

GENETIC RESOURCES OF TEMPERATE FRUIT PLANTS IN HIMACHAL PRADESH

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A National Hortorium at Kothai (Shimla, India) maintains a large germplasm collection of 579 varieties/species comprising pome fruits (215 apple, 56 pear, 32 *Malus* species), stone fruits (37 cherry, 65 plum, 37 apricot, 5 persimmon) and nut crops (31 almond and 1 each of chestnut and walnut) were introduced. Cultivars namely Topred, Red Spur, Vance Delicious, Summer Queen of apple, Red Bartlett, Starkrimson of pear, Non Pareil, Ne Plus Ultra, Drake of Almond; Triumph Domini, Pieterose Nigre, Germersdorfer of cherry and Partap of Walnut have been found promising and released for cultivation in Himachal Pradesh.

Key words : Temperate fruits, germplasm, cultivar, maintenance, conservation

A National Hortorium for introduction, collection and preserving of all cultivated varieties of temperate horticultural plants and their wild relatives was established at Kotkhai by Indian Council of Agricultural Research in 1961. This hortorium was lately transferred to Dr Y.S. Parmar University of Horticulture and Forestry and renamed as Temperate Horticultural Research Station at Kotkhai, Shimla (Himachal Pradesh). During the initial drive, a large germplasm collection of 470 varieties of different temperate fruits were collected and established and have been evaluated from time to time.

The germplasm collection consisted of 470 varieties comprising pome fruits (215 apple, 56 pear, 32 *Malus* species), stone fruits (37 cherry, 65 plum, 37 apricot, 5 persimmon) and nut crops (31 almond and 1 each of chestnut and walnut). Later 70 more cultivars of different temperate fruits were added. These germplasm have been evaluated for their growth, cropping, fruit quality

and a large number of these have been released in the state. The available genetic resources are listed in Table 1.

Under the apple germplasm evaluation programme, a number of varieties namely Starking Delicious, Rich-a-red, Topred, Vance Delicious, Golden Delicious, Summer Queen and Red Spur have been recommended for fruit grower of Himachal Pradesh (YSPUH&F, 1996).

In case of pear, three cultivars namely Red Bartlett Max Red Bartlett and Starkrimson have been found promising. Almond cultivars viz., Non Pareil, Drake, Kashmir Seedling and I.X.L. were recorded vigorous under high hill temperate wet zone, and were found suitable for green almond market. These varieties were also less affected by gummosis. In cherry germplasm, screening programme Triumph Domini was found most promising early maturing cultivar followed by Pieterose Nigre and Germersdorfer. Some varieties like Triumph Domini, Bigarreau Noir Hative,

Germersdorfer and Emperor Francis were also found comparatively tolerant to shot hole disease (Gautam *et al.*, 1993, 1995, 1997).

Large number of germplasm has also been recommended in peach, plum and apricot. Recently Partap walnut has been released from the station.

Germplasm maintained at Temperate Horticultural Research Station, Kotkhai (Shimla)

Apple

a) Colour strains

Bright-N-Early	Galla
Hardeman	Mollies Delicious
Lalla Delicious	Royal Red
Richared	Top Red
Vance Delicious	

b) Super types

Golden Spur	Hardeipur
Oregonspur	Miller stureddee spur
Red Chief	Red Spur
Silver Spur	Spur type Red
Sky Spur	Starkrimson
Starkspur Golden	Well Spur

c) Pollinisers varieties

Grainy Smith	Glauster
Golden Delicious	Mc. Intosh
Red Gold	Spartan
Summer Queen	Tydemans Early
Worcester	Lord Lambourne

