

Scanning report (EIP format for practice abstracts)

***Project title (native language):** [EUFRUIT: Reteaua de Pomicultura Europeana]

***Project title (English):** EUFRUIT: European Fruit Network

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Section A. Summary for EIP dissemination

***Keywords:** variety and hybrids testing, stone fruits, sweet and sour cherry, apricots, plums, peaches

***Main geographical location:** RO321 București

Other geographical locations: RO111 Bihor, RO112 Bistrița-Năsăud, RO113 Cluj, RO114 Maramureș, RO115 Satu Mare, RO116 Sălaj, RO121 Alba, RO122 Brașov, RO123 Covasna, RO124 Harghita, RO125 Mureș, RO126 Sibiu, RO211 Bacău, RO212 Botoșani, RO213 Iași, RO214 Neamț, RO215 Suceava, RO216 Vaslui, RO221 Brăila, RO222 Buzău, RO223 Constanța, RO224 Galați, RO225 Tulcea, RO226 Vrancea, RO311 Argeș, RO312 Călărași, RO313 Dâmbovița, RO314 Giurgiu, RO315 Ialomița, RO316 Prahova, RO317 Teleorman, RO321 București, RO322 Ilfov, RO411 Dolj, RO412 Gorj, RO413 Mehedinți, RO414 Olt, RO415 Vâlcea, RO421 Arad, RO422 Caraș-Severin, RO423 Hunedoara, RO424 Timiș

***Summary (native language):**

În cadrul câmpurilor experimentale, ne axăm în special pe testarea soiurilor și portaltoilor, dar și pe studierea sistemelor de plantare și a formelor de coroană. În fiecare an, pe lângă studierea elementelor care definesc fenologia și creșterea pomilor, se analizează nivelul producției și calitatea fructelor.

La cires, încă din anul 2010, urmărim 21 de soiuri din sortimentul internațional precum Kordia, Burlat, Regina, Early Red, Firm Red, Giant Red, Ferrovina, Lapins, Skeena, Giorgia, Mora di Vignola, New Star, Van, Celeste, Summit, Vega, Katalin, Ulster, Sam, Germersdorf, Rivan. Alte 16 soiuri românești sunt în testare după cum urmează: George, Ludovic, Bucium, Maria, Iasirom, Cociu, Alex, Andrei, Iosif, Rubin, Severin, Stefan, Paul, Margo, Lucia, Boambe de Cotnari. Sistemele de plantare și formele de coroană studiate se corelează cu vigoarea portaltoilor: pentru cei de vigoare mare și medie: Tufa vas (4,5 x 2,0 m), Trident (4,0 x 2,0 m), Drapel Marchand (4,0 x 2,5 m), iar pentru portaltoii de vigoare mică: Bi-baum – V paralel (4,0 x 1,5 m) și Ax vertical (4,0 x 1,0-1,5 m).

Un alt lot cu soiuri de cires recent introduce spre testare în România se află în portofoliul USAMV. Acestea sunt de proveniență ungurească și sunt altoite pe mahaleb: Aida, Alex, Annus, Carmen, Paulus, Petrus, Rita, Sandor, Tunde și Vera. Forma de coroană testată este Trident (4,0 x 2,5 m).

În anul 2015, a fost înființat un lot experimental cu soiuri noi de cires din Italia altoite pe portaltoii Gisela 5 și Gisela 6. Acestea sunt: Aryana, Lorentz, Gabriel, Valina și Saretta iar ca martor au fost alese soiurile Kordia și Regina. Formele de coroană testate sunt: Trident (4,0 x 2,0 m) pentru Gisela 6 și Bi-baum – V paralel (4,0 x 1,5 m) pentru Gisela 5.

În cadrul plantațiilor de cires ale USAMV sunt testate următorii portaltoi: *Prunus mahaleb*, Colt, CAB11E, CAB6P, P-HL-C, Gisela 6 și Gisela 5. Utilizăm ca martor soiurile Van, Bigarreau Burlat, Kordia, Regina și Germersdorf.

