ΙΝΣΤΙΤΟΥΤΟ ΓΕΩΛΟΓΙΚΩΝ
ΚΑΙ ΜΕΤΑΛΛΕΥΤΙΚΩΝ ΕΡΕΥΝΩΝ (Ι.Γ.Μ.Ε.)

ΒΙΟΕΚΧΥΛΙΣΗ
ΑΠΟΡΡΙΜΜΑΤΩΝ ΔΗΜΟΣΙΟΥ ΜΕΤΑΛΛΕΙΟΥ ΚΙΡΚΗΣ

από

Βασιλική Αγγελάτου, Χημικό Μηχανικό – Δ.Τ.Ε.Μ.
Ευάγγελο Δρόσο, Δρ. Χημικό Μηχανικό - Δ.Τ.Ε.Μ.

Έργο (ΜΕΟΠΥ /Κωδ. ΟΠΣ: **350969) : «ΕΡΕΥΝΑ ΚΑΙ ΑΞΙΟΛΟΓΗΣΗ ΕΠΙΛΕΓΜΕΝΩΝ ΜΗ ΕΝΕΡΓΕΙΑΚΩΝ ΟΡΥΚΤΩΝ ΠΡΩΤΩΝ ΥΛΩΝ ΤΗΣ ΧΩΡΑΣ, ΜΕ ΣΤΟΧΟ ΤΗ ΒΙΩΣΙΜΗ ΛΕΙΤΟΥΡΓΙΑ ΤΗΣ ΕΞΟΡΥΚΤΙΚΗΣ ΒΙΟΜΗΧΑΝΙΑΣ»**

Υποέργο 6:

« ΕΦΑΡΜΟΓΗ ΣΥΓΧΡΟΝΩΝ ΤΕΧΝΟΛΟΓΙΩΝ – ΜΕΘΟΔΟΛΟΓΙΩΝ ΓΙΑ ΤΗΝ ΕΡΕΥΝΑ ΚΑΙ ΑΞΙΟΛΟΓΗΣΗ ΕΠΙΛΕΓΜΕΝΩΝ ΔΕΥΤΕΡΟΓΕΝΩΝ ΠΗΓΩΝ ΟΡΥΚΤΩΝ ΠΡΩΤΩΝ ΥΛΩΝ»

ΕΘΝΙΚΟ ΣΤΡΑΤΗΓΙΚΟ ΠΛΑΙΣΙΟ ΑΝΑΦΟΡΑΣ Ε.Σ.Π.Α. 2007-2013

ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ ΑΝΤΑΓΩΝΙΣΤΙΚΟΤΗΤΑ & ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ

ΕΣΠΑ 2007-2013

Αθήνα, Σεπτέμβριος 2016

ΙΝΣΤΙΤΟΥΤΟ ΓΕΩΛΟΓΙΚΩΝ
ΚΑΙ ΜΕΤΑΛΛΕΥΤΙΚΩΝ ΕΡΕΥΝΩΝ (Ι.Γ.Μ.Ε.)

Ν.Π.Ι.Δ. ΕΠΟΠΤΕΥΟΜΕΝΟ ΑΠΟ ΤΟ ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΚΑΙ ΕΝΕΡΓΕΙΑΣ
(Ν. 272/76 και ΚΥΑ 12935-ΦΕΚ 1247/Β/24-6-2015)
Σπ. Λούη 1, Ολυμπιακό Χωριό, Αχαρναί Τ.Κ. 13677, Τηλ. 213-1337000-3, Fax 213-1337015

Ε.Π.Α.Ε.

Επιχειρησιακό Πρόγραμμα
«Ανταγωνιστικότητα &
Επιχειρηματικότητα»

ΕΥΡΩΠΑΪΚΗ ΕΠΙΤΡΟΠΗ

ΕΥΡΩΠΑΪΚΟ ΤΑΜΕΙΟ
ΠΕΡΙΦΕΡΕΙΑΚΗΣ ΑΝΑΠΤΥΞΗΣ

«ΒΙΟΕΚΧΥΛΙΣΗ ΑΠΟΡΡΙΜΜΑΤΩΝ ΔΗΜΟΣΙΟΥ ΜΕΤΑΛΛΕΙΟΥ ΚΙΡΚΗΣ»

Από

Βασιλική Αγγελάτου, Χημικό Μηχανικό – Δ.Τ.Ε.Μ.

