MISSOURI

AGRICULTURAL COLLEGE EXPERIMENT STATION.

BULLETIN No. 10.

ANALYSES OF APPLES AT VARIOUS STAGES OF GROWTH. BORDEAUX MIXTURE FOR GRAPE ROT. COMPARATIVE TESTS OF SMALL FRUITS AND POTATOES.

COLUMBIA, MISSOURI,

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INTRODUCTORY.

In carrying out the objects of the organization of an "Agricultural Experiment Station," we cordially invite the co-operation of all persons interested in its success. Suggestions as to lines of experimental work, problems to be solved, inquiries relating to agriculture, horticulture, stock, and the dairy will be cheerfully received, and answered as far as possible; but no work will be undertaken unless of public value, and the results of which we are at liberty to use for the public good.

Specimens of grains and grasses, seeds of fruit and forest trees; vegetables, plants and flowers that are true to name; varieties of beneficial and injurious insects; samples of mineral waters and ores, and whatever may illustrate any department of agriculture will be gladly received, and due acknowledgments made in annual reports. Directions for collecting, packing and shipping such specimens will be furnished on application.

Bulletins will be issued at least quarterly, giving the results of experimental work as fast as completed, together with such suggestions and information as may be thought valuable to the farmers of Missouri.

The bulletins and reports of this Station are sent free to every citizen of Missouri who applies for them. Copies are sent as soon as issued to every newspaper in the State, to every Grange, Farmers' Alliance, or other Agricultural organization, whose address can be obtained. Bulletins and reports are also sent to the leading Agricultural papers of the country, and will be sent to *any* paper that may desire to exchange.

Letters relating to any special line of work should be directed to the officer in charge of that division, but all general correspondence relating to the work of the Station should be addressed to

EDWARD D. PORTER,
Director of Experiment Station.

Columbia, Boone Co., Mo.

DEPARTMENT OF HORTICULTURE.

JOHN W. CLARK.

The following analysis of Ben Davis apples was made in order to place before fruit growers, in a concise and practical manner, the ash analysis of the fruit in its different stages of development, that the importance of thinning the fruit early and letting only the perfect specimens ripen might be made plain to all.

Sample No. 1 was made up of green and immature fruit, picked from the tree July 9th, and averaged $1\frac{4}{5}$ inches in diameter.

No. 2 was taken October 23d, and was composed of large and perfect fruit, and averaged $3\frac{1}{2}$ inches in diameter.

No. 3 was also taken October 23d, and was made up of small and imperfect specimens, which average $2\frac{1}{2}$ inches in diameter.

ANALYSIS OF BEN DAVIS APPLES.

ANALYTICAL DATA.

	UNRIPE APPLES	RIPE APPLES.	SMALL APPLES.
	July 9th	October 23d.	October 23d.
Number of apples.....	*40	†7	‡20
Weight in grammes.....	1907	1507 { 1408 gr. flesh 99 gr. cores	1407 { 1233 gr. flesh 174 gr. cores
Raw ash in grammes.....	5.6800	4.2265	4.9420
Per cent. of carbon in same	2.35	6.04	0.52
Per cent. of sand in same.	0.57	0.91	2.63
Fine ash in grammes.....	5.51	4.03	4.81
Per cent. in apples.....	0.289	0.267	0.342

*Average diam. 1 4-5 in. †Average diam. $3\frac{1}{2}$ inches. ‡Average diam. $2\frac{1}{2}$ inches.

ANALYSIS OF FINE ASH AND WEIGHT IN OUNCES IN 10 BU. OR 500 POUNDS OF APPLES.

	July 9th.		October 23d.		October 23d.	
	per ct.	ounces.	per ct.	ounces.	per ct.	ounces.
Silica	0.58	0.134	1.23	0.263	2.16	0.591
Ferric oxide	0.47	0.109	0.46	0.098	0.66	0.181
Phosphoric pentoxide	8.96	2.071	8.20	2.231	8.73	2.388
Lime	6.85	1.584	5.66	1.209	8.85	2.421
Magnesia	4.80	1.110	4.30	0.918	4.76	1.302
Potash	54.02	12.489	56.74	12.120	52.44	14.348
Soda	2.10	0.485	1.94	0.414	2.08	0.569
Missing	22.22	5.137	21.47	4.506	20.62	5.559
Total	100.00	23.119	100.00	21.759	100.00	27.359

The analysis of No. 1 shows that a large proportion of the mineral matter contained in the fruit is stored up during the *early* part of its growth, for, comparing it with No. 2 and No. 3, we find it contains, in equal weight, a greater per cent. of ash than No. 2, but not as much as No. 3. Sample No. 3 containing the largest amount of ash, No. 1 next, and No. 2 the least.