În plantațiile comerciale din România, cele mai cultivate soiuri sunt Burlat, Van, Germersdorf, Kordia și Regina iar ca portaltoi cel mai frecvent întâlnit sunt mahalebul, Gisela 5, Gisela 6 și Colt. Soiurile de cires sunt evaluate din punct de vedere al fenologiei, vigoriei de creștere, adaptabilității, productivității și calității fructelor.

În 2017 am plantat primii hibridi rezultați din combinații hibride dirijate efectuate în Ferma Didactică de la Istrita. Aceștia sunt altoite pe Gisela 5 și urmează să fie evaluați odată cu apariția primelor fructe.

Cele mai cultivate soiuri de visin pe care le testam in cadrul Universitatii sunt: Kelleris, Wanda, Stanesti, Nana, Montmorency, Schattenmorelle, Pandy, Northstar, De Botosani, Productiv de Debretin, Jubileu de Erd, Pandy 48, Ciganymeggy 7, Kantorjanosi, Ujfehertoi Furtos. *Prunus mahaleb* este portaltoiuil utilizat, iar formele de coroana testate sunt Tufa vas (4,0 x 2,0 m) si Ax vertical (4,0 x 1,5 m).

La prun sunt studiate soiurile: Cacanska lepotica, C. rana, Elena, Presenta, TopHit, Jojo, President, Bluefree, Amers, Empress, Grossa di felisio, Ruth Gersteter, Pescarus, Firenze 90, Sliva Nectarina, Anna Spath, Centenar, Brzoskiwia, Weg. Zwykka, Gemenea, Record, Record mutant, Brumarii. Portaltoii testati sunt *Prunus domestica*, *Prunus cerasifera*, Mirobolan 29 C si noii portaltoii germani: Weiwa, Wawit, Docera 6 si Dospina 235. Sistemele de plantare si formele de coroana studiate sunt: Tufa vas – 5.0 x 3.0 m, Tatura trellis – 5.0 x 1.5 m, Palmeta simpla – 4.0 x 3.5 m, Trident – 4.0 x 2.0-2.5 m, Ax vertical 4.0 x 1.5 m.

La cais sunt studiate soiurile: Valeria, Ilinca, Dacia, Olimp, Favorit, Adina, Carmela, Rares, Bucovina, Siret, Amiral, Alexandru, Danubiu, Mamaia, Olimp, Ovidius, Elmar, Excelsior, Auras, Fortuna, Cristal, Tudor, Cea mai buna de Ungaria, Augustin, Orizont, Bela, Sweet cot, Goldrich, Harcot, Early Orange, San Castrese, Sungiant. Sistemele de plantare si formele de coroana studiate sunt: Ax vertical (4,5 x 1,5 m), Bi Baum – V paralel (4,5 x 1,5 m), Drapel Marchand (4,5 x 3,0 m), Mikado (4,5 x 2,5 m) si Trident (4,5 x 2,5 m).

In primavara 2017, am infiintat un nou modul experimental cu soiurile de cais: Wonder Cot, Lady Cot, Delice Cot, Lilly Cot, Milord, Swired, Congat, Mikado, Lido, Med Flo, Flopria, Farlis, Farbela, Fardao, Anegat, Faralia, Farclo, Farbali, Rubista, Portici, Pisana, Cea mai buna de Ungaria, Berjeron, Vitillo si Boccuccia Liscia, altoite pe Mirobolan 29C si soiurile Primando, Primaia, Farely, Fartoly, Farbaly si Farclo, altoite pe Saint Julien A. Sistemele de plantare si formele de coroana studiate sunt: Bi-Baum – V paralel (4.0 x 1.5-2.0 m) si Trident (4.0 x 2.0 m).

La piersic si nectarin se afla in studiu soiurile: Luciana, Magic Star, Big Bang 'Maillara', Royal Lee 'Zaipela', Noracila, Garofa, Red Top, Mihaela, Anemona, Liana, Filip, Catherine, Romamer, Purpuriu, Springbelle, Cardinal, Raluca, Florin si Mimi. GF 677 este principalul portaltoiu utilizat pentru soiurile straine, iar corcodusul (*Prunus cerasifera*) pentru cele romanesti. Formele de coroana studiate sunt Axul vertical (4,0 x 1,5 m) si Bi-Baum – V paralel (4,0 x 1,5 m).