Ευάγγελο Δρόσο, Δρ. Χημικό Μηχανικό - Δ.Τ.Ε.Μ.

Η παρούσα μελέτη εκπονήθηκε στο πλαίσιο της Πράξης 350969 του ΕΣΠΑ 2007-2013 με τίτλο "ΕΡΕΥΝΑ ΚΑΙ ΑΞΙΟΛΟΓΗΣΗ ΕΠΙΛΕΓΜΕΝΩΝ ΜΗ ΕΝΕΡΓΕΙΑΚΩΝ ΟΡΥΚΤΩΝ ΠΡΩΤΩΝ ΥΛΩΝ ΤΗΣ ΧΩΡΑΣ, ΜΕ ΣΤΟΧΟ ΤΗ ΒΙΩΣΙΜΗ ΛΕΙΤΟΥΡΓΙΑ ΤΗΣ ΕΞΟΡΥΚΤΙΚΗΣ ΒΙΟΜΗΧΑΝΙΑΣ (ΜΕΟΠΥ)" και ειδικότερα στο πλαίσιο του Υποέργου 6 αυτής με τίτλο «ΕΦΑΡΜΟΓΗ ΣΥΓΧΡΟΝΩΝ ΤΕΧΝΟΛΟΓΙΩΝ – ΜΕΘΟΔΟΛΟΓΙΩΝ ΓΙΑ ΤΗΝ ΕΡΕΥΝΑ ΚΑΙ ΑΞΙΟΛΟΓΗΣΗ ΕΠΙΛΕΓΜΕΝΩΝ ΔΕΥΤΕΡΟΓΕΝΩΝ ΠΗΓΩΝ ΟΡΥΚΤΩΝ ΠΡΩΤΩΝ ΥΛΩΝ». Η Πράξη «ΜΕΟΠΥ» συγχρηματοδοτήθηκε από το Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης (Ε.Τ.Π.Α.), το οποίο συμβάλλει στην άμβλυνση των ανισοτήτων μεταξύ των περιφερειών της Ευρωπαϊκής Ένωσης και από το Ελληνικό Δημόσιο.

Αθήνα, Σεπτέμβριος 2016

ΟΜΑΔΑ ΕΡΓΑΣΙΑΣ

Για την υλοποίηση των εργασιών που περιγράφονται στην παρούσα μελέτη συνεργάστηκαν μέλη του επιστημονικού και τεχνικού προσωπικού του Ινστιτούτου Γεωλογικών και Μεταλλευτικών Ερευνών, ως ακολούθως:

Όνομα	**Ειδικότητα / Αρμοδιότητες / Εργασίες**
Επιστημονικό Προσωπικό	
Αγγελάτου Βασιλική	Χημικός Μηχανικός, Δ.Τ.Ε.Μ./Υπεύθυνη Υποέργου, Υπεύθυνη Θεματικής Ενότητας, ΔΤΕΜ
Δρόσος Ευάγγελος	Δρ.Χημικός Μηχανικός, ΔΤΕΜ
Μιχαήλ Κωνσταντίνος	Δρ.Γεωλόγος, Π.Μ.Κ.Μ-Θ
Ξηρόκωστας Νικόλαος	Δρ Χημικός Μηχανικός, ΔΑΝΕ
Οικονόμου Γιώργος	Δρ Γεωλόγος, Δ.Ο.Π.
Τεχνικό Προσωπικό	
Βασιλάκης Δημήτρης	Δειγματοληψία/ Εκτέλεση δοκιμών
Τσιτσής Αναστάσιος	Δειγματοληψία/ Προετοιμασία δειγμάτων/ Εκτέλεση δοκιμών
Πατσής Παντελής	Παρασκευάσματα μικροσκοπίου
Τσέλος Θανάσης	Δειγματοληψία
Εξωτερικοί Συνεργάτες	
Μπαντούνα Ιωάννα (Συμβασιούχος, Αρ. Σύμβασης 2677/2014)	Γεωλόγος / Πετρογραφική εξέταση