The only ingredients contained in the ash which there is any need of noting is the phosphoric acid and potash; for these are the only ones in which the soil is deficient or that need to be returned to the land to keep up its fertility.

From the above analysis there would be taken from an acre of land set to apple trees, 30 feet apart and yielding ten bushels of fruit to the tree, by sample No. 1, 6 lbs. of phosphoric acid and 37½ lbs. of potash; by No. 2, 7 lbs. of phosphoric acid and 37 lbs. of potash; by No. 3, 7⅕ lbs. of phosphoric acid, and 43 lbs. of potash.

From the above the importance of thinning fruit as soon as it is of sufficient size to show the wormy and imperfect specimens becomes evident, and also that it costs less to grow a barrel of large and perfect apples than it does to grow a barrel of small and inferior fruit.

From the preceding analysis it becomes evident that to produce good crops of fruit for any number of years, the ground where the trees are planted must have both phosphoric acid and potash returned to it in order to keep up its fertility.

The cheapest and most available source of obtaining these substances, and applying them to the land, would in most cases be from ground bone and some kind of potash, or from unleached hardwood ashes.

If all the wood ashes made were carefully saved, and applied to the orchard, instead of being thrown away as worthless, it would go a great ways towards keeping up the fertility of the soil and health of the trees.

EXPERIMENTS WITH THE BORDEAUX MIXTURE UPON THE GRAPE ROT.

(*Laestadia Bidwellis.*)

The vineyard upon which the trial was made was planted several years ago. The rot had shown itself for a number of seasons, in some cases completely ruining the crop—this was the case in 1888.

The principle varieties of grapes in the vineyard are Concord, Elvia and Goethe.

Early the past season when the grapes were about the size of peas, the rot showed itself upon the fruit. The vines were syringed at once with the Bordeaux Mixture, composed of 6 lbs. sulphate of copper dissolved in 16 gallons of water, and 4 lbs. of lime dissolved in 6 gallons of water, after which the two were poured together in one barrel.

The whole vineyard was syringed but once with the mixture, after which a certain number of rows were selected and syringed once in about two weeks during the remainder of the season.

The season was a wet one; it often rained either the day the mixture was applied or the next.

The wet and warm weather was favorable to the growth of the rot and prevented the full action of the copper mixture by washing it off the fruit.

The vines that were syringed but once showed a marked difference in the rotting of the fruit when compared with those that were syringed regularly. In the first case fully four-fifths of the fruit rotted (with the exception of the Goethe, of which not over one-half was poor), while in the second case 75 per cent. of the fruit was sound.

STRAWBERRIES FRUITED 1889.

