

Supplementary Materials

Table 1. Irrigation water quality criteria classification.

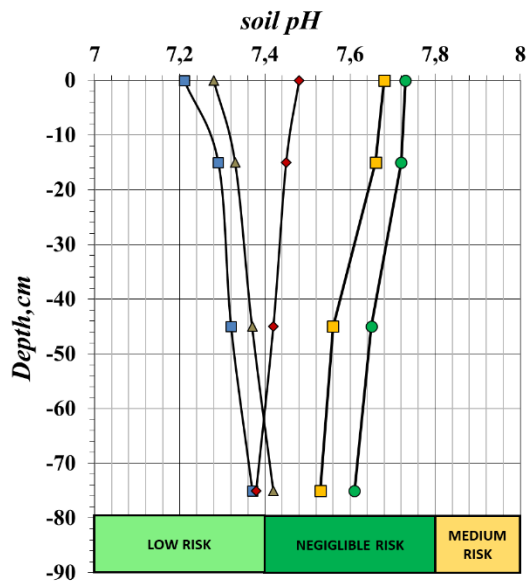
Potential Irrigation Problem	Parameter	Unit	Degree of Restriction on Use		
			None	Slight to Moderate	Severe
Salinity (effects on crop water availability)	EC	$\mu\text{S/cm}$	< 700	700–3000	> 3000
	TDS	mg/L	< 450	450–2000	> 2000
Permeability (effects on infiltration rate of water into soil)	SAR = 0–3	and EC	> 700	700–200	< 200
	SAR = 3–6	$\mu\text{S/cm}$	> 1200	1200–300	< 300
	SAR = 6–12		> 1900	1900–500	< 500
	SAR = 12–20		> 2900	2900–1300	< 1300
	SAR = 20–40		> 5000	5000–2900	< 2900
Specific ion toxicity (effects on sensitive crops)	Sodium	mg/L	< 3.0	3.0–9.0	> 9.0
	Chloride	mg/L	< 140	140–350	> 350
	Boron	mg/L	< 0.7	0.7–3.0	> 3.0
Miscellaneous effects (effects on susceptible crops)	Nitrate-Nitrogen	mg/L	< 5	5–30	> 30
	Bicarbonate	mg/L	< 90	90–500	> 500
	pH	–	Normal range 6.5–8.4		

Table 2. Classification for infiltration and permeability risk.

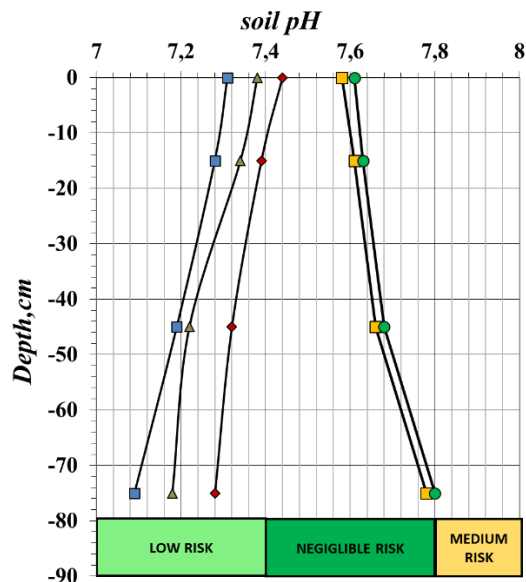
	SAR					Rating	Suitability
	< 3	3–6	6–12	12–20	> 20		
EC ($\mu\text{S/cm}$)	> 700	> 1200	> 1900	> 2900	> 5000	3	High
	700–200	1200–300	1900–500	2900–1300	5000–2900	2	Medium
	< 200	< 300	< 500	< 1300	< 2900	1	Low

Table 3. Classification for trace element toxicity.

