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Changes in the Composition of Blood in Rabbits Fed on Raw and Cooked Soybeans.

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According to Horvath[1] the blood of rabbits fed exclusively on water-soaked raw soybeans shows an increase in uric acid, urea nitrogen, inorganic phosphorus and cholesterol. Extending this study to cooked soybeans we obtain these results: 1. There are no demonstrable changes in the blood composition of rabbits whether they are fed cooked or raw soybeans or the control diet of millet and cabbage except perhaps in cholesterol content. 2. Uric acid is present in rabbit's blood only in negligible quantity. 3. The blood cholesterol value is perhaps slightly higher in animals fed on soybeans than in controls. There is, however, no appreciable difference in cholesterol levels between rabbits fed on cooked and raw soybeans.

The experimental data are summarized in Tables I and II. It should be noted that samples of blood were obtained not from the marginal ear vein but heart puncture. Both Folin and Benedict's methods failed to show any measurable quantity of uric acid in rabbit's blood. Only by employing Folin's improved method[2] and at the same time increasing the blood filtrate from 5 to 10 cc. and reducing the standard to 2 cc., the uric acid figures given in Table I were obtained.

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[1] Horvath, A. A., *J. Biol. Chem.*, 1926, **68**, 343.

[2] Folin, O., *J. Biol. Chem.*, 1930, **86**, 179.

TABLE I.

Date	Rabbit No.	Weight	Food	Uric acid mg. %	Urea N mg. %	Inorganic P mg. %	Cholesterol mg. %
April 10	1 ♂	1550	Millet and cabbage	Faint trace	20.4	3.50	77.0
	2 ♂	1540		" "	26.6	3.35	67.7
	3 ♀	1640		" "	23.8	4.73	61.5
	4 ♀	1380		" "	26.6	4.87	84.0
	6 ♂	1560		" "	21.0	3.65	85.1
	7 ♀	1550		" "	22.4	3.44	63.4
	8 ♀	1900		" "	26.6	3.06	58.0
April 11	9 ♂	1500	Millet and cabbage	0.85			
	10 ♀	1400		0.86			
	11 ♀	1570		0.95			
	13 ♂	1340		0.84*			
	14 ♀	1880		0.89			
	15 ♀	1800		0.93			
	16 ♀	1600		0.85			
April 23	3	1665	Raw soybeans (2 weeks)	1.01	23.0	5.0	90.9
	6	1550		0.89	20.7	4.2	78.4
	7	1930		0.83*	21.7	3.9	83.3
	8	1860		0.93	25.9	3.4	81.2
	9	1570	Cooked soybeans (2 weeks)	0.92	24.9	3.9	77.0
	10	1190		0.96	20.0	4.6	100.0
	13	1360		1.04	22.4	3.3	83.3
	14	1650		0.80*	22.1	3.9	75.8
	15	1800		0.80	23.4	3.9	70.1
May 16	2	1540	Cooked soybeans (3 weeks)	0.77	21.0	3.3	100.0
	3	1760		0.69	20.0	4.7	95.2
	4	1580		0.60	21.3	4.1	80.0
	6	1655		0.60*	15.4	4.0	77.0
	7	2020		0.62	18.9	4.0	83.3
	8	1870		0.65	20.3	3.4	111.1
	9	1660	Raw soybeans (3 weeks)	0.73	17.5	4.2	62.5
	10	1490		0.60	17.2	4.6	86.9
	11	1800		0.77	21.7	6.5	100.0
	13	1470		0.69*	20.0	3.3	80.0
	14	1860		0.60	19.3	3.8	77.0
	15	1830		0.60	15.4	3.8	66.6

*Determinations made according to Folin's new method (1930). Even with this sensitive test it was necessary to use 10 cc. instead of 5 cc. filtrate to obtain sufficient color for comparison.

TABLE II.

Average values in mg. per 100 cc. blood serum.

Food	Uric acid	Urea N	Inorganic P	Cholesterol	Reference
Millet and cabbage	2.79	18.3	5.31	57.5	Horvath
Raw soybeans	3.23	37.6	5.89	72.7	
Millet and cabbage	Trace	23.9	3.80	70.9	Tso and Ling
Raw soybeans	"	20.2	4.27	80.7	(Present paper)
Cooked soybeans	"	20.8	3.91	86.6	