NAME.	Perfect, H. Pistillate, P.	Flavor. Scale 0 to 10.	First ripe.	First picking.	Size of berries when comp'd with Crescent.	Productiveness. Scale 0 to 10.	Value for market. Scale 0 to 10.	Value for home use. Scale 0 to 10.	Firm, F. Medium, M. Soft, S.	Runners. Scale 0 to 10.	Rust. Scale 0 to 10.
Covill	H	4	May 16	May 20	¾	6	6	6	M	7	3
Crystal City	H	7	" 17	" 21	½	5	4	5	S	7	0
Crescent	P	6	" 20	" 24	1	10	10	9	M	10	1
Farnsworth	H	8	" 18	" 25	1⅛	7	8	8	F	8	1
Haverland	P	8	" 20	" 25	1	9†	9†	10	F	...	...
Mammoth	H	8	" 20	" 25	1⅛	7	7	7	M	4	0
Photo	P	6	" 20	" 25	1½	8	8	7	M	3	2
Warfield's No. 2	P	7	" 20	" 25	1	8	8	7	F	8	0
May King	H	8	" 23	" 26	1¼	7	8	9	M	7	0
Cumberland	H	9	" 23	" 26	1¾	9	8	9	S	8	1
Capt. Jack	H	8	" 24	" 26	1¾	9	9	9	F	8	2
Jessie	H	8	" 16	" 27	1½	8	8	9	M	8	3
Enhance	H	6	" 21	" 27	1	7	6	6	M	8	0
Logan	H	6	" 22	" 27	1¼	7	6	7	M	...	....
Jumbo	H	7	" 23	" 27	1⅛	6	5	5	M	7	2
Henderson	H	10	" 23	" 27	1¼	5	5	8	M	....	...
Prince of Berries	H	8	" 23	" 27	1⅛	6	6	7	S	6	0
Lida	P	5	" 23	" 27	1½	9†	8	5	F	7	1
Bomba	H	7	" 23	" 27	1⅛	8	8	7	M	4	1
Southard's No. 1	H	6	" 24	" 27	1	7	7	7	M	3	2
Evarts		6	" 24	" 27	1¼	7	7	6	...	....	....
Itaska	P	7	" 24	" 27	1¼	6	7	7	M	....	....
Truitt	H	7	" 24	" 27	1¼	8	8	7	F	4	2
Southard's No. 2	H	5	" 25	" 27	1	7	8	7	F	4	1
Excelsior	P	6	" 25	" 27	1	6	7	6	..	9	2
Woodhouse		8	" 25	" 27	1⅛	7	6	7	...	...	....
Miner's Prolific	H	8	" 25	" 28	1⅛	9	9	9	F	8	1
Bubach No. 5	P	8	" 25	" 28	1¾	8	9	9	....	6	1
Ohio	P	7	" 26	" 28	1	8	8	7	....	6	0
Belmont	H	9	" 26	" 28	1⅛	7	7	8	F	6	0
Norman	P	7	" 27	" 28	1	5	5	5	...	4	2
Jewell	P	9	" 27	" 28	1¾	5	4	6	S	3	0
Parry	P	7	" 26	" 29	1¼	7	6	7	..	8	1
Gold	P	8	" 26	" 29	1¼	5	5	6	....	7	1
Jersey Queen	P	8	" 27	" 29	1¼	7	7	8	M	7	0
Ontario		7	" 27	" 30	1	5	7	7	...	...	...
Gandy	H	8	" 27	" 30	1⅛	8	8	8	M	10	1
Crawford	H	8	" 27	" 30	1¾	8	8	9	F	4	1
Summit	P	6	" 28	" 30	1½	6	7	6	....	4	4
RECEIVED FOR TESTING.											
F. Harland, No. 1		....	.....	.....	...	...	..	..	...	7	0
Lady Rusk	P	..	.....	.....	....	...	....	....	....	8	1
Stayman's No. 1	H	...	...	.....	....	...	....	..	...	10	2
Stayman's No. 2	P	..	..	..	...	.	...	...	..	8	1

COVILL.—Color, dark ; smooth ; earliest berry fruited.

CRYSTAL CITY.—Blossoms early and full ; berries long and rough ; small ; unprofitable.

CRESCENT.—Blossoms late and ripens quickly and regularly ; berries even : most profitable of the varieties fruited.

FARNSWORTH.—Color, dark.

HAVERLAND.—Color, medium ; promising.

MAMMOTH.—Color, medium ; late berries run small.

PHOTO.—Color, dark ; strong, upright fruit stalk ; promising.

WARFIELD'S No. 2.—Color, dark ; berries of medium size, firm ; a promising variety.

CAPTAIN JACK.—A profitable variety to plant as a fertilizer with pistilate varieties.

MAY KING.—Color, light ; berries, even and smooth ; valuable.

CUMBERLAND TRIUMPH.—A good variety to plant as a fertilizer with pistilate varieties.

TRUITT.—Fruit of good size, shape and color.

JESSIE.—Blossoms fully ten days before the Crescent, and for this reason is a poor variety to plant with it as a fertilizer, although it produces an abundance of pollen. The early flowering and late ripening is a bad feature in a strawberry, for a day's difference in the time of blossoming may make the difference between a good crop and none at all, when there occurs a late frost.