In primavara 2017 am infiintat un nou modul experimental plantat cu:

a. Piersic: Gladys, Nabby, Royal Summer, Sweetdream, Sweet Juana, Sweet Ivan si Lucius, altoite pe GF 677, Sugartime, Royal Majestic, Sweet Henry, Royal Jim si Royal Glory, altoit pe Adesoto, Springbelle, Cardinal si Red Top, altoit pe Mirobolan si Royal Summer, altoit pe Saint Julien A.

b. Nectarin: Big Fire, Big Bang, Big Top, Nectabelle si Honey Royal, altoite pe GF 677, Nectareine, altoit pe Adesoto, Maria Ana, Early Sun Grand, Nectarose, Big Top, Honey Late, Nectagrand 1, Nectagrand 4, Caldesi 2000, Guerriera si Stark Red Gold, altoit pe Saint Julien A, Stark Red Gold si Delta, altoite pe Mirobolan. Formele de coroana studiate sunt: Ax vertical (4,0 x 1,5 m), Bi-Baum – V Paralel (4,0 x 2,0 m) si Trident (4,0 x 2,0 m).

Summary (English):

In the research experimental field trials we are focused mainly on variety testing, rootstocks, training systems and fruit quality.

Regarding the sweet cherry, in the University campus, we tested since 2010, a number of 21 international varieties such as Kordia, Bigareau Burlat, Regina, Early Red, Firm Red, Giant Red, Ferrovia, Lapins, Skeena, Giorgia, Mora di Vignola, New Star, Van, Celeste, Summit, Vega, Katalin, Ulster, Sam, Germersdorf and Rivan. Sixteen Romanian cultivars which are under observations are as follows: George, Ludovic, Bucium, Maria, Iasirom, Cociu, Alex, Andrei, Iosif, Rubin, Severin, Stefan, Paul, Margo, Lucia and Boambe de Cotnari. The studied planting systems and canopies are correlated with the rootstocks vigour: for high and medium vigor: Bush Vase (4.5 x 2.0 m), Trident (4.0 x 2.0 m), Drapeau Marchand (4.0 x 2.5 m) and for the low vigour ones: Bi-baum – Parallel V (4.0 x 1.5 m) and Vertical Axe (4.0 x 1.0-1.5 m).

A new testing plot for recent Hungarian varieties was established in 2016 in Bucharest with the following cultivars grafted on mahaleb: Aida, Alex, Annus, Carmen, Paulus, Petrus, Rita, Sandor, Tunde and Vera. The tested canopy is: Trident (4.0 x 2.5 m).

Another testing plot with new Italian sweet cherry varieties has been set up in 2015 with the following varieties grafted on Gisela 5 and Gisela 6: Aryana, Lorenz, Gabriel, Valina, Saretta. The tested canopies are: Trident (4.0 x 2.0 m) for Gisela 6 and Bi-baum – Parallel V (4.0 x 1.5 m) for Gisela 5.

In USAMV we test the following sweet cherry rootstocks: *Prunus mahaleb*, Colt, CAB11E, CAB6P, P-HL-C, Gisela 6 and Gisela 5. The varieties Van, Burlat, Kordia, Regina and Germersdorf, are used normally as control.

The most cultivated varieties among the sweet cherry orchards in Romania are Kordia, Regina, Burlat and Van. Most of the new orchards established in the last years are grafted on Gisela 5, Gisela 6, Colt and Prunus Mahaleb. For each variety the phenology, tree vigor, resilience, productivity and fruit quality are studied.

In 2017 we planted the first grafted hybrid seedlings from sweet cherry cross pollination obtained in the frame of university breeding program at Istrița Research Station.

The main sour cherry tested varieties are: Kelleris, Wanda, Stanesti, Nana, Montmorency, Schattenmorelle, Pandi, Northstar, De Botosani, Debreceny Botermo, Erdi Jubileum, Pandi 48, Ciganymeggy 7, Kantorjanosi, Ujfehertoi Furtos. *Prunus mahaleb* is the used rootstock and the tested canopies are: Bush Vase (4.0 x 2.0 m) and Vertical Axe (4.0 x 1.5 m).

