Effect of the system of soil management on vegetative growth , yield mid fruit quality of washington navel orange trees

Bahgat Mahmoud Helail Zafaraney

Clsa11oultivation ana. 80i1 maJ1agement praotices in fruitorchards is considered the most expensive fruit produotionpract;l.oe owillgto the continuous increase in. la.bour costal3d the pr:!JJl;l.tive methOdsa.pplied. It is nowrecognizedthat the effeeieXlCr of clean cultivation in oontrollingweeds and maintaining soil moisture and fertilitY' is notsufficieni17 enough to justify the costs of these opera;ti ons-Since navel orange trees suffer' in man3'years excessivefruit let DROP, owing to the sensetivi ty of these trees toennroDJDentaJ.streese s (particularly water stre ••) duringthe ori tical periods of young fruit development. Therefore8J17 cultural operation that can maintsin a favoura'Dle treewater 'bal~oe m&1' help in reduoing the severi tj" of f'rui tletDROPs, and aa.1 contribute to ~er yields. It is believedthat the development of a suitable syste.w.of s oil managementcan be beneficial in this respeot. This investigation wasuwier taken to study the effect of the s~tem of 80i1managementon weed control, vegetative g1"Owth, leaf' nutrientcontent, frUit set ,fruit d1'OP aIld yield as well as the fruitqusJ.ity of 'IuMDgton navel Orangetrees. Fifty trees nearl1similar in their growth vigour were devoted for this study-Eacl1 treatment was represented lly ten trees. These treatment.included:1) Clean cultivation" control'" carried out three timesthroughout the year b1 hand hoeing.2) lIulch treatment the s011 under the trees was kept coveredthe &ole year with rice siraw mulch to the thicknesSof abou~].0-J.5 om~,:3• Hel'b:lD1da1 aPplication I ~he first herbicide treatmen tawere tlPp11ed 1a ear11 Febru&r1 within the specitiedplots.a. Da1apOJL "DowpOI1 "5"+ Paraquat" Graaoxone": paraquatat 1.5 L/ feddan in 100 L, followed b1 aalapon at:3 Kc/feddan in JOOLsprayed on the rene-d weedsand after that with 10 d83!J&11 add1tioDl spraY'of dalapoa at 3 Kc in)00 L took place. OnlJ' oneaprar was used dur!rJg· the ,mole se&8011.b~: Broaacll " B.J"t&r' X + DiuroJl " Ka1'mex". broll&cil at3 Kc+ d1uroa at 1 Kg in 600 L/feddaJl were 8prfl38d 0. t.u srowi».C weeds. Only one spras was use d dUr1nCthe wRole growiaC season.o~' DalOOJl" DoIrpOIl' s"+ Bromac1l" RJ'Vartx": da1aponat :3 1&/ teddaJ1 1Jl 300 L, followed 'b7 b1"OJB&C11 at2 K&lfeddaa in 400 L, in a a.quant1al applicationafter 15 dais. 0nl3' one spr&7 was us.d dur1DCthepoiILll& se•• on. Treatlaents started FebruarY' 1978~Data •• re obtained d,urinc 1979 and 1980.The results Goulet be summarized as follow'A.. WeedsDDnaJ .e48 were coaplete17 oontrolled by. riceastra. auloll., .4 ll.erbio1de treat.ll'li8, wld1e clean