JUMBO.—Berries of good size, but soft ; not a promising market variety.

HENDERSON.—Best flavored of all the varieties fruited ; a good variety for home use.

PRINCE OF BERRIES.—Too soft for market.

CRAWFORD.—One of the largest berries ; a promising late variety.

LOGAN.—Color, dark ; berries, large.

LIDA.—Color, dark ; berries of large size ; flavor, poor ; good bearer.

BOMBA.—Color, medium ; berries, large.

MINER'S PROLIFIC.—A profitable variety to plant as a fertilizer with pistilate varieties.

BUBACH No. 5.—Foliage good ; fruit, large and showy.

BELMONT.—Fine in flavor ; a good market variety ; needs high culture.

JEWELL.—Unproductive ; soft ; not promising.

JERSEY QUEEN.—A good berry for home use, but not a profitable market variety.

GOLD.—Unproductive ; not promising.

GAUDY.—Fruit of good size ; a promising late variety.

SUMMIT.—Fruit, large and smooth.

The ten most profitable varieties fruited on the station grounds were : Crescent, Haverland, Captain Jack, Miner's Prolific, Bubach No. 5, May King, Cumberland Triumph, Crawford and Gaudy.

RASPBERRIES FRUITED 1889.

NAME.	Quantity. Scale 0 to 10.	First Ripe.	First Picking.	Last Picking	Firmness. Scale 0 to 10.	Productiveness, Scale 0 to 10.	Value for market, Scale 0 to 10.	Value for home use. Scale 0 to 10.	Vigor, scale 0 to 10
BLACK CAPS.									
Souhegan	9	June 12	June 15	June 29	8	8	7	7	8
Acme Palmer	8	June 14	June 16	June 29	8	10	10	10	8
Carman	8	June 16	June 17	July 3	9	7	6	6	8
Hopkins	8	June 17	June 19	July 4	10	9	10	10	10
Gregg	8	June 18	June 20	July 4	10	9	10	10	10
Nemaha	8	June 18	June 20	July 4	8	8	6	7	8
Ada	9	June 17	June 20	July 4	9	8	5	5	7
Hilborn	10	June 18	June 20	July 3	9	9	9	10	9
RED.									
Turner	10	June 10	June 13	July 15	7	8	9	9	8
Cuthbert	9	June 14	June 17	July 16	9	10	10	10	10
Marlboro	7	June 14	June 17	July 13	8	5	5	5	3
Palmer	6	June 13	June 17	July 17	10	7	8	8	9
Thompson's Early Prolific	6	June 13	June 17	July 13	6	4	4	5	9
Shaffer's Collossal	4	June 15	June 18	July 17	6	6	3	3	10

SOUHEGAN.—Little bloom ; growth, drooping.

ACME PALMER.—Little or no bloom ; promises well ; productive and early ; if on further trial it still does as well as the past year, it will become very valuable.

CARMAN.—Medium bloom ; growth, upright, medium.

HOPKINS.—Considerable bloom ; growth, upright, strong.

GREGG.—Considerable bloom ; growth, upright, strong.

NEMAHA.—Bloom, medium ; growth, upright, strong.

ADA.—Bloom, medium ; growth, drooping.

HILBORN.—Little bloom ; growth, upright, strong.

TURNER.—Berries, soft ; growth, medium ; suckers, moderate.

CUTHBERT.—Berries, large ; growth, strong ; suckers, moderate.

MARLBORO.—Berries, large, roundish : growth, poor.

PALMER.—Berries, large, roundish; suckers to a considerable extent.

THOMPSON'S EARLY PROLIFIC.—Berries crumble and irregular ; suckers to a considerable extent.

SHAFFER'S COLOSSAL.—Canes came through the winter in poor shape ; about one-half winter-killed ; berries, poor color and flavor ; crumbles badly.

Of the black caps the most profitable were the Acme Palmer, Hopkins, Gregg and Hilborn. Of the red varieties, the Cuthbert, Turner and Palmer were the most productive.

BLACKBERRIES FRUITED 1889.