The plum studied varieties are: Cacanska lepotica, C. rana, Elena, Presenta, TopHit, Jojo, President, Bluefree, Amers, Empress, Grossa di Felisio, Ruth Gersteter, Pescarus, Firenze 90, Sliva Nectarina, Anna Spath, Centenar, Brzoskiwia, Weg. Zwykka, Gemenea, Record and Brumarii. The tested rootstocks are: *Prunus domestica*, *Prunus cerasifera*, Mirobolan 29 C and the German rootstocks: Weiwa, Wawit, Docera 6 and Dospina 235. The studied planting systems and canopies are: Bush Vase (5.0 x 3.0 m), Tatura Trellis (5.0 x 1.5 m), Simple Palmette (4.0 x 3.5 m), Trident (4.0 x 2.0 m) and Vertical Axe (4.0 x 1.5 m).

For apricot the studied varieties are: Valeria, Ilinca, Dacia, Olimp, Favorit, Adina, Carmela, Rares, Bucovina, Siret, Amiral, Alexandru, Danubiu, Mamaia, Olimp, Ovidius, Elmar, Excelsior, Auras, Fortuna, Cristal, Tudor, Meilleur d'Hongrie, Augustin, Orizont, Bela, Sweet Cot, Goldrich, Harcot, Early Orange, San Castrese and Sungiante. The studied planting systems and canopies are: Vertical axe (4.5 x 1.5 m), Bi Baum – Parallel V (4.5 x 1.5 m), Drapeau Marchand (4.5 x 3.0 m), Mikado (4.5 x 2.5 m) and Trident (4.5 x 2.5 m).

In the spring 2017, we planted a new experimental module with the apricot varieties: Wonder Cot, Lady Cot, Delice Cot, Lilly Cot, Milord, Swired, Congat, Mikado, Lido, Med Flo, Flopria, Farlis, Farbela, Fardao, Anegat, Faralia, Farclo, Farbali, Rubista, Portici, Pisana, Meilleur d'Hongrie, Berjeron, Vitillo and Boccuccia Liscia, grafted on Mirobolan 29C and Primando, Primaia, Farely, Fartoly, Farbaly and Farclo, grafted on Saint Julien A. The studied planting systems and canopies are: Bi-Baum – Parallel V (4.0 x 1.5-2.0 m) and Trident (4.0 x 2.0 m).

For peach and nectarine the studied varieties are: Luciana, Magic Star, Big Bang 'Maillara', Royal Lee 'Zaipela', Noracila, Garofa, Red Top, Mihaela, Anemona, Liana, Filip, Catherine, Romamer, Purpuriu, Springbelle, Cardinal, Raluca, Florin and Mimi. GF 677 is the rootstock used for the foreign varieties and Mirobolan (*Prunus cerasifera*) for the Romanian ones. The studied canopies are: Vertical Axe (4.0 x 1.5 m) and Bi-Baum – Parallel V (4.0 x 1.5 m).

In 2017 a new experimental module was planted with:

a. Peach: Gladys, Nabby, Royal Summer, Sweet dream, Sweet Juana, Sweet Ivan and Lucius, grafted on GF 677, Sugartime, Royal Majestic, Sweet Henry, Royal Jim and Royal Glory, grafted on Adesoto, Springbelle, Cardinal and Red Top, grafted on Mirobolan and Royal Summer, grafted on Saint Julien A.

b. Nectarine: Big Fire, Big Bang, Big Top, Nectabelle and Honey Royal, grafted on GF 677, Nectareine, grafted on Adesoto, Maria Ana, Early Sun Grand, Nectarose, Big Top, Honey Late, Nectagrand 1, Nectagrand 4, Caldesi 2000, Guerriera and Stark Red Gold, grafted on Saint Julien A, Stark Red Gold and Delta, grafted on Mirobolan. The studied canopies are: Vertical Axe (4.0 x 1.5 m), Bi-Baum – Paralel V (4.0 x 2.0 m) and Trident (4.0 x 2.0 m).

