

Arvena – a new pear cultivar obtained at Fruit Research Station Cluj, Romania

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Abstract The pear cultivar 'Arvena' (*Pyrus communis* L.), homologated in 2007, was obtained at Fruit Research Station Cluj, Romania (FRS Cluj) by selection in F1 hybrids derived from 'Triomphe de Vienne', open pollinated. Trees are weak to medium vigour, with moderate-strong branching and semi-upright habit, being very productive and suitable adaptation to Romanian, respectively temperate weather conditions. Fruit size is medium to large, with soft firmness and juicy flesh; the colour changes from green to yellow attractive upon maturity, copper-coloured. Time of maturity for consumption is the second or third decades of September, when the fresh fruit has a good quality rating. The new cultivar 'Arvena', obtained at FRS Cluj enrich the international germplasm repository, representing useful genetic resources, which could be used for pear breeding programs in the future.

Key words

breeding, *Pyrus communis*, cultivar, quality, peculiarities, description

Pear breeding in Cluj-Napoca, Romania, started in 1953 when the Fruit Research Station (FRS Cluj) was founded and since then there were homologated several cultivars. After first cultivars, 'Napoca' and 'Doina', created before 1980, in 1993 was obtained 'Haydeea' and the following cultivars 'Ina Estival' (1999), 'Virgiliu Hibernat' (2000), 'Jubileu 50' and 'Milenium' (2003), 'Rosioara de Cluj' (2005). In 2007 the pear cultivar 'Arvena' was homologated which was obtained by selection in F1 hybrids derived from 'Triomphe de Vienne', open pollinated (Sestras A. et al., 2008b; Sestras R. et al., 2007, 2008).

Origin

The pear cultivar 'Arvena' (*Pyrus communis* L.) was obtained from 'Triomphe de Vienne', by selection in F1 hybrids belonging to seeds resulted from fruits formed in open pollinated conditions. 'Arvena' was identified as elite ('Cluj 1-2-12') from 867 seedlings of 'Triomphe de Vienne', by Mircea Straulea (1967) and were promoted in a trial as selection. After a consistent study in comparative fields, in two different locations, Cluj-Napoca and Voinesti Fruit Research Stations, grafted onto a pear generative rootstock and quince rootstock, compared in test plots versus well-known 'Williams', 'Beurré Bosc', 'Abbé Fetel' and other varieties as control, the new cultivars was homologated in 2007. At the final period of examination (2003-2006) in Romanian national network - The State Institute for Variety

Testing and Registration (ISTIS), 'Arvena' received official ISTIS certificate number 8420/29.11.2007, authors: R. Sestras, M. Straulea, E. Harsan, V. Ghidra, A. Sestras.

Description

The principal characteristics of flowers, fruit, tree and leaves are described using some criteria after UPOV Guidelines (2000).

Flower

Flower bud: length is short, 5-6 mm.

Sepal length: medium, 5 mm; attitude of sepals in relation to corolla: recurved.

Corolla. Size: 32 to 33 mm; when flower is open, margins of petals have tangent position (position of margins of petals: touching).

Petal size: medium, 14 mm length and 11 mm width; length of claw of petal: short (under 1 mm)

Petal's shape: ovate, truncated on base.

Color: white.

Stamens: 5 mm, white; the stamens are on the same level with the stigma.

Anthers: red purple.

Pistil: 6-7 mm, rounded, green yellow.

Pollen: purple pink.

The flowers are inserted, 7 to 9, in scattered inflorescences.

Fruit

Shape: conic-truncated, slightly asymmetric (Fig. 1), the profile is concave, length to diameter ratio = 1.2-1.3.

Fruit: medium size, with a weight of 150-160 g, height 75-80 mm and 60-65 mm in diameter. The largest diameter position is easy to calyx.

Peduncle: medium length (26 mm) and thickness (3.3 mm), yellow-green covered with brown; curved stem is absent.