NAME.	Quality. Scale 1 to 10.	First ripe.	First Picking.	Size. Scale 1 to 10.	Firmness. Scale 1 to 10.	Productiveness. Scale 1 to 10.	Value for market. Scale 1 to 10.	Value for home use. Scale 1 to 10.	Thorny. Scale 1 to 10.
Early Harvest	8	June 23	June 26	8	10	8	10	10	6
Snyder	9	July 4	July 8	8	8	9	8	7	6
Kittatinny	10	July 5	July 8	10	9	10	10	10	8
Agawam	9	July 6	July 10	9	9	10	9	9	9
Freed	7	July 10	July 13	8	6	7	7	....	9
Minnewaski	8	July 11	July 15	10	....	7	....	....	6
Ancient Briton	8	July 12	July 15	9	6	7	6	....	10

EARLY HARVEST.—Canes, upright; growth, medium; early, and for this reason very profitable.

KITTATINNY.—Berries of good size, and attractive; good bearer, and strong grower.

AGAWAM.—Growth, slender; upright.

FREED.—Berries, roundish; canes, thorny.

MINNEWASKI.—Berries, roundish; growth, strong.

ANCIENT BRITON.—Growth, slender; canes, thorny; berries, dull black and long.

The most profitable variety was the Early Harvest on account of its early ripening, the whole crop being disposed of before the other varieties were ready to market, and also before the wild blackberries were ripe. The two varieties that ranked next were Kittatinny and Agawam. It may be well to state that the lowest point the mercury reached during the winter was seven degrees below zero.

POTATOES PLANTED.

NAME.	Yield per acre.	Date of blossoming.	Growth of Vines (Strong R, Medium M, Weak W)	Leaves (Round S, Large L, Narrow N, Medium M)	Growth (Spreading S, Upright U, Medium M)
Albino	261	June 20	S	M	
Alexander No. 1	338	June 24	S	LR	S
Alexander Prolific	52	June 24	M	RL	
Astonisher	180	June 22	M	R	U
Baker's Imperial	358	June 19	M	M	S
Barstow	416	June 20	S	L	S
Beauty of Hebron	358	June 22	S	M	S
Beauty of Hebron, late	183	June 22	S	M	S
Beauty of Beauties	397	June 18	S	L	M
Belle	290	June 23	S	N	S
Blaine, Jas. G	337	June 19	S	L	S
Bonanza	271	June 22	S	M	M
Boston Market	319	June 24	S	L	S
Brownell's Best	180	June 24	S	M	S
Brownell's No. 31	309	June 24	S	M	S
Brownell's No. 55	203	June 23	S	LN	S
Cambridge Prolific	271	June 23	S	LN	U
Cayuga	202	June 22	S	M	S
Champlain	271	June 24	S	M	S
Cheesman's Seedling	280	June 25	M	LN	U
Chicago Gem	280	June 25	S	L	M
Clark's No. 1	145	June 22	M	L	S
Collum's Superb	300	June 25	S	N	M
Corliss' Matchless	290	June 22	S	R	S
Crane's Extra Keeper	203	June 24	S	M	S
Crane's June Eating	145	June 18	S	L	S
Cream of the Field	245	June 20	S	M	M
Crimson Beauty	153	June 23	S	M	S
Crown Jewel	164	June 24	M	M	
Dakota Red	222				
Dakota White	183	June 23	S	M	S
Dandy	193	June 24	S	L	U
Delaware	309	June 20	S	N	S
Dictator	367	June 30	M	N	S
Duchess	126	June 30	M	M	M
Early Essex	193	June 20	S	M	M
Early Dawn	300	June 28	S	M	M
Early Durham	387	June 18	M	M	S
Early Gem	96	June 18	M	M	U
Early Harvest	329	June 20	S	M	S
Early Mayflower	193	June 24	S	LN	S
Early New Zealand	232	June 24	M	M	S
Early Pearl	387	June 20	M	M	S

POTATOES PLANTED.—CONTINUED.