d) Crab pollinisers

Crimson Golden	Golden Hornett
Manchurian	Malus Floribunda
Snowdrift	Redflush

e) Scab resistant

Co-op-13	Karyjan
Freedom	Liberty
Mcpree	Novamac
Nova Easygro	Sir prize

f) Other varieties

Akane	Anna
Boskoop	Boycon
Chailmoft	Chaubattia Ambrosia
Early Victory	Edward

Ellison's Orange	Fall Pippin
High Early	Ingrid Marie
Indo	Jonared
King David	King Lucious
King Pippin	Providence
Laxton's Fortune	Lord Lambourne
Miller's Seedling	Norfolk Beefing
Parlin's Beauty	Pearson's Late
Pippin Litovski	Pumbis
Porto	Red Baron
Red June King Pippin	Rose Marie
Royal Galla	Schlomit
Sharp's Yellow	Sign Tillish
Stema Red	Summer Red
Survervets	Surkh Trel
Summer Champion	Stark Earliest
Tropical Beauty	Pear Varieties
Autumn of Yakolov	Awal Number
Bagugosha	Beurre Giffard
Bartlett	Basuiodsc Favourite
Beurre Bosc	Beurre d' Amanlis
Beurre Diel	Beurre Hardy
Beurre Capiaumont	China Pear
Pear Varieties	Common Pear
Conference	Country Pear
Decanna de Kulli	Devoe
Doyenne du Comice	Duchess de Bordeaux
Durandau	Flemish Beauty
Durandau	Flemish Beauty
Durandau	Glou Morceau
Gross Calabore	Ishiiwase
Jargonelle	Kashmir Pear
Kiskusui	Laxton's Superb
Leconte	Lisnova Karasvitsa
Luchimitsa Kalapa	Manning Elizabeth
Marie Louise Marriflat	Max Red Bartlett
Monarch	Monteca hardy
Monteca Labrum	Napolean
New Pear	Niji seikii
Nouveau Poiteau	Okusankichi
Passe Crassane	Princess
Red Bartlett	Seckel
Shinseiki	Smart Pear
Starkrimson	Starking Delicious
Stark Winter Bartlett	Thumb Pear
Victoria	Weldon

William Basuioceae hybrid	William Bon
Chretien	Yakumo
Cherry Varieties	Biggarreau Noir Hative
Biggarreau Noir Gross	Biggarreau Severne
Bedford Prolific 202	Bellia Italia
Black Heart	Bombe-de-Contnari
Durone Nero I	Durone dell Anelta
Early River	Emperor Francis
Early Purple	Ferroia
Gaucer	Gennelce
Germersdorfer	Guigne Noir Gross
Lapins	Mora di Cazzano
Merchant	Napolean
Pinkish Early	Pietroase Nigre
Red Heart	Sandara Tardiva
Schmidt	Seneca
Suda Hardy	Stella
Triumph Domini	Van
Yama Jakura	White Heart Biglate
Plum Varieties	Black Chamba
Burbank	Burbank Elephant Heart
Burbank Great Yellow	Burbank Mammoth
Cambridge Gage	Damson
Daniston's Superb	Early Transparent Gage
EC 330935	EC 330936
EC 330937	EC 330938
EC 331111	Formosa
Frontier	Green gage
Mariposa	Methley
Prune	Raisin
Red Ace	Red Beauty
Santa Rosa	Satsuma
Sweet Early	Tarool
Transparent Gage	Victoria
Wickson	
Apricot	
Charmagz	Hulman
Suffeda	Shakarpara
St. Ambroise	Sayeb
Toyrinthos	New Castle
Rival	

Walnut

Colby	EC 36748
EC 36749	Govind
Kilba Selection	Hansen
Kotkhai Selection No. I	Kotkhai Selection No. II
Lake English	Payne
Partap	Tutle-16
Tutle-31	

Almond

Afghanistan Seedling	Briggs Hardshell
Drake	Dhebar
EC 42149	Kashmir Seedling
Merced	Non Pareil
Ne Plus Ultra	Riba Selection
Satwant Raj	Spillo-16
Spillo-18	

Peach

Early White Giant	Fayette
Flame Kist	July Elberta
Spring Crest	Shimizu Hakuto
Somerset	Snow Queen (Nectarine)
World's Earliest	

Persimmon

Astrigent	Gosho
Hyakume	Raw Eating
Hachiya	

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