Section B. Project information

***Project coordinator:** Michelle H. Williams; Aarhus University, Department of Food, Kirstinebjergvej 10, 5792 Aarslev, Denmark; mw@food.au.dk; +45 25170049

***Project period:** 2016 - 2019

***Project status:** Ongoing

***Funded by:** Horizon 2020

***Total budget:** €1.8m

***Geographical regions:** DK011 Copenhagen, DK012 Copenhagen and its environs, DK013 North Zealand, DK014 Bornholm, DK021 East Zealand, DK022 West- and South Zealand, DK031 Funen, DK032 South Jutland, DK041 West Jutland, DK042 East Jutland, DK050 North Jutland, BE211 (Arrondissement. Antwerpen), BE212 (Mechelen), BE213 (Turnhout), BE221 (Hasselt), BE222 (Arr. Maaseik), BE223 (Tongeren), BE231 (Aalst), BE232 (Dendermonde), BE233 (Eeklo), BE234 (Gent), BE235 (Oudenaarde), BE236 (Sint-Niklaas), BE241 (Halle-Vilvoorde), BE242 (Leuven), BE251 (Brugge), BE253 (Ieper), BE254 (Kortrijk), BE255 (Arr. Oostende), BE256 (Arr. Roeselare), BE257 (Tielt), BE258 (Veurne), BE310 (Nivelles-Nijvel), BE331 (Huy-

Hoei), BE332 (Liège- Luik), BE334 (Waremmе-Borgworm), BE335 (Verviers), FR8 Méditerranée; FR81 Languedoc-Roussillon, FR6 SUD-OUEST, FR512 Maine et Loire, FR611 Dordogne, FR812 Gard, DE6 (Hamburg), DE8 (Mecklenburg-Vorpommern), DE9 (Niedersachsen), DEF0 (Schleswig-Holstein), DEE0 (Sachsen-Anhalt), DEA (Nordrhein-Westfalen), DE111, DE112, DE113, DE114, DE115, DE116, DE117, DE118, DE119, E11A, DE11B, DE11C, DE11D, DE121, DE122, DE123, DE124, DE125, DE126, DE127, DE 128, DE129, DE12A, DE12B, DE12C, DE131, DE132, DE133, DE134, DE135, DE136, DE137, DE138, DE139, DE13A, DE141, DE142, DE143, DE144, DE145, DE146, DE147, DE148, DE149, DE600 Hamburg, DE932 Cuxhaven, DE933 Harburg, DE939 Stade, DEF09 Pinneberg, NL1-NL4 + NLZ Holland; NL 224 zuidwest Gelderland, NL 226 Arnhem/Nijmegen, NL230 Flevoland, NL310 Utrecht, NL321 Kop van Noord-Holland, NI322 Alkmaar en omgeving, NL338 oost Zuid-Holland, NL33A zuidoost Zuid-Holland, NL341 Zeeuws-Vlaanderen, NL342 overig Zeeland, NI411 west Noord-Brabant, NL413 noordoost Noord-Brabant, NL414 zuidoost Noord-Brabant, NL421 noord Limburg, NL422 Midden-Limburg, NL423 zuid Limburg, ES620 Murcia, UKG11 Herefordshire, UKG12, Worcestershire, UKH12 Cambridgeshire, UKH16 North and West Norfolk, UKH17 Breckland and South Norfolk, UKJ22 East Sussex, UKJ35 South Hampshire, UKJ36 Central Hampshire, UKJ37 North Hampshire, UKJ41 Medway, UKJ42 Kent, UKJ43 Kent Thames Gateway, UKJ44 East Kent, UKJ45 Mid Kent, UKJ46 West Kent, ES618 Sevilla, ES511 Barcelona, ES512 Gerona, ES513 Lérida, ES514 Tarragona, CH0 Schweiz/Suisse/Svizzera, ITH51-59 Emilia Romagna region, ITH10 Bolzano-Bozen, HU101 Budapest, HU102 Pest, RO111, RO112, RO113, RO114, RO115, RO121, RO122, RO123, RO124, RO125, RO126, RO211, RO212, RO213, RO214, RO215, RO216, RO221, RO222, RO223, RO224, RO225, RO226, RO311, RO312, RO313, RO314, RO315, RO316, RO317, RO321, RO322 RO411, RO412, RO413, RO414, RO415, RO421, RO422, RO423, RO424. HU101, HU102, LT001 Alytaus apskritis, LT002 Kauno apskritis, LT003 Klaipėdos apskritis, LT004 Marijampolės apskritis, LT005 Panevėžio apskritis, LT006 Šiaulių apskritis, LT007 Tauragės apskritis, LT008 Telšių apskritis, LT009 Utenos apskritis, LT00A Vilniaus apskritis.