ΠΑΡΑΡΤΗΜΑ Α

ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ

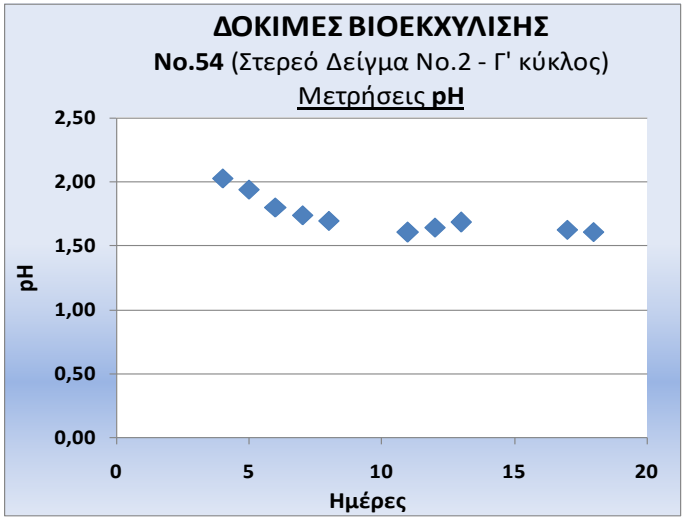
ΓΡΑΦΗΜΑΤΑ
ΜΕΤΡΗΣΕΩΝ ΚΑΙ ΑΝΑΛΥΣΕΩΝ

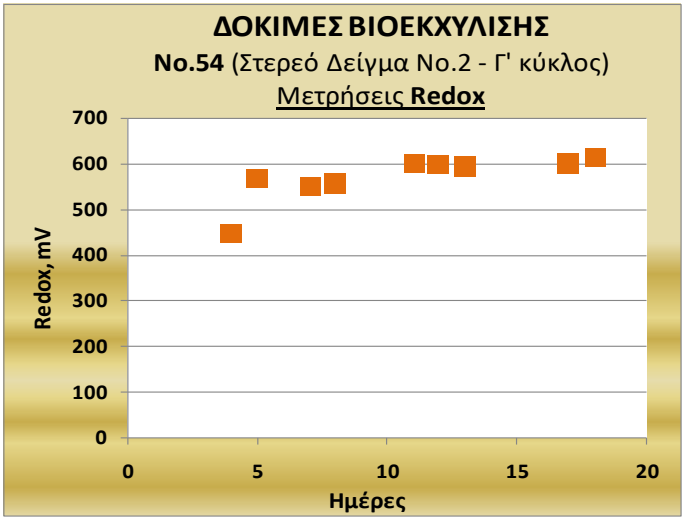
ΔΟΚΙΜΕΣ 2014

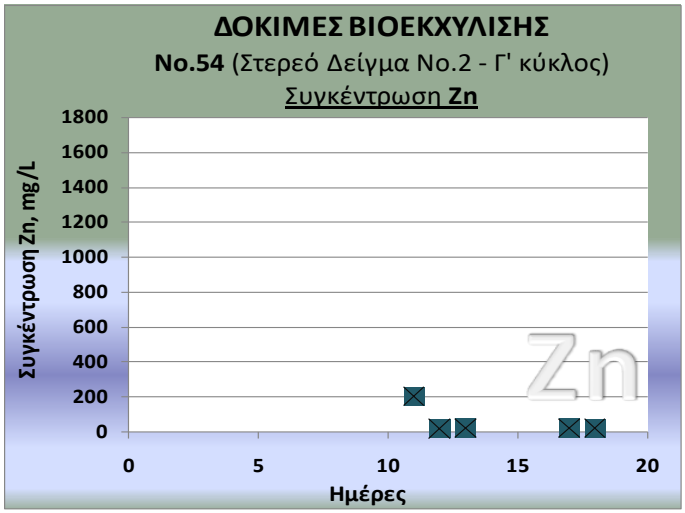
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

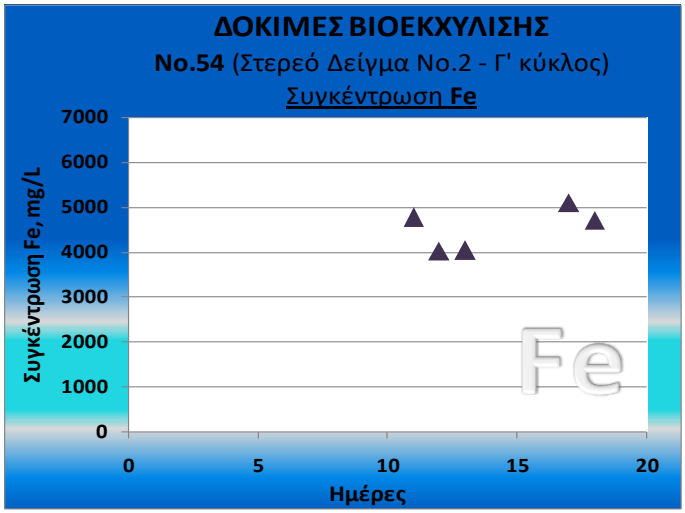
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