NAME.	Yield per acre.	Date of Blossoming.	Growth of vines (Strong S, Medium M, Weak W)	Leaves (Round R, Large L, Narrow N, Medium M)	Growth (Spreading S, Upright U, Medium M)
Early Puritan	309	June 22	M	L	S
Early Rose	245	June 20	S	M	
Early Sunrise	397	June 20	S	L	S
Early Standard	329	June 20	S	L	S
Early White Prize	203	June 20	S	M	S
El Paso	309	June 22	M	N	S
Empire State	145	June 23	S	LN	S
Eno's Seedling	319	June 25	M	L	U
Garfield, Burrough's	358	June 20	S	L	S
Garfield, Landreth's	338	June 30	S	N	M
Great Eastern	245	July 1	S	L	S
Green Mountain	242	June 24	S	L	S
Howe's Premium	261		S	L	S
Hampden Beauty	397	June 20	S	L	S
Jone's Prize Taker	232	June 20	S	M	S
Jumbo, Weld's	96	June 30	S	M	U
Junkis	242	June 24	S	M	S
Lady Finger	106	June 30	M	N	
Logan, General	309	June 30	S	M	S
Lombard	183	June 30	S	M	
Marshall	213		S	L	S
Mayflower	272	June 30	S	N	S
Mitchell's Seedling	329		S	M	S
Monroe Co.'s Prize	290	June 23	S	M	S
Morning Star	309	June 20	S	M	S
Mullally	78	June 24	S	M	U
Nevada White	270	June 25	S	L	S
New Champion	203	June 24	M	R	U
New York State	216	June 18	M	M	M
New Queen	222	June 19	S	L	S
Newton's Seedling	377	June 25	S	L	S
Notts, Victor	290	June 19	S	M	S
Ontario	222	June 22	S	M	
Orange County White	271	June 24	S	L	S
Parson's Prolific	319	June 30	M	LN	S
Peachblow	135	June 30	M	M	M
Pearl of Savoy	329	June 20	S	M	S
Perfect Gem	203	June 30	M	R	M
Perfection, Finch's	319	June 20	S	L	S
Potentate	164	July 1	M	M	S
Prairie Farmer	232	June 28	S	R	S
Pride of Lisbon	338	June 27	M	N	U
Pride of the West	232		S	L	S

POTATOES PLANTED.—CONTINUED.

NAME.	Yield per acre.	Date of blossoming.	Growth of vines (Strong S, Medium M, Weak W)	Leaves (Round R, Large L, Narrow N, Medium M)	Growth (Spreading S, Upright U, Medium M)
Prince Edward's Island Rose	439	June 20	S	M	S
Princess	329	June 25	S	R	S
Putnam	261	June 23	S	L	S
Queen of the Roses	261	June 19	S	M	S
Queen of the Valley	261	June 20	S	M	S
Ricker's Graft	164	June 18	S	M	
Rhinebeck	261	June 20	S	M	U
Rochester Favorite	397	June 25	S	L	S
Rose's Invincible	271	June 28	S	R	M
Rose's No. 74	128	June 20	S	M	S
Rosy Morn	261	June 22	S	M	S
Rubicund	319	June 30	M	M	S
Rural Blush	198	June 24	S	M	S
Salt Lake Queen	290	June 24	S	L	S
Seneca Red Jacket	82	June 30	S	L	
Sheridan, General	242	June 23	S	M	S
Silver Skin	280	June 25	S	L	U
Snowbank, Knopp's	193	June 24	S	L	
Spaulding	348	June 24	S	LN	M
Summit	261	June 18	S	M	
Sunlit Star	329		S	L	S
Stanton	198	June 22	S	R	S
State of Maine	295	June 23	S	L	S
Steuben Beauty	300	June 22	M	L	
Steuben Chief	213	June 20	S	N	U
Stray Beauty	242		S	L	S
Storr's Seedling	193	June 24	S	R	S
Thunderbolt	261	June 30	M	LR	S
Thornburn	387	June 17	S	L	S
Tunix	290	June 24	S	M	U
Vick, James	145	June 19	S	N	S
Victory	271	June 18	S	L	
Weld's No. 14	93	June 28	M	N	
Weld's No. 22	280	June 24	M	N	S
White Elephant	300				
White Flower	387	June 24	S	L	S
White Lily	290	June 24	S	M	S
White Mountain	193	June 30	M	L	
White Star	193	June 24	S	M	S
Winslow	213	June 20	S	L	S
Yosemite	203	June 24	S	L	S
Frogner's No. 50	318	June 22	S	L	U
Frogner's No. 64 (Rec'd to test)	288	June 22	S	R	U
Angell's No. 27	288	June 23	S	L	U

The following fruits have been received for testing during the year:

From Frank Harlan, Canton, Mo.:—Shackleford Apple, Seedling Apple, No. 3, Strawberry No. 1, Pecan, large fruited.