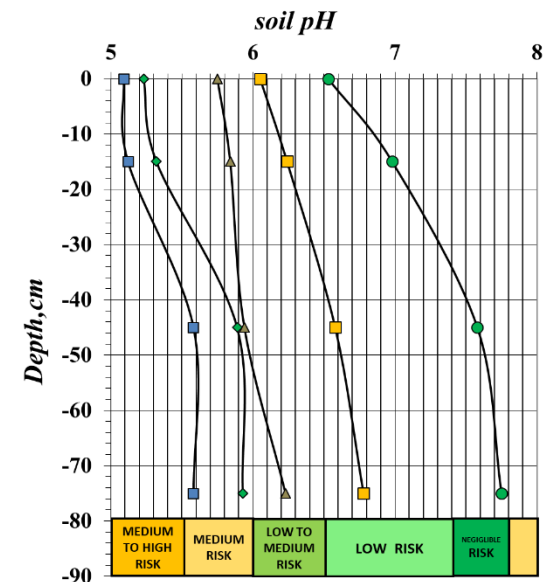
Element	Range (mg/L)	Rating	Suitability
Copper	Cu < 0.2	3	High
	0.2 < Cu < 5.0	2	Medium
	Cu > 5.0	1	Low
Iron	Fe < 5.0	3	High
	5.0 < Fe < 20.0	2	Medium
	Fe > 20.0	1	Low
Manganese	Mn < 0.2	3	High
	0.2 < Mn < 5.0	2	Medium
	Mn > 5.0	1	Low
Zinc	Zn < 2.0	3	High
	2.0 < Zn < 10.0	2	Medium
	Zn > 10.0	1	Low



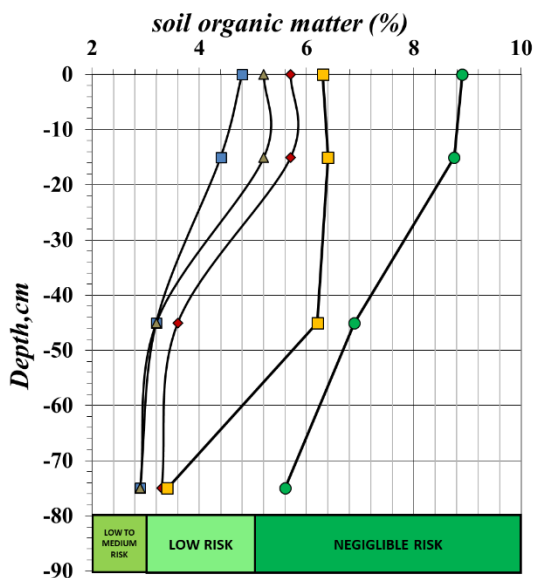
(a)



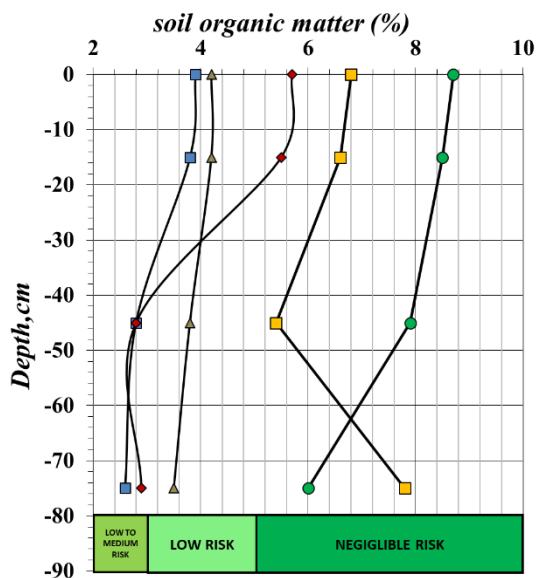
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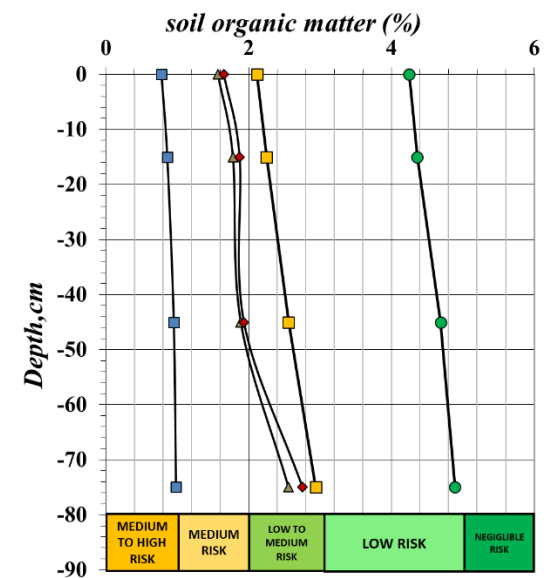
(c)