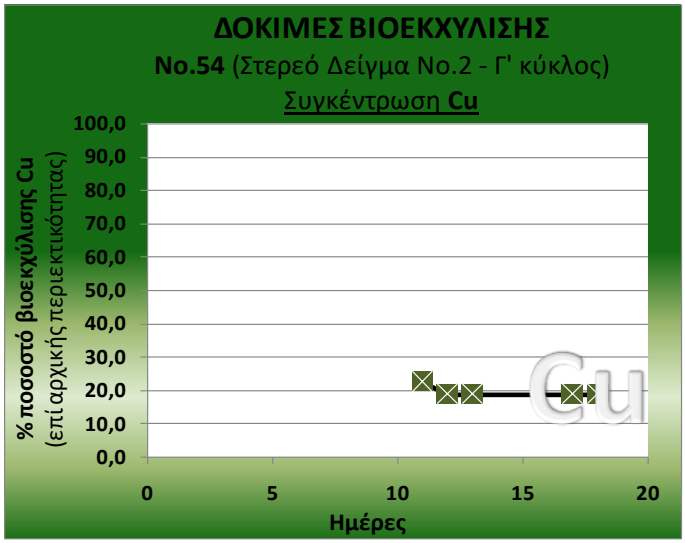
Α' Καλλιέργεια – Γ' Μεταφορά

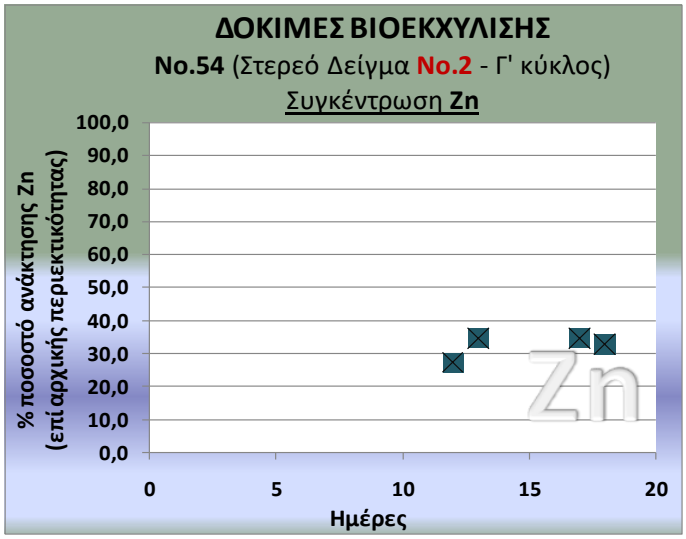








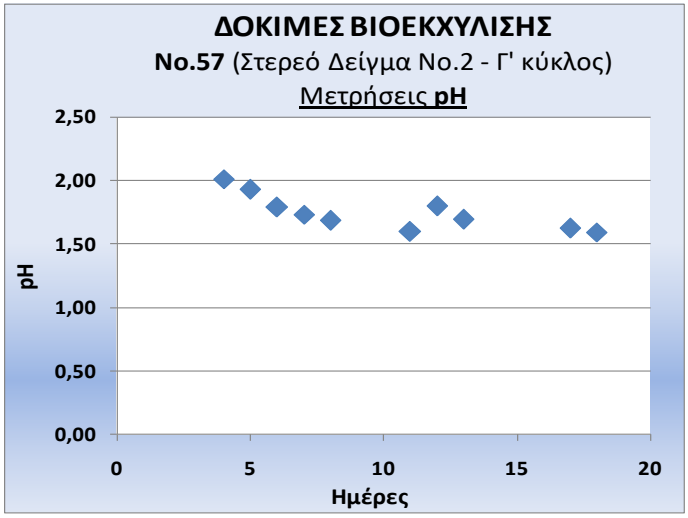


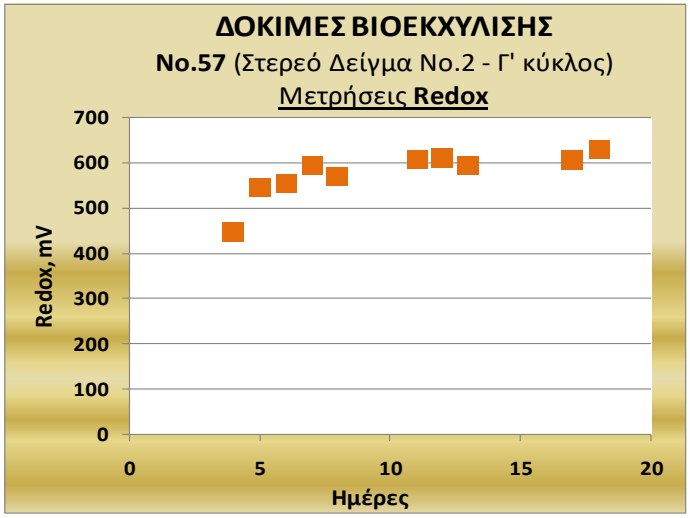