From Chas. I. Robards, Butler, Bates county, Mo.:—Wells' Grape.

From C. W. Russell, Ironton, Mo.:—Arcadia Blackberry.

From Chas. G. Patterson, Kirksville, Mo.:—Rankin Apple.

From E. Liston, Virgil City, Mo.:—Tharp Apple.

From Herman Jager, Neosho, Mo.:—Ferguson Apple, Seedling Grape No. 100, Jager's No. 43 Grape, Vitis Ruprestris (type) Seedling Grape from a cross of Vitis Ruprestris with Vitis Lincecumii.

From Staymans & Black, Leavenworth, Kansas:—Staymans' No. 1 Strawberry, Staymans' No. 2 Strawberry, Staymans' No. 5 Raspberry, Jewell Grape, Standard Grape, Ideal Grape, No. 15 Grape, No. 18 Grape, No. 26 Grape, No. 42 Grape, No. 44 Grape, No. 47 Grape.

From N. F. Murray, Elm Grove, Holt county, Mo.:—Babbitt Apple.

From A. Ambrose, Nevada, Mo.:—Paris Apple.

From D. S. Holman, Springfield, Mo.:—Holman Apple.

From E. M. Bureckly, Greenville, Ohio:—Downing's Winter Maiden's Blush Apple.

From Wm. Stahl, Nauvoo, Ill.:—Lady Rusk Strawberry.

From C. E. Angell, Oshkosh, Wis.:—Seedling Potato No. 27.

From S. Frogner, Herman, Minn.:—Seedling Potato No. 50, Seedling Potato No. 64.

FRUITS ON THE HORTICULTURAL GROUNDS

OF THE

MISSOURI AGRICULTURAL COLLEGE AND EXPERIMENT STATION.

APPLES.

Babbitt.
Baltzley.
Ben Davis.
Boyd.
Brosdorfee.
Carter's Blue.
Cedar Falls.
Celestial.
Clayton.
Cannon Pearmain.
Cox's Orange Pippin.
Creek.
Cross.
Cullasaga.
Early Harvest.
Ewalt.
Fameuse.
Fanny.
Fink.
Foundling.
Gano.
Gill's Beauty.
Gravenstein.
Great Unknown.
Grimes Golden.
Hamilton.
Henderson.
Henwood.
Herman.
Holman.
Huntsman.
Jonathan.
Kansas Queen.
Kentucky Long Stem.
Kinnard's Choice.
Kossuth.
Lambert.
Lawver.
Limber Twig.
Mamma.
Mammouth Black Twig.
Mann.
Mother.
Nansemond Beauty.
Northern Spy.
Paris.
Peter Gideon's Best.
Picket.
Powers.
Pryor's Red.
Pyle's Red Winter.
Rankins.
Red Astrachan.
Red Bietigheimer.
Rome Beauty.
Salome.
Saylor.
Scarlet Cranberry.
Shackleford.
Sharp.
Shiawassee Beauty.
Shilling.
Sleason.
Small Romanite.
Smiley.
Sparks.
Stephenson's Pippin.
Stuart's Golden.
Stump.
Summer Queen.
Summer Pippin.
Sutton Beauty.
Sweet June.
Twenty Oz.
Willis Sweet.
Willow Twig.
Wine Sap.
Wolf River.
Woodmanse.
W. W. Greening.
Yeates.
York Imperial.

PEARS.

Alex. St. Lucas.
Bartlett.
Belle Lucrative.
Beurre Bosc.
Beurre d'Anjou.
Beurre Clairgeau.
Beurre Giffard.
Buffum.
Clapp's Favorite.
Daimyo.
De la Clince 1407.
De la Clince 1405.
De la Clince 1404.
Doyenne Boussock.
Doyenne d'Ete.

