAL AND NUTRITIONAL PARAMETERS OF SELECTIONS FROM INTER AND INTRA-SPECIFIC CROSS POPULATIONS, EVALUATED IN 2010.

	СС	SS <sup>(a)</sup>	TA <sup>(b)</sup>	FIRMNESS <sup>(c)</sup>	CHROMA	L*	TAC <sup>(d)</sup>	TPH <sup>(e)</sup>	ACY <sup>(f)</sup>
	AN07,003	9.32 ns	11.75 b	338.85 ns	34.49 ns	45.55 ns	20.91 b	1604.53 b	494.6 a
F2 FVG	AN07,004	9.07 ns	13.37 a	321.51 ns	34.41 ns	44.29 ns	23.54 a	1875.13 a	429.08 b
FAMILIES	AN07,005	9.79 ns	12.01 al	o 349.33 ns	33.85 ns	43.51 ns	16.17 c	1650.77 ab	457.77 ab
	СС	SS <sup>(a)</sup>	TA <sup>(b)</sup>	FIRMNESS <sup>(c)</sup>	CHROMA	L*	TAC <sup>(d)</sup>	TPH <sup>(e)</sup>	ACY <sup>(f)</sup>
	AN07,006	8.93 ab	12.48 b	341.07 ns	35.60 a	42.88 ab	22.88 b	1558.72 b	498.49 ns
F3 FVG	AN07,215	9.44 a	15.38 a	312.41 ns	35.54 a	44.81 a	27.21 a	1964.33 a	446.10 ns
FAIVIILIES	AN07,216	8.53 b	12.71 b	336.47 ns	33.62 b	41.09 b	15.12 c	1657.34 b	505.69 ns
	сс	SS <sup>(a)</sup>	TA <sup>(b)</sup>	FIRMNESS <sup>(c)</sup>	CHROMA	L*	TAC <sup>(d)</sup>	TPH <sup>(e)</sup>	ACY <sup>(f)</sup>
	AN07,007	8.42 ns	11.4 a	363.58 b	39.69 a	41.96 a	14.78 a	1690.76 a	288.94 b
FxA EAMILIES	AN07.009	8.78 ns	9.74 b	398.71 a	35.73 b	38.94 b	13.80 b	1363.16 b	393.35 a
TAIVILLED									

<sup>(a)</sup> Brix; <sup>(b)</sup> meq NaOH/100g FW; <sup>(c)</sup> g; <sup>(d)</sup> mmol TE/Kg FW; <sup>(e)</sup> mg GA/Kg FW; <sup>(f)</sup> mg PEL-3-GLU/Kg FW





D3.4 - Characterization and quantification of quality and nutritional/nutraceutical data from the germplasm derived from improved cultivation studies (WP2) (P1, P2, P3, P4, P5, P10, P14).

#### Second Year 2012

The evaluation on nutritional and sensorial quality will continue for the second year on *Fragaria* and *Vaccinum* fruits.

#### STRAWBERRY

(Fragaria x ananassa):

(F1, F2, F3 F. viginiana glauca)

		_				
37	30	7				
Advance	d Selections	SD Selectio	ons	DN Select	ions	
	28	21		7		
				-		
FVG Back	cross Selectio	ns F3 Selectio	ons l	2 Selections	F1 Se	ections

#### BLUEBERRY

(Vaccinum corymbosum L.) (Vaccinum virgatum Aiton)

Varieties (V. corymbosum)	Selections (V. corymbosum)	Selections (V. virgatum)
13	9	1
13	9	1





D3.4 - Characterization and quantification of quality and nutritional/nutraceutical data from the germplasm derived from improved cultivation studies (WP2) (P1, P2, P3, P4, P5, P10, P14).

#### Second Year 2012

The evaluation on nutritional and sensorial quality will continue for the second year on *Fragaria* seedlings originated within UPM breeding program. A number of 15 to 30 offsprings will be studied for the nutritional attributes for each cross combination

ST	RA	WE	BER	RY

(Fragaria x ananassa):

<b>Cross Combination</b>	Female	X	Male
AN10,002	AN04,048,51	Х	ALBA
AN10,007	AN99,078,51	Х	CLERY
AN10,014	AN02,119,53	Х	ALBION (RIF)
AN10,015	AN02,199,55	Х	ALBION (RIF)
AN10,016	AN01,211,51	Х	SIRYA
AN10,017	AN99,078,51	Х	SIRYA
AN10,021	AN04,079,56	Х	ANTEA
AN10,024	AN05,019,53	Х	NORA

- These objectives will be attained by the following Tasks:
- •
- <u>Task 5.1 Scientific Dissemination</u>
- Sub-Task 5.1.1 Science Communication Office
- Sub-Task 5.1.2 Scientific publications in peer-reviewed journals (To Define a plan Availability of JBR)
- Sub-Task 5.1.3 Participation in international scientific events (Poster ISS Beijing China February 2012)
- Sub-Task 5.1.4 Organization of scientific meetings (proposal for a stakeholders meeting to be organized in June 2012 in Wagenigen joint to the Vaccinium Symposium <u>www.vaccinium2012.com</u> )
- •
- <u>Task 5.2. Scientific and Technical Training To be planned</u>
- Sub-Task 5.2.1 School network addressed to PhD students, advisors and technical staff of berry industries
- Sub-Task 5.2.2 Technical education and training to advisors and technical staff
- Sub-Task 5.2.3 Demonstrative field visits
- •
- <u>Task 5.3 Web and Public Dissemination</u>
- Sub-Task 5.3.1. Project webpage (<u>http://www.euberry.univpm.it/</u>)
- Sub-Task 5.3.2. Project podcast and videos
- Sub-Task 5.3.3. Dissemination material and Newsletter
- Sub-Task 5.3.4. Public Conferences

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# LOGO





Subject: DG RTD: Newsworthy Updates on EUBERRY Project From: "Liudmila Basmakova" • <l.basmakova@media-consulta.com> Date: Fri, September 23, 2011 4:25 pm To: "b.mezzetti@univpm.it" <b.mezzetti@univpm.it> Priority: Normal Options: View Full Header | View Printable Version | Download this as a file Dear Bruno Mezzetti, As agreed over the phone I am forwarding you a little bit more information on our request for information forwarding in regards to EUBERRY Project. As you will likely be aware, part of DG-RTD's remit is to generate interest in the bio-economy and raise awareness of the challenges it has to face. DG-RTD is therefore partnering with Media Consulta to communicate news from DG-RTD's research projects to a wider audience. The cooperation of each scientific project officer will be essential for the success of this effort. As such we are asking you to contact me back as we who will be working with a team of scientific journalists. If you could let them know of any upcoming publications, recent discoveries or any other newsworthy items then they will contact you to ensure that such news is communicated to journalists as best as possible. The team would greatly appreciate as much notice as possible so that they can schedule press release items ahead of time. So if your project is due to reach a particular milestone over the next few months, be sure to get in touch. Many thanks for your cooperation, Milla Basmakova ------------ MEDIA CONSULTA International Holding AG Milla Basmakova Wassergasse 3 10179 Berlin Tel.: +49-(0)30-65 000-363 Fax: +49-(0)30-65 000-150 I.basmakova@media-consulta.com<mailto:I.basmakova@media-consulta.com> www.mediaconsulta.com<<u>http://www.media-consulta.com/</u>>Amtsgericht Charlottenburg (Berlin) HRB 83891 Vorstand: Dipl.-Kfm. Harald Zulauf Aufsichtsratsvorsitzender: Dipl.-Fw. Frank Ginster Sitz der Gesellschaft: Berlin, Deutschland