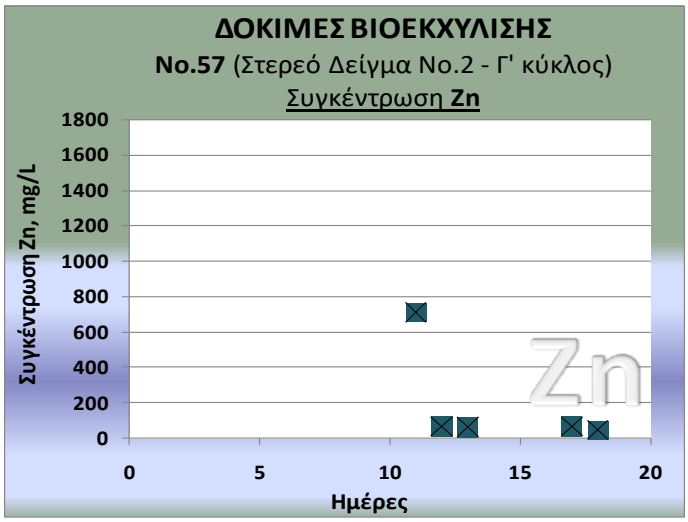
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

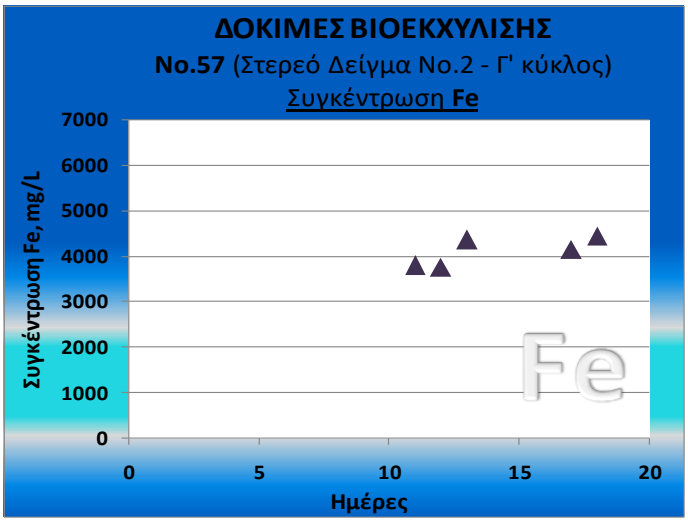
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