Skin: thin, smooth and slightly glossy, especially parts without rust.

Background color of green-yellow fruit is covered with yellow-orange overlapping rust spots and the fruit become golden attractive upon maturity, copper-coloured.

Lenticels: medium size, russetted, numerous, more on the sunny side of fruit.

Flesh: yellowish white colour, buttery, smooth, very juicy, with sweet, delicate and pleasant flavour.

Flesh firmness: 71.6 g/cm³ at maturity, and 21.6 g/cm³ at maturity of optimal consumption (texture of flesh is soft at consumer maturity).

Seminal lodges: long, deep, ovoid, with whole walls, yellowish.

Seeds: about nine per fruit, oval, 9.7 mm long and 5.7 mm wide.

Season: midseason, picking date at Cluj-Napoca, in Central Transylvania, Romania, between 15 and 30 September.

Period of storage: in natural or controlled conditions is similar to the varieties 'Beurré Bosc' and 'Abbé Fetel'.

Usage: dessert and industrialization of jam, marmalade, juice etc.



Fig. 1. Fruits of 'Arvena' cultivar

Tree

Growth: the vigor of trees is weak to medium.

Habitus: architectural ideotype of tree is semi-upright.

Skeleton branches: moderate-strong branching, inclined at an angle of 70 degrees.

A year branch has the colour of brown-green with shades of gray.

Lenticels: small, 1-2 mm, rare, often to the base of branches.

Production:

very productive and annually fructification; well adapted to Romanian conditions.

Response to fungal diseases: moderate resistance to pear scab (*Venturia pirina* Aderh.) attack, and susceptible to leaf spot (*Mycosphaerella sentina*

(Fr.:Fr.) Schrot., anamorph: *Septoria pyricola* (Desmaz.) Desmaz.).

Response to bacterial diseases: moderate resistance to fire blight (*Erwinia amylovora* (Burrill) Winslow et al.) attack; in natural condition of infection at FRS Cluj, more resistant than 'Highland', 'Jeanne d'Arc', 'Notair Lepin', 'Passe Crassane', 'President Rooswelt' etc. and more sensitive than 'Conference', 'Williams', 'Kieffer Seedling', 'Magness' etc. (Sestras A. et al., 2008a).

Response to pest: moderate resistance to *Psylla* sp.; in natural conditions of infestation at FRS Cluj, more resistant than 'Williams', 'Conference', 'Beurré Bosc', 'Beurré Hardy', 'Clapp's Favorite', 'Curé' etc., and more sensitive than 'Lorencz Kovacs', 'Triomphe de Jodoigne', 'Severianka', 'Haydeea' etc. (Sestras et al., 2009).

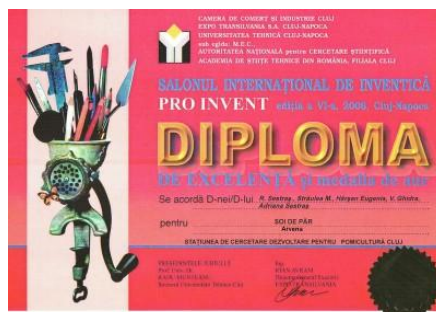


Fig. 2. Certificate of ISTIS registration, diploma and medal obtained for ‘Arvena’ cultivar, Pro Invent 2008

Leaves

Texture: smooth.

Sheen: glossy.

Size: average 66 mm long and 48 mm wide; the ratio l/w is 1.4.

Shape: truncated on base and right-angled on apex; incisions of margins are absent.

Petiole: 61 mm, with yellow-green veins; stipules are absent.

Pubescence: none.

Availability

‘Arvena’ is licensed in Romania by the ISTIS (Fig. 2) and is presently available from FRS Cluj nursery. Due its value and quality of fruits, ‘Arvena’ was granted with diploma and medal Pro Invent at International Salon of Inventions, Cluj-Napoca, 2008.

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