Duc de Bordeaux.
Duchess.
Flemish Beauty.
Frederick Clapp.
Howell.
Jones Seedling.
Keiffer.
Lawrence.
Lawson.
Le Conte.
Louise Bonne de Jersey.
Madame Von Siebold.
Manning's Elizabeth.
Maurice Desportes.
Mikado.
Mount Vernon.
Osband's Summer.
Petite Marguerite.
Seckel.
Sheldon.
Souvenir du Congres.
Tyson.
Urbaniste.
Winter Nelis.

PEACHES.

Canada Iron Clad.
Japan Peach No 7.
Japan Peach No 9.
Japan Peach No 10.
Lovett's White.
New White.
Southern Earley.
Tong Pa.
Wonderful.
Yellow Mystery.

PLUMS.

Abundance.
Botan.
Botanka.
Coes' Golden Drop.
De Soto.
Forest Rose.
Garfield.
Golden Beauty.
Imperial Gage.
Kelsey.
Lombard.
Marianna.
Ogon.
Pottawattamie.
Quaker.
Robinson.
Shropshire Damson.
Spaulding.
Weaver.

CHERRIES.

HEARTS.
Gov. Wood.
DUKES AND MORELLOS.
Belle de Choisy.
Early Richmond.
English Morello.
Late Duke.
Leib.
May Duke.
Montmorency Ordinaire.
Olivet.
Ostheim.
Reine Hortense.

APRICOTS.

Alexander.
Alexis.
Early Golden.
J. L. Budd.
Mikuawa.
Moorpark.
Roman.

NECTARINES.

Early Newington.
Early Violet.
Ellison.
Hardwick.

GRAPES.

August Giant.
Bacchus.
Berckmans.
Brighton.
Centennial.
Concord.
Delaware.
Diamond.
Duchess.
Early Victor.
Eaton.
Elvira.
Empire State.
Frances B. Hayes.
Goethe.
Highland.
Ideal.
Jefferson.

Jessica.
Jewell.
Lady.
Lady Washington.
Moore's Early.
Moore's Diamond.
Moyer.
Niagara.
Potter.
Poughkeepsie Red.
Pocklington.
Standard.
Stayman's No. 15.
Stayman's No. 18.
Stayman's No. 42.
Stayman's No. 44.
Stayman's No. 47.
Vergennes.
Wells.
Woodruff Red.
Worden.
Wyoming Red
Ulster.

STRAWBERRIES.

Belle Bordelaise.
Belmont.
Bidwell.
Bomba.
Bubach No. 5.
Burt.
Champion.
Chas. Downing.
Cloud Seedling.
Covill.
Crawford.
Crescent Seedling.
Crystal City.
Cumberland Triumph.
Enhance.
Eureka.
Excelsior.
Farnsworth.
Gandy.
Gold.
Golden Defiance.
James Vick.
Jersey Queen.
Jessie.
Jewell.
Jumbo.
Kentucky.
Lady Rusk.
Lennig's White.
Lida.
Louise.
Mammouth.
May King.
Miner's Prolific.
Montreuil.
Mount Vernon.
Norman.
Ohio.
Old Iron Clad.
Parry.
Patuxent.
Pearl.
Photo.
Prince of Berries.
Ray's Prolific.
Royal Hautbois.
Stayman's No. 1.
Stayman's No. 2.
Southard's No. 1.
Southard's No. 2.
Summit.
Truitt.
Triomphe de Gand.
Warfield No. 2.
Warren.
Wilson's Albany.

RASPBERRIES.

BLACK CAPS.

Acme Palmer.
Ada.
Carman.
Gregg.
Hillborn.
Hopkins.
Nehund.
Nemaha.
Souhegan.

RED.

Cuthbert.
Marlboro.
Palmer.
Shaffer's Colossal.
Thompson's Early Prolific
Turner.

BLACKBERRIES.

Agawam.
Ancient Briton.
Early Cluster.
Early Harvest.
Erie.
Freed.
Kittatinny.
Minnewaski.
Snyder.
Stone's Hardy.
Wachusett.

DEWBERRIES.

Bartle's.
Lucretia.