Project web page: <http://www.eufrin.org/index.php?id=55>

***Project Objectives (native language):**

1. Realizarea unei retele europene pentru sectorul de fructe
2. Dezvoltarea si implementarea unei abordari comune pentru scanarea si sintetizarea cunostintelor stiintifice si a practicilor existente
3. Stabilirea unui dialog continuu cu organisme de decizie de la nivel European, national si regional
4. Identificarea si sustinerea noilor prioritati de cercetare prin monitorizarea si analiza cercetarilor existente si a activitatilor de cercetare si inovare viitoare

Project Objectives (English):

1. Establish a European network focused on the fruit sector.
2. Develop and implement a systematic approach for scanning and synthesizing existing scientific and practical knowledge.
3. Establish an ongoing dialogue with relevant EU, national and regional policy bodies.
4. Identify and support new priority areas of research by continually monitoring and analysing existing and upcoming research and innovation activities.

***Project partners:**

1. Aarhus University, Department of Food Science (Denmark) • AU
2. Research Station for Fruit npo (Belgium) • Pcfuit
3. Centre Technique Interprofessionnel des Fruits et Légumes (France) • CTIFL
4. Obstbauversuchsanstalt Jork (Germany) • OVA
5. Stichting Wageningen Research (Netherlands) • WR
6. ~~East Malling Research (United Kingdom) • EMR (terminated 08-02-2016)~~
7. Institut de Recerca i Tecnologia Agroalimentàries (Spain) • IRTA
8. Federal Department of Economic Affairs, Education and Research (EAER), acting through Agroscope Institute of Plant Sciences (Switzerland) • Agroscope
9. Laimburg Research Centre for Agriculture and Forestry (Italy) • Laimburg
10. Universitatea de Stiinte Agronomice si Medicina Veterinara Bucuresti (Romania) • USAMV
11. National Agricultural Research and Innovation Centre Fruitculture Research Institute (Hungary) • NARIC
12. Lithuanian Research Centre for Agriculture and Forestry (Lithuania) • LRCAF

13. Assemblée des Régions Européennes Fruitières, Légumières et Horticoles (France) • AREFHL
14. Variety Innovation Consortium South Tyrol (Italy) • SKST
15. Freshfel Europe (Belgium) • FRESHFEL
16. Elbe-Obst Erzeugerorganisation r.V. (Germany) • EO
17. Fruitconsult BV (Netherlands) • FC
18. University of Greenwich (United Kingdom) • UoG
19. University of Hohenheim (Germany) • UHOH
20. Università di Bologna (Italy) • UNIBO
21. Institut National de la Recherche Agronomique (France) • INRA
22. NIAB EMR (new 09-02-2016)

Section C. Annex: Scanning report¹

Scanning report [Adrian Asanica, Florin Stanica - USAMV Bucuresti]

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Country: Romania

NUTS 3 region(s)²: RO321 București

WP no. and title: WP2 – Performance of new fruit varieties

Date: 20.04.2017

Source materials and methodology

In the experimental fields of the USAMV we plant a minimum of 3-5 trees from each varieties that we are testing, in the Didactic Farms where is possible around 10-15 plants/cultivar. Several observations and determinations are made during the testing period: productivity (kg/tree), fruit size (weight, caliber), firmness, color, shape, sugar and acid content, appearance, taste, flavor (degustation sessions). Also some observations for the trees: flowering time, frost resistance, vigor, ramification type etc. Storability and shelf life is operated only for some cultivars depending on the workload and available logistic capacity.

From 2012 onward we started a breeding sweet cherry program at Istrița Research Station and for genitors we do pollinations tests and crossings. Inside the Station we have 10 ha intensive sweet cherry orchard with 13 varieties (Sweet Heart, Kordia, Regina, Ferrovina, New Star, Celeste, Durone nero III, Skeena, Early Red, Firm Red, Giant Red, Van and Lapins).