(d)



(e)



(f)

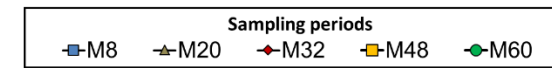
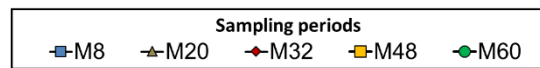
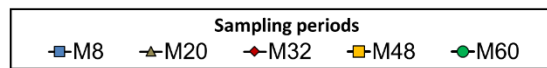
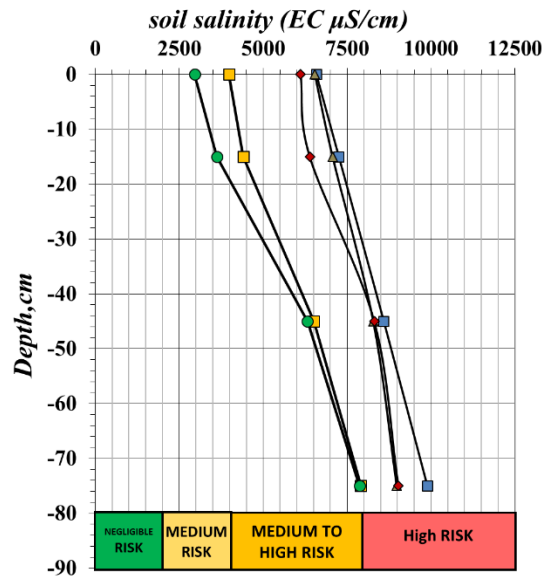
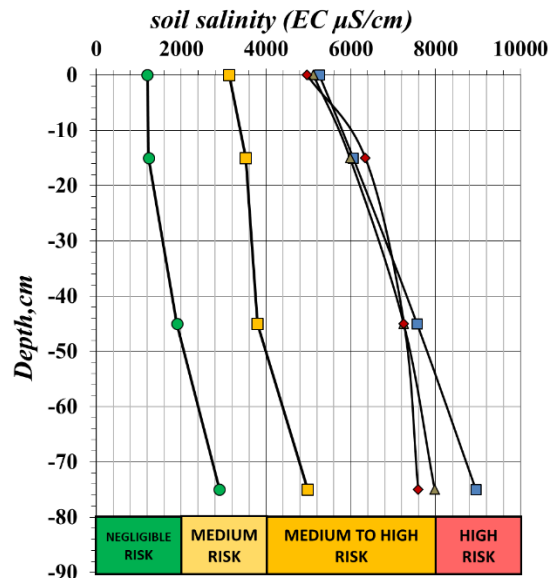


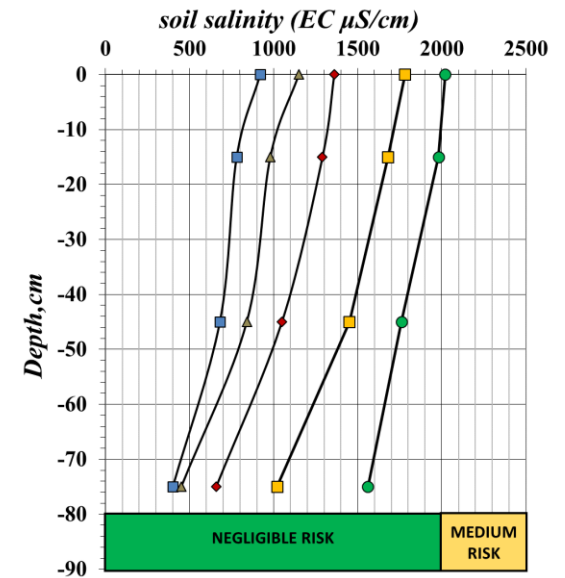
Figure 1. Vertical variation of soil pH (a-c) and soil organic matter (d-f) in the pilot fields AF1, AF2 and KF1 for selected sampling periods, respectively.



