



( 2006 )

(2007 Aitken 2004 Schroeder)

(2005 Sforicn)  
(1990 Greenaway)

(2002 Capasso Calstaldo)

(1998 Burdock)

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 (2004) SAS  
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 .( 1955 Duncan)  
  
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 (P<0.05) ( / 2.03 )  
 .( / 1.94 )  
 ( 6 )  
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 (2)  
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 . ( / 1.81 1.77 ) ( /  
 (P<0.05)  
  
 (3 )  
 (P<0.05)  
 15 ( 6 5 4 )  
 / 0.87 0.86 0.86  
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10 15  
 / 5.48 5.96 / 5.62 6.03  
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( 5 )

158.51 142.59 145.48 140.39 6 (P<0.05)  
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15  
 . ( / 158.51 152.77 145.61)

( / ) .1  
 . ( ± )

( 6 )	( 5 )	4 ) (	( 0)
0.22 ± 1.94 A b	0.20 ± 1.94 A b	0.18 ± 1.89 A a	5
0.35 ± 1.97 A ab	0.31 ± 1.98 A ab	0.25 ± 1.93 A a	10
0.30 ± 2.00 A ab	0.29 ± 1.98 A ab	0.20 ± 1.90 B a	15
0.28 ± 2.03 A a	0.32 ± 2.02 A a	0.19 ± 1.93 B a	

( )  
 .(P<0.05) ( )

2. ( / )  
.( ± )

( 6 )	( 5 )	4 ) (	
0.18 ± 1.81 A b	0.25 ± 1.77 AB b	0.12 ± 1.69 B a	( 0)
0.30 ± 1.86 A ab	0.27 ± 1.82 A ab	0.14 ± 1.66 B a	5
0.27 ± 1.89 A a	0.33 ± 1.87 A a	0.14 ± 1.72 B a	10
0.34 ± 1.94 A a	0.29 ± 1.88 A a	0.11 ± 1.69 B a	15

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.(P<0.05)

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3. ( / )  
.( ± )

( 6 )	( 5 )	4 ) (	
0.08 ± 0.75 A b	0.03 ± 0.74 A b	0.05 ± 0.75 A b	( 0)
0.12 ± 0.73 A b	0.11 ± 0.73 A b	0.08 ± 0.73 A b	5
0.16 ± 0.80 A ab	0.15 ± 0.80 A ab	0.17 ± 0.80 A ab	10
0.19 ± 0.87 A a	0.22 ± 0.86 A a	0.17 ± 0.86 A a	15

( )

.(P<0.05)

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4. ( / ) .( ± )

6 ) (	5 ) (	4 ) (	
0.84 ± 5.25 A c	0.92 ± 5.25 AB c	0.85 ± 5.13 A c	( 0)
0.92 ± 5.32 A c	0.73 ± 5.24 A c	0.68 ± 5.09 B c	5
0.69 ± 5.70 A b	0.82 ± 5.62 A b	0.53 ± 5.48 B b	10
0.96 ± 6.15 A a	0.63 ± 6.03 AB a	0.40 ± 5.96 B a	15

( ) ( )  
(P<0.05)

5. ( / ) .( ± )

	6 ) (	5 ) (	4 ) (	
Ns	± 140.39 18.33 A b	± 141.64 21.09 A a	± 139.58 17.48 A a	( 0)
Ns	± 145.48 22.70 A b	± 141.97 18.55 A a	± 141.66 21.07 A a	5
Ns	± 142.59 18.36 A b	± 144.68 20.43 A a	± 140.43 17.33 A a	10
*	158.51 A a	± 152.77 20.52 AB a	± 145.61 22.76 B a	15
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( ) ( )  
(P<0.05)

(2004 Schroede)

Ozan 2005

Teixeira 2005

Salatino)

(2009

Banskota 2007

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.2006 .

.114-109 :4 .

.2011 .

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## **INFLUENCE OF PROPOLIS EXTRACT TREATMENT ON SOME BLOOD MINERAL LEVELS OF TURKISH AWASSI LAMBS**

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### **ABSTRACT**

This study was carried out at the Sheep and Goat Research Station, State Board for Agricultural Research /Ministry of Agriculture /Abu-grab (20 km west of Baghdad). The objective of study was to investigate the effect of Propolis extract ( 0 , 5 , 10 and 15 ml) on some mineral levels in blood. Twenty four Turkish Awassi weaned lambs (90 day years old) over the period from 20-2-2011 until 20-5-2011. Blood calcium levels did not differ significantly, one month post treatment, whereas, the difference became significant, two and three months post propolis treatment. Blood calcium increased obviously with increased propolis extract level. Calcium level was different ( $P \leq 0.05$ ) among treatment months using 10 and 15 ml of propolis extract. Oral treatment of 15 ml of propolis extract led to increased calcium level to 1.88 and 1.94 M/ litter , two and three months post treatment. Blood phosphorus level was differ significantly ( $P \leq 0.05$ ) among treatment groups. Blood magnesium was significantly ( $P \leq 0.05$ ) affected by propolis extract. The differences in magnesium level were not significant within treatment period. Blood potassium in Turkish Awassi lambs was increase using 15 and 10 ml of propolis extract. Potassium level was increased with advanced the treatment period. The potassium level was significantly ( $P \leq 0.05$ ) with advanced age of lambs to six months. Blood sodium level did not differ significantly using 5 and 10 ml of propolis extract, while it increased ( $P \leq 0.05$ ) using 15 ml of extract. In conclusion, propolis extract was profoundly affected blood calcium, potassium and sodium level in Turkish Awassi lambs and their growth rate consequently.

**Key words:** Propolis Extract –Blood Minerals-Turkish Awassi lambs.