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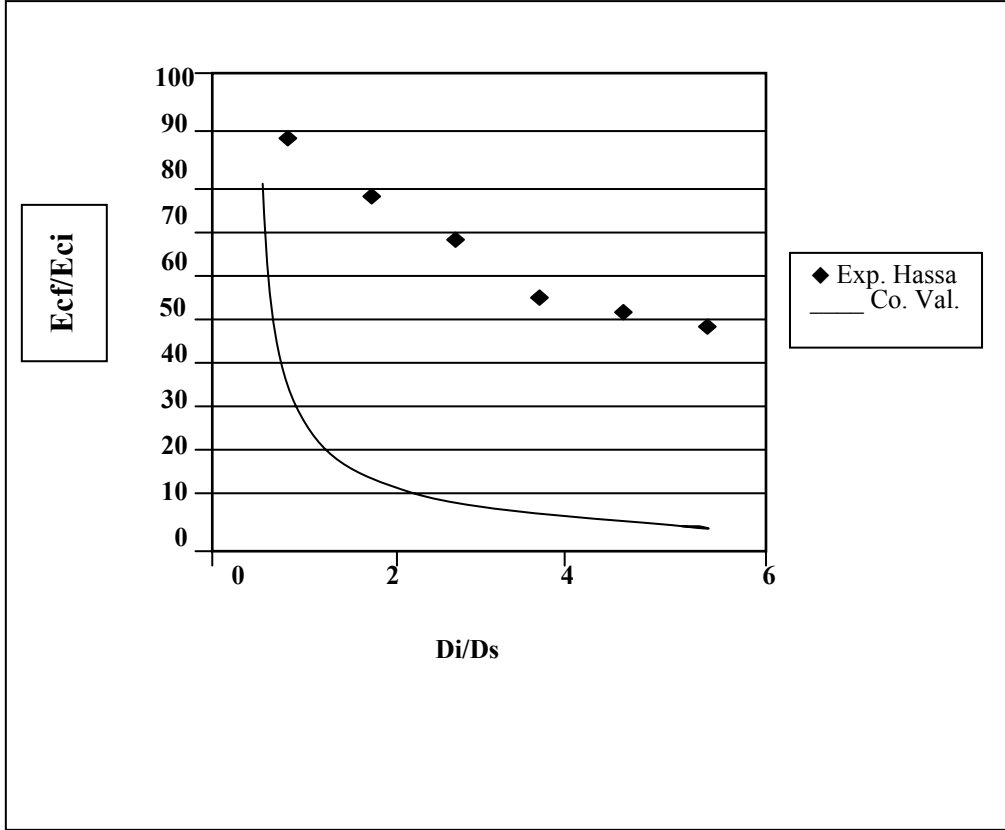"   "   .
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Ecf/Eci

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◆ Exp. Hassa
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%   . ( )
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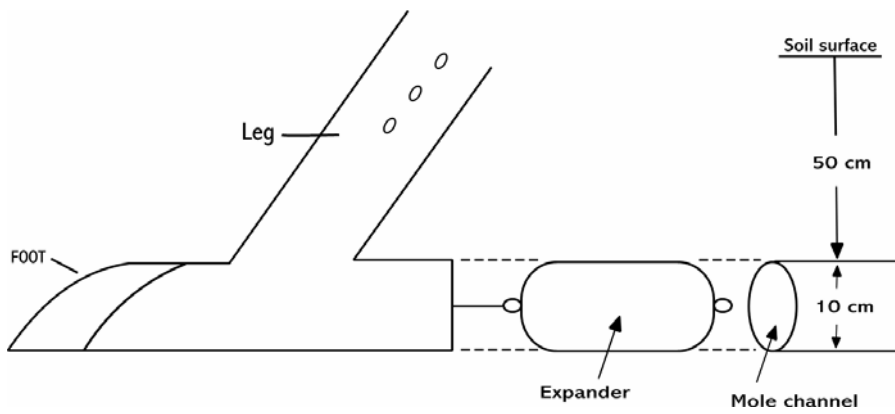
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)   :CF   Rd   LF   Dd

(θu)   (θd)   (

                                                    :   (Dd)

$Dd = (θu – θd).\dfrac{Ds}{100}$ (1)

( )   .   Ds

.

                              :   (LF) "   "

$LF = Dd / Di$ (2)

:   (Rd) "   "   .   Di

$Rd = Dd / t$ (3)

        LF   .   t

                                        :   (CF) "   "

$CF \quad 3.2\,1 – 3.25\ LF$ (4)

                                                            (4)

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(ECf / ECi)

ECi   ECf   (DI/Ds)

Ds   Di   .

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Subsurface Mole Drainage For Leaching Salt-Affected Soils

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ABSTRACT :

A large area in the eastern region of Saudi Arabia has salt-affected soil. That problem became more rigorous when it associated with a shallow hard pan. In a representative location four plots were designed for evaluating the effect of the subsurface mole drainage on salt leaching. Each plot was 8m x 30m.

Mole drainage was installed (depth 55cm) to cover two plots and the other two plots were left without drainage installation. Initial soil salinity was 49 ds/m. Heavy irrigation (12 cm water depth) was performed weekly for six months. Moisture content was determined 3 to 4 days from irrigation. Neutron probe was used to monitor soil moisture in the field at 30 cm depth for both drained and non-drained plots. In addition to the moisture content the salinity of the drainage water was determined periodically. The "drainage rate" varied between 6.0 and 7.4 mm/day. The "concentration factor" varied between 1.8 and 2.1. Upon the calculation of the "salt leaching curve" and comparing it with that at Coaschilla Valley, California, it was concluded that the efficiency of mole drainage for salt leaching was very low compared with leaching under surface irrigation.