



DR.V.S.PARMER University of Horticulture
Project on Fruit Trees Management of Natural Resources

STUDIES ON THE EFFECT OF PLANT DERIVED HYDROLYZED PROTEIN (PROTEINEX) IN FRUIT TREES

V.S.Parmar University of Horticulture and Forestry of Himachal Pradesh (State Agricultural University in India), a leading University doing Research work on fruits is running a Project on Sustainable Health Management of fruit trees like plums, apple, apricot etc.

Proteinex, a plant growth promoter works on principles of accelerating photosynthetic activity, Cytokinins, Auxins precursors and hydrolyzed protein complex. This is 100 per cent plant derived natural product.

Trials with Proteinex were conducted on fruits, Viz, plum, Apricot and apple during the years 1988-89, 1989-90 and 1990-91.

Very astonishing and promising results have been obtained which are summarized as follows,

EXPERIMENTS ON PLUM

Treatment details: Spray three different concentration (0.1, 0.2 & 0.3%) applied as foliar two times one at 3 weeks before fruit set and another dose at fruit set.

Table 1. Effect of Proteinex on fruit yield and quality of Plum (I Year)

	Treatments			Control	CD*
	Proteinex 0.1%	Proteinex 0.2%	Proteinex 0.3%		
Fruit Set (%)	15.32	16.34	24.92	14.41	3.71
Fruit Retention (%)	35.74	36.90	36.24	20.67	4.14
Yield / tree (Kg)	18.40	21.63	28.00	14.75	3.18
TSS (%)	16.00	16.60	17.77	15.00	1.69
Acidity (%)	1.96	1.82	1.71	2.00	0.17

CD* = Critical Difference at 5% level. Statistically Significant

Inference: 0.3% foliar concentration found effective in increasing the fruit yield and quality.

Table 2. Effect of Proteinex on fruit yield and quality of Plum (II Year)

	Treatments			Control	CD*
	Proteinex 0.1%	Proteinex 0.2%	Proteinex 0.3%		
Fruit Set (%)	6.80	9.5	12.60	5.40	3.10
Fruit Retention (%)	9.90	10.00	10.00	10.00	NS
Yield / tree (Kg)	9.50	12.00	16.50	8.50	3.80
Leaf Area (cm)	17.58	16.70	19.19	14.28	1.14
Fruit Weight (gm)	52.00	50.80	53.10	41.40	5.19

CD* = Critical Difference at 5% level. Statistically Significant

NS* = Not Significant

Inference: 0.3% foliar concentration found effective in increasing the fruit yield, leaf area and fruit weight.

Table 3. Effect of Proteinex on fruit yield and quality of Plum (I Year)

	Treatments			Control	CD*
	Proteinex 0.1%	Proteinex 0.2%	Proteinex 0.3%		
Fruit Set (%)	11.70	13.30	14.60	8.20	2.21
Fruit Retention (%)	10.90	11.20	12.80	7.90	0.21
Yield / tree (Kg)	21.50	22.00	24.00	16.50	3.30
Fruit weight (gm)	38.90	39.70	37.40	30.10	3.62
TSS (%)	11.50	12.80	12.20	10.90	NS
Acidity (%)	1.90	1.80	1.80	1.80	NS

CD* = Critical Difference at 5% level. Statistically Significant

NS* = Not Significant

Inference: 0.3% foliar concentration found effective in increasing the fruit yield, leaf area and fruit weight.

EXPERIMENTS ON APPLE

Treatment details: Spray three different concentration (0.1, 0.2 & 0.3%) applied as foliar two times one at 3 weeks before fruit set and another dose at fruit set.

Table 4. Effect of Proteinex on fruit yield and quality of Apple (I Year)

	Treatments			Control	CD*
	Proteinex 0.1%	Proteinex 0.2%	Proteinex 0.3%		
Fruit Set (%)	41.70	33.40	33.50	26.40	12.90
Fruit Retention (%)	57.74	61.46	58.96	55.32	3.01
Yield / tree (Kg)	6.56	6.10	6.13	4.13	NS
Fruit weight (gm)	157.00	161.00	165.00	138.00	NS
TSS (%)	12.10	12.20	12.50	11.00	NS
Acidity (%)	0.21	0.21	0.19	0.22	NS

CD* = Critical Difference at 5% level. Statistically Significant

NS* = Not Significant

Inference: 0.3% foliar concentration found effective in increasing the fruit yield, leaf area and fruit weight.

EXPERIMENTS ON APRICOT

Treatment details: Spray three different concentration (0.1, 0.2 & 0.3%) applied as foliar two times one at 3 weeks before fruit set and another dose at fruit set.

Table 5. Effect of Proteinex on fruit yield and quality of Apricot (I Year)

	Treatments			Control	CD*
	Proteinex 0.1%	Proteinex 0.2%	Proteinex 0.3%		
Fruit Set (%)	52.00	58.00	57.00	49.00	5.50
Fruit Retention (%)	29.00	34.00	37.00	28.00	4.20
Yield / tree (Kg)	20.00	24.00	30.00	19.00	3.20
Apricot Shoot Growth (cm)	30.00	29.70	32.20	28.70	1.30
Chlorophyll content mg/g	35.10	36.80	36.70	33.20	1.41
Fruit Volume (cc)	19.20	21.40	22.10	19.40	2.82

CD* = Critical Difference at 5% level. Statistically Significant

NS* = Not Significant

Inference: 0.3% foliar concentration found effective in increasing the fruit yield, leaf area and fruit weight.

CONCLUSION

Proteinex improved the fruit quality in terms of increasing the content of total soluble solids, total sugars, and soluble proteins. Visible differences are observed in terms of fruit size and weight in turn reflected in yield.

Recommendation of 20 to 30 ml in 10 liter of water and sprayed through foliar during early morning or late evening is found increasing the fruit yield.

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