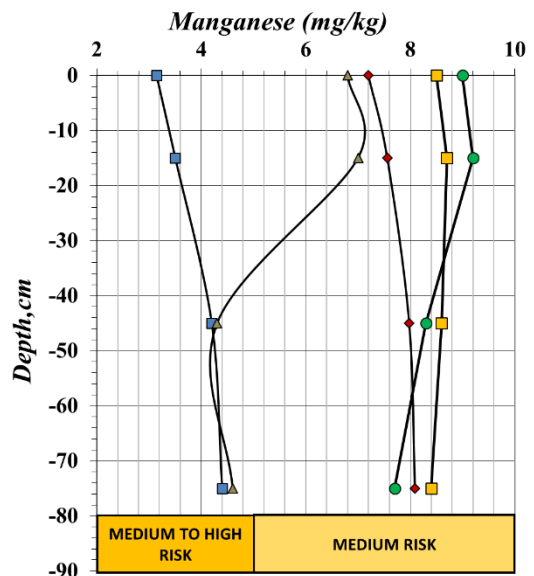
(a)



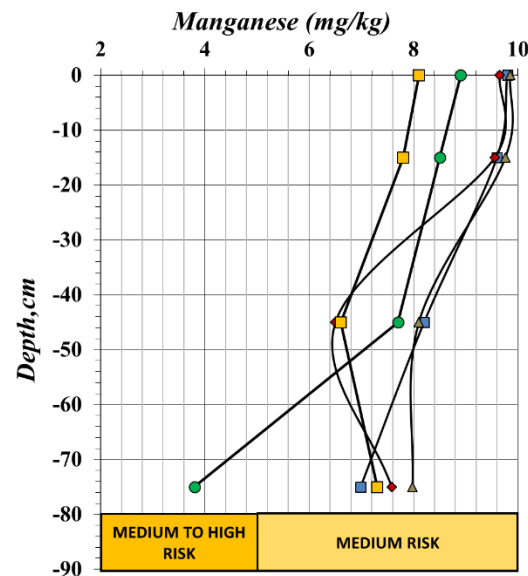
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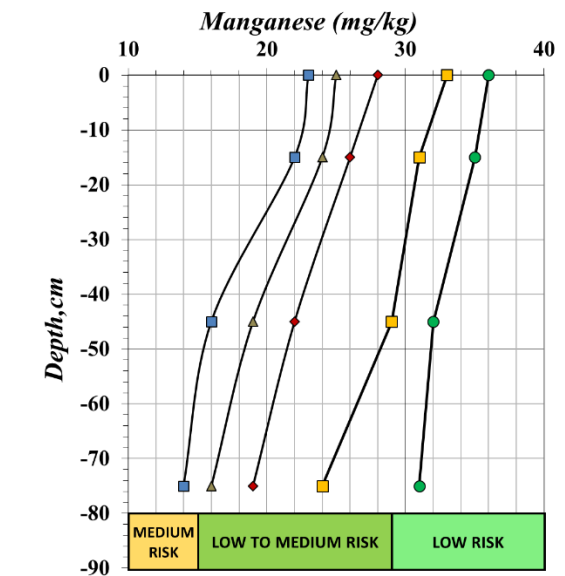
(c)



(d)



(e)



(f)