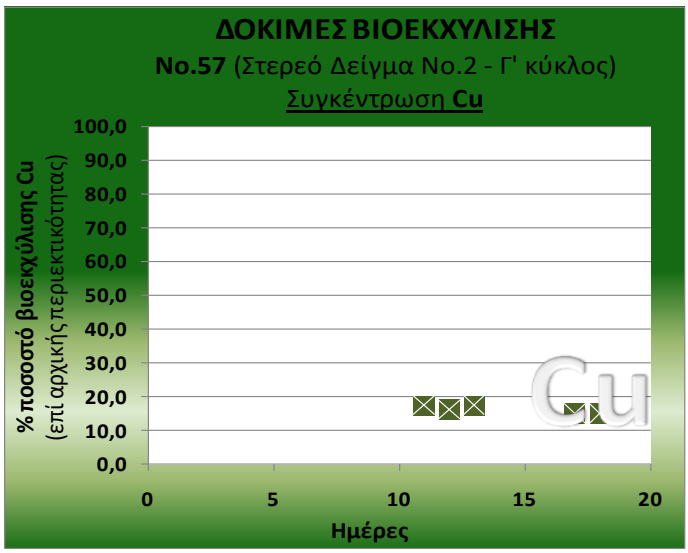
Β' Καλλιέργεια – Γ' Μεταφορά

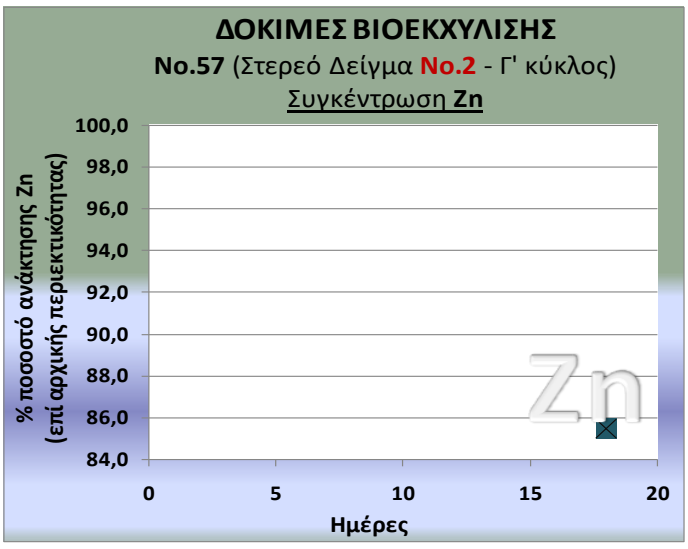








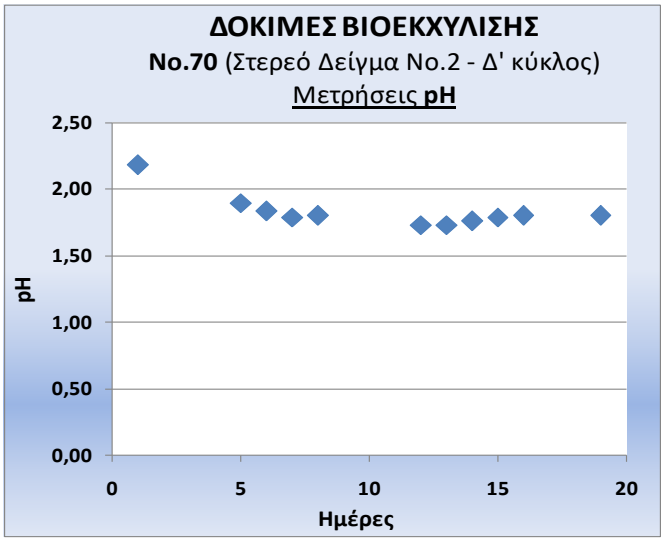


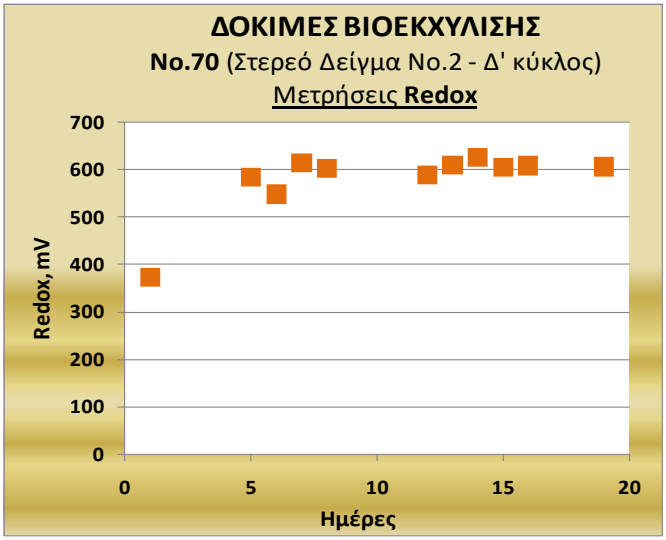


