



μ μ

&

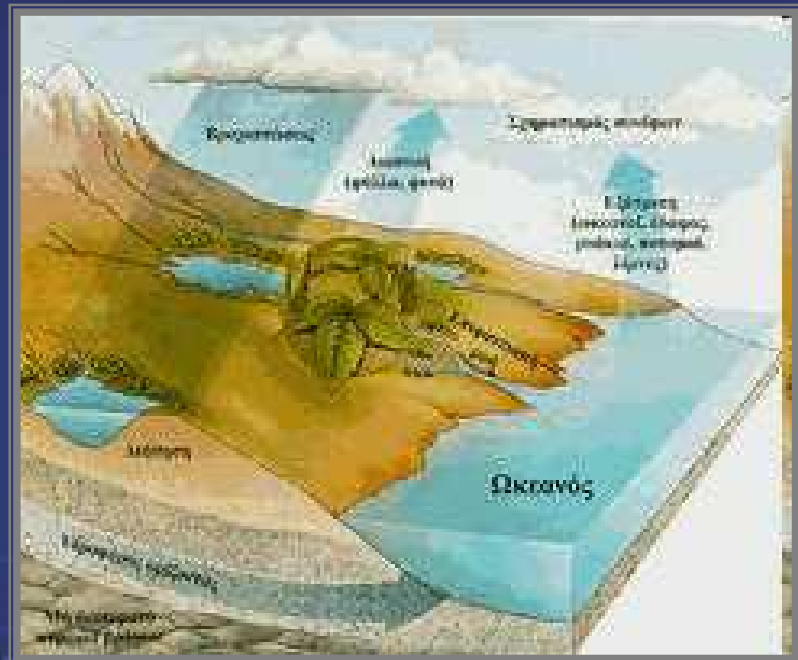
&

μμ



( )

4 :



$\mu$  4.1

(b)  $\mu$  Ampt, cm.  
 $\mu$  Horton, (c)  $\mu$  Philip  
(e)  $\mu$  n=30%  
( )  $\mu$  Holtan, (d)  $\mu$   
 $\mu$  Kostiakov, Green -  
 $\mu$   $h = 36$

**Πίνακας 4.2** Πειραματικά δεδομένα διήθησης και απορροής.

Χρόνος (min)	Αθροιστική διήθηση (cm)	Χρόνος (min)	Αθροιστική διήθηση (cm)
3	0.3344	75	3.4324
5	0.4992	80	3.5840
10	0.8324	85	3.7335
15	1.1014	90	3.8782
20	1.3437	95	4.0195
25	1.5746	100	4.1566
30	1.7975	105	4.2913
35	2.0073	110	4.4231
40	2.2120	115	4.5536
45	2.4043	120	4.6815
50	2.5910	125	4.8073
55	2.7713	130	4.9284
60	2.9458	135	5.0482
65	3.1121	140	5.1679

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# Kostiakov

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$$F = a \cdot t^b$$

μ μ :

$$\log F = \log a + b \log t$$

μ μ  $b,$  μ μ μ μ μ  
μ cm) μ  $t$  ( μ μ hr), μ :

$$a = 2.9060$$

$$b = 0.7064$$

:

$$F = 2.9060 \cdot t^{0.7064}$$

$F$  cm t .



$$\ln(f_0 - f_c) = 1.594 \Rightarrow f_0 = 6.358 \text{ cm/hr}$$

$$k = 2.214$$

,  $\mu$  Horton

$$f = 1.436 + 4.921e^{-2.214t}$$

$f$  cm/hr       $t$  hr.

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# Holtan

$\mu$                      $\mu$                      $\mu$                      $\mu$                      $\mu$   
 $\mu$                      $\mu$                      $\mu$                      $\mu$                      $\mu$   
 $\mu$                      $\mu$                      $\mu$                      $\mu$                      $\mu$

$$f = f_c + aF_p^n \Rightarrow f - f_c = aF_p^n \Rightarrow \ln(f - f_c) = \ln a + n \ln(F_p)$$

$f_c$                      $\mu$                      $\mu$                      $\mu$                      $\mu$   
 $\mu$                      $\mu$                      $\mu$                      $\mu$                      $\mu$   
 Horton                     $F_p$                      $\mu$                      $\mu$   
 $\mu$                      $\mu$                      $\mu$                      $\mu$

$$F_p = h \cdot n - F = 36 \cdot 0.3 - F = 10.8 - F$$

$\mu$  .



$\mu\mu$   
:

$\mu$   
 $\mu$

$\mu$

$\mu$

$\ln(f-f_c)^n$

$\ln(F_p)$

$$a = 1.92 \cdot 10^{-8}$$

$$n = 8.2820$$

:

$$f = 1.436 + 1.92 \cdot 10^{-8} (10.8 - F)^{8.2820}$$

$F,$

:

$\mu$

$$f = dF/dt$$



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## Philip

μ

Philip,

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$$f = \frac{1}{2} S \cdot t^{-0.5} + A$$

μ

μμ

μ

μ

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$$A = 0.674$$

$$S = 2.643$$

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,

:

$$F = \int f dt = 0.674 \cdot t + 2.643 \cdot t^{0.5}$$