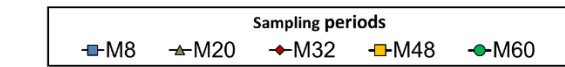
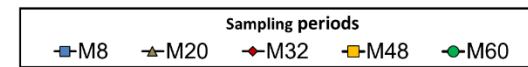
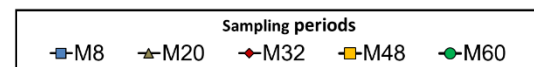
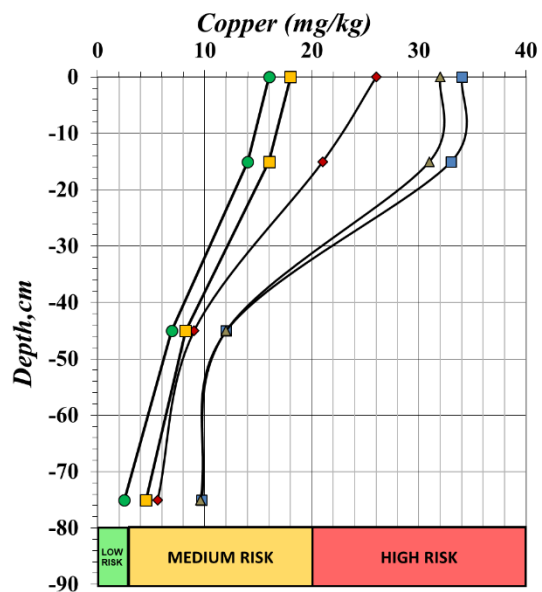
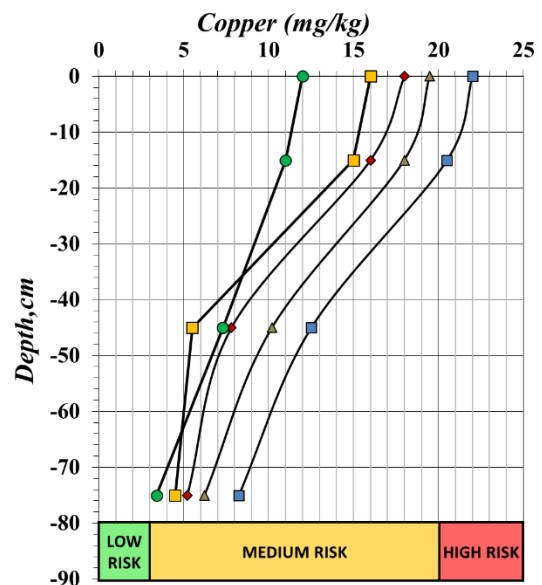


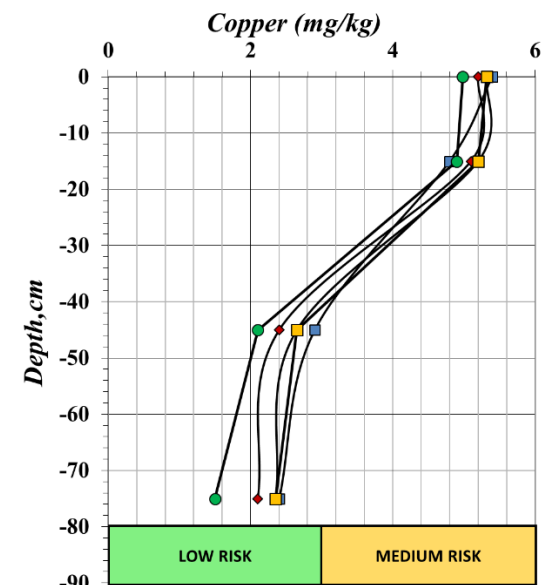
Figure 2. Vertical variation of soil salinity (a-c) and manganese (d-f) in the pilot fields AF1, AF2 and KF1 for selected sampling periods, respectively.



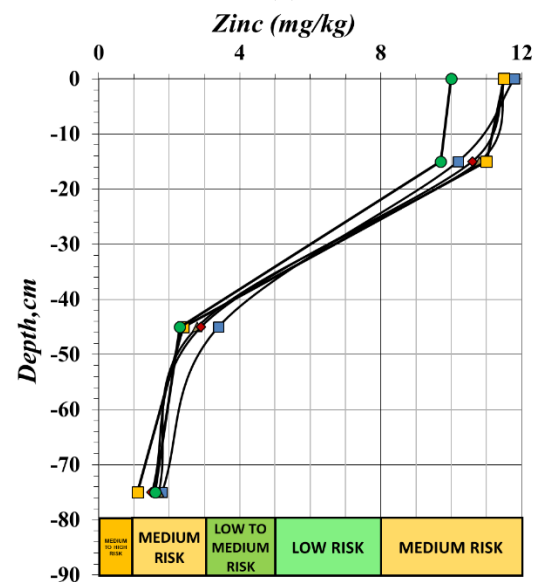
(a)