The Romanian fruit growers are permanently assisted in how to project, plant and manage new orchards, technology and sustainable methods. Several demonstration fields are available for all of them also in Bucharest, Moara Domneasca and Istrita Experimental and Didactic Stations. USAMV participated in the COST Action FA 1104 "Sustainable production of high quality cherries for the European market" (16/04/2012-15/04/2016). Each year, in the frame of "Agriculture for Life, Life for Agriculture" International Conference of USAMV Bucharest a Sweet Cherry Festival is organized at Istrița. Within the Festival, a testing session of new and traditional sweet cherry varieties from different production areas is organized. Machineries, equipments and orchard technology are presented.

The source materials for this scanning report are amongst others:

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¹ Equivalent to 'final report' in EIP-AGRI format.

² Please see ec.europa.eu/eurostat/ramon/nomenclatures/ for details on NUTS regions, level 3

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Best practice findings

More than 50 varieties of sweet cherry are tested for vigor, productivity, adaptability, fruit size and quality. The selections are made according to the nowadays requirements for fruits: large shiny red fruits, sweet, firm and flavored and the trees traits: heavy cropping, small, vigorous, winter hardy, self-fertile and early or very late ripening.

Good quality and acceptance in the market and orchards proved to have Kordia, Regina, Giant Red, Grace Star, Early Biggi, New Star and Rubin. Best results are coming from trees grafted on Gisela 6 even that, Gisela 5 is more spread in the country.

For sour cherry, the Hungarian varieties are increasing in popularity, Debreceny Botermo or Erdi Jublieum are some of the most known varieties among the new orchards. The reference is still represented by Schattenmorelle and Nana, but the market is looking for large, sweet and less sour cherry for fresh consumption and colored juice and high content of Vitamin C and dry substance for processing ones.

Regarding the apricots, best results registered Carmela, Rares, Viorica (Romanian Cultivars) and Kyoto, Farbaly and Bergeron from abroad varieties. Due to the late frosts registered almost yearly in Romania, many cultivars are susceptible and from this perspective, Umberto is still cultivated for his tolerance. New arrivals of apricot cultivars from "Cot" series and French cultivars with higher chilling requirements are in test now.

Concerning the plum varieties, the most famous and desired one is Top Hit and Centenar. Tuleu gras is the most known old Romanian variety and still gain the highest recognition and appreciation at the national level for its excellent fruit qualities. Other interesting and largely spread cultivars are Andreea (RO variety), Stanley and Anna Spath as referential. Record is a highly appreciated variety for its large fruits and other as Cacanska rana and C. lepotica distinguished for productivity and fruits quality. Concerning the plum rootstocks, Miobolan (*Prunus cerasifera*) is the most common rootstock, recently Miobolan 29 C, being largely used, but good results have been remarked with Ishtara in Istrita, Adaptabil (Romanian new rootstock for stone fruits) in Arges County (resistant to high clay content) and St. Julien A. Docera 6, Weiwa, Wawit and Dospina 235 are the newest rootstocks which are in testing trials in several locations in Romania.

For peach and nectarines, Italian and Californian varieties proved to be susceptible to hard and late frosts, also to main diseases such as *Taphrina deformans* and *Monilinia laxa*. Romanian cultivars and the older cultivars introduced in the past in the assortment (RedHaven and Cardinal) are more adapted. The market is interested in nectarines, early cultivars with big, red, firm and sweet fruits. The white flesh varieties are still pending the consumer's needs but a couple of varieties proved to be tolerant to *Taphrina deformans* and very tasty (Amalia and Antonia). Flat peaches and nectarines are in trends but susceptible

to crack and *Monilinia* (Alex, Herastrau and Filip). Better behavior for winter hardiness and late frost showed the Romanian variety Florin.

For low vigour variety and rootstock combinations, the best planting system and canopy for the stone fruits is Vertical Axe (4.0-4.5 x 1.5 m). For medium and high vigour trees, best results were obtained with multi-axe canopies: Bi-baum – Parallel V (4.0-4.5 x 1.5-2.0 m), Mikado and Trident (4.0-4.5 x 2.0-2.5 m).

Vase and Bush Vase canopies can be used in low input-low output orchards.