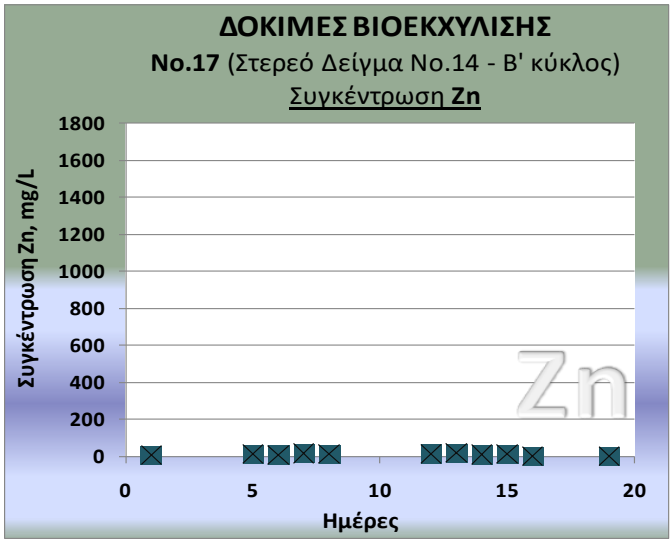
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

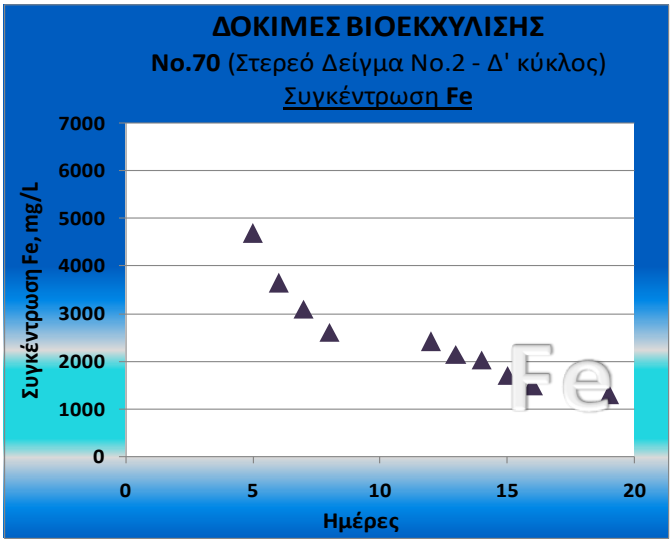
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

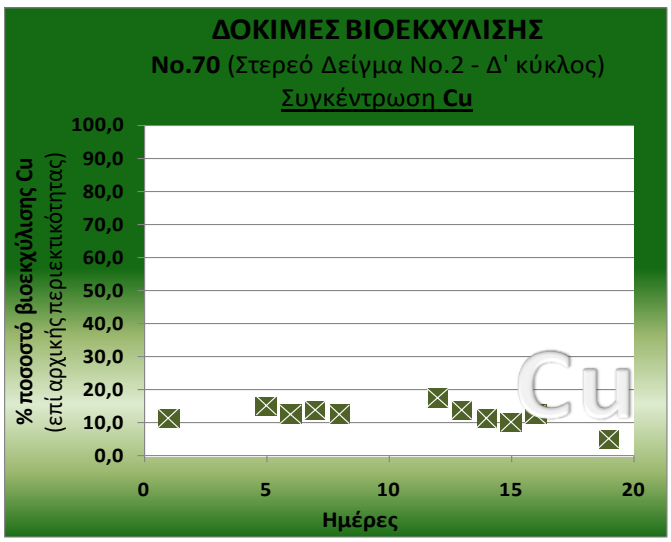
Α' Καλλιέργεια – Δ' Μεταφορά







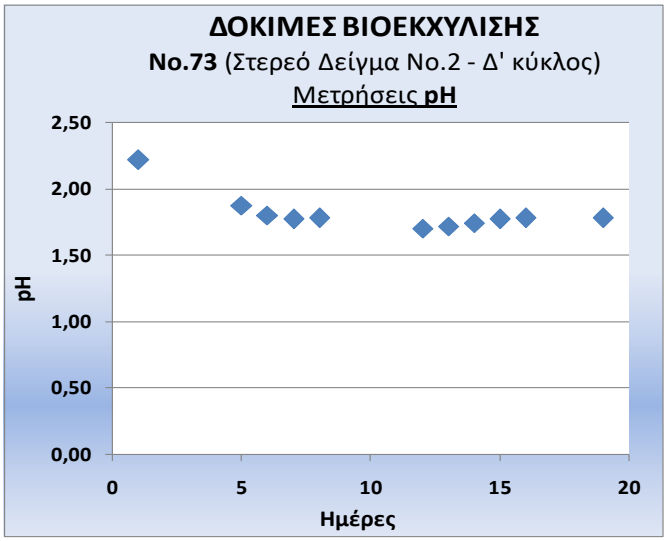


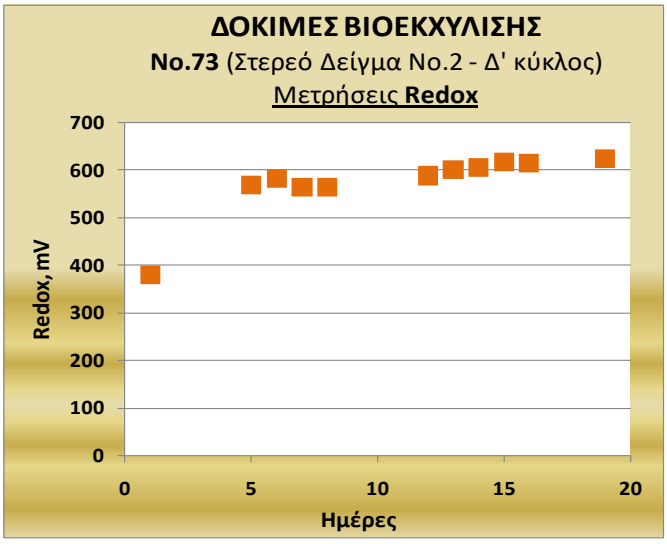


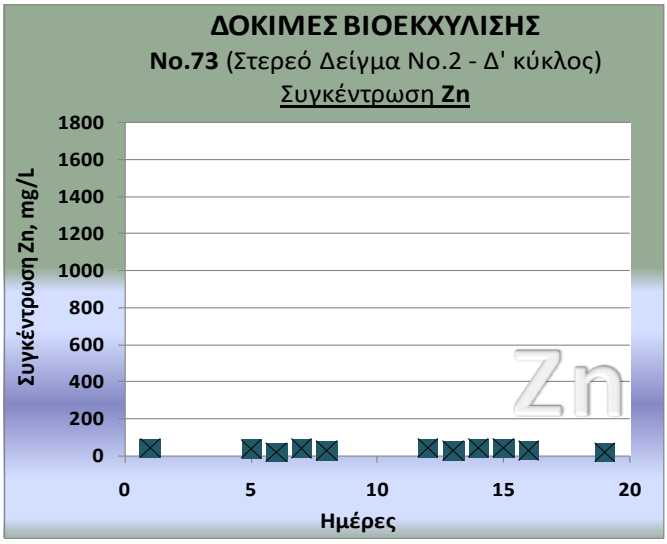
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

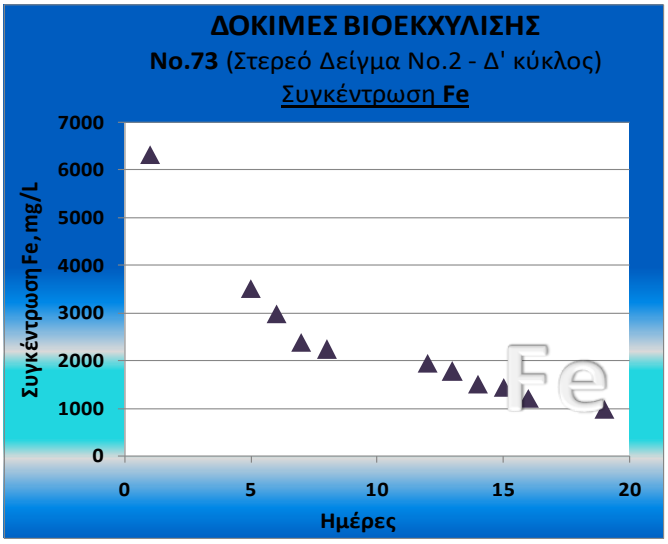
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