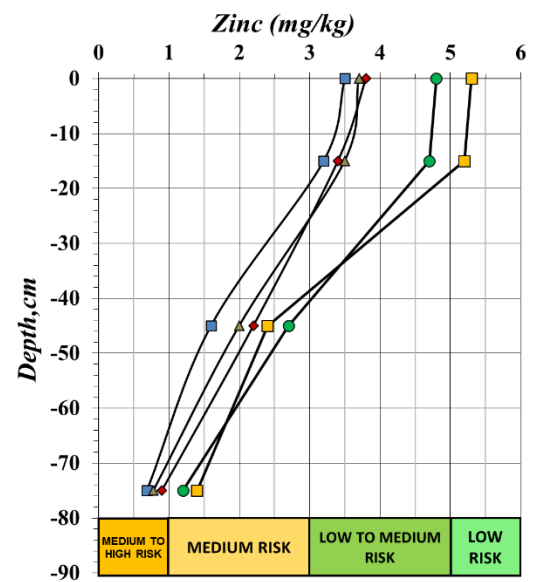
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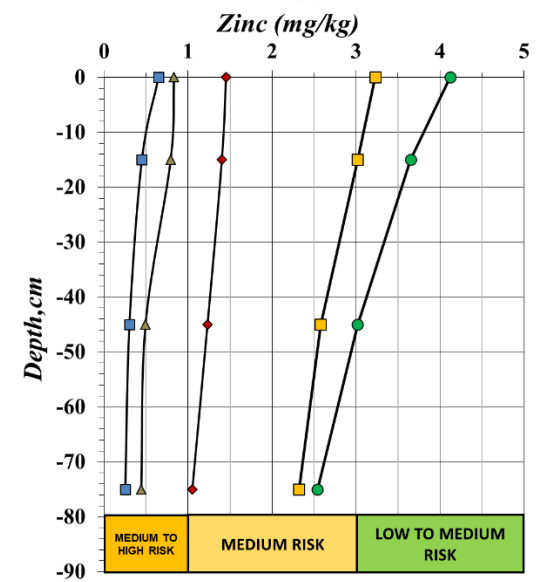
(c)



(d)



(e)



(f)

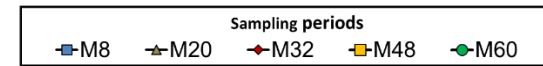
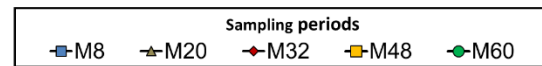
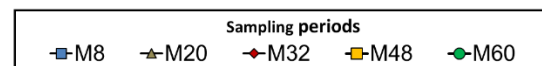


Figure 3. Vertical variation of copper (a–c) and zinc (d–f) in the pilot fields AF1, AF2 and KF1 for selected sampling periods, respectively.

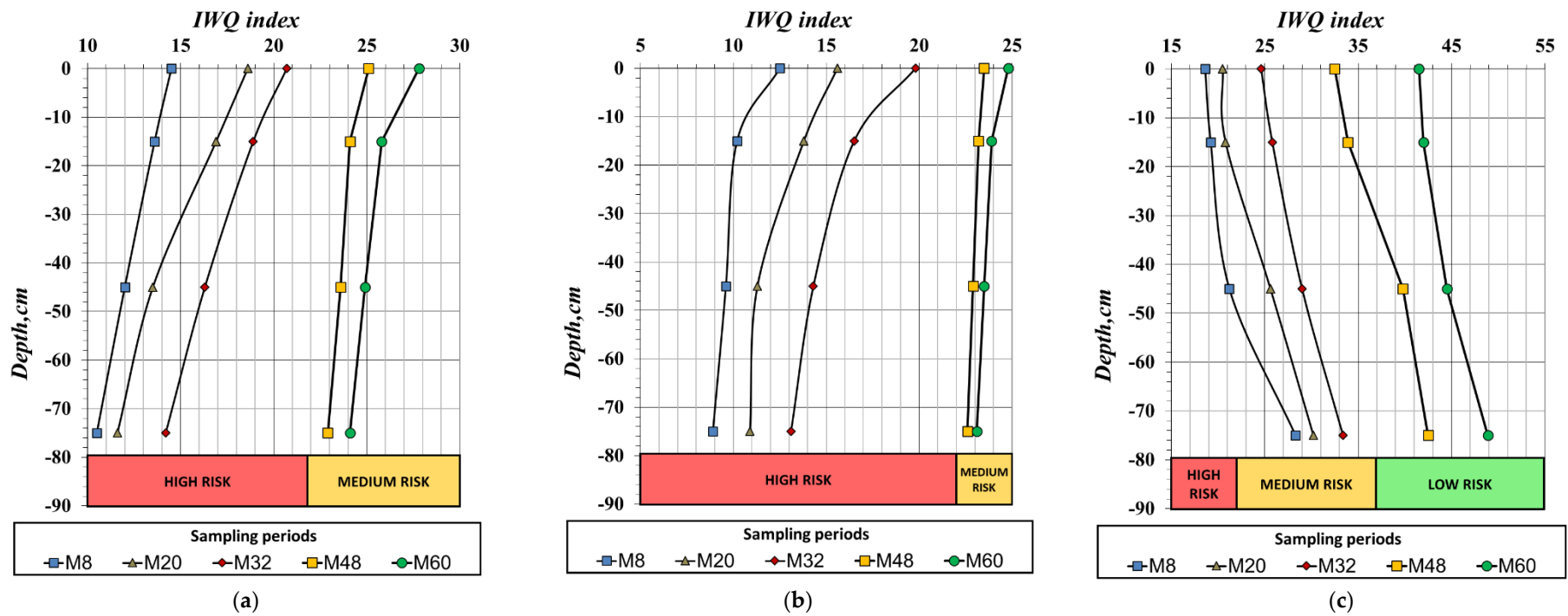
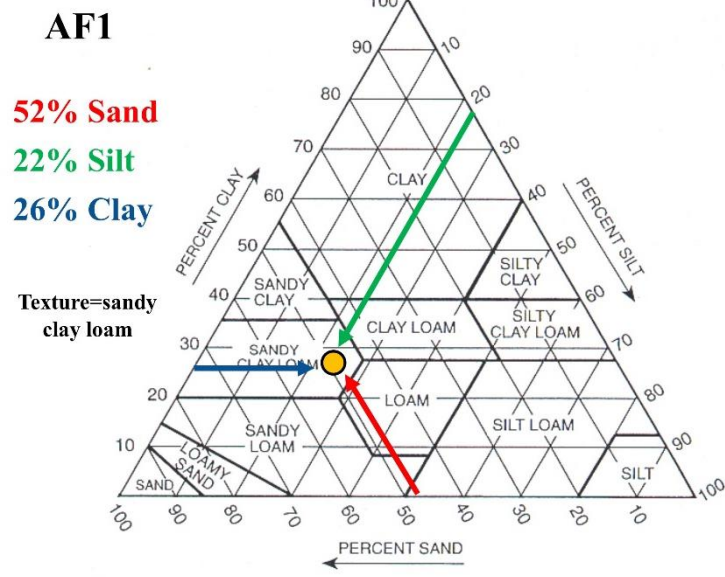
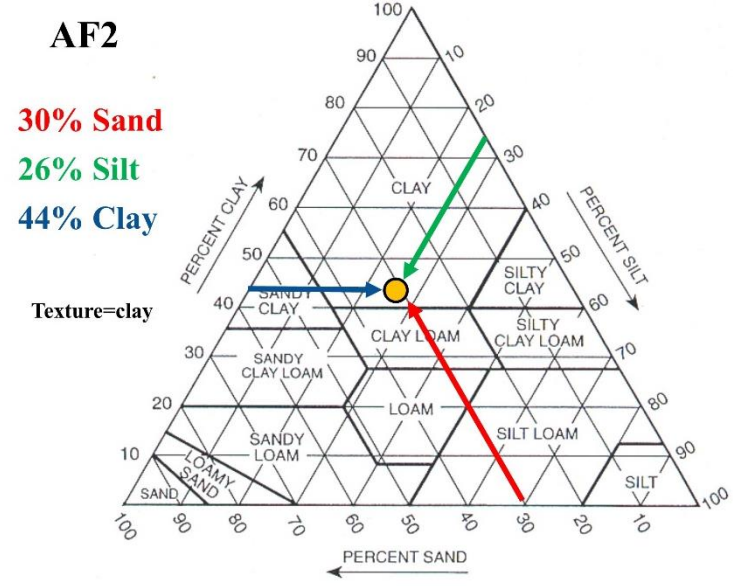


Figure 4. Vertical variation of IWQ index (a-c) in the pilot fields AF1, AF2 and KF1 for selected sampling periods, respectively.



(a)



(b)

Figure 5. Soil texture in the pilot fields of (a) AF1 and (b) AF2 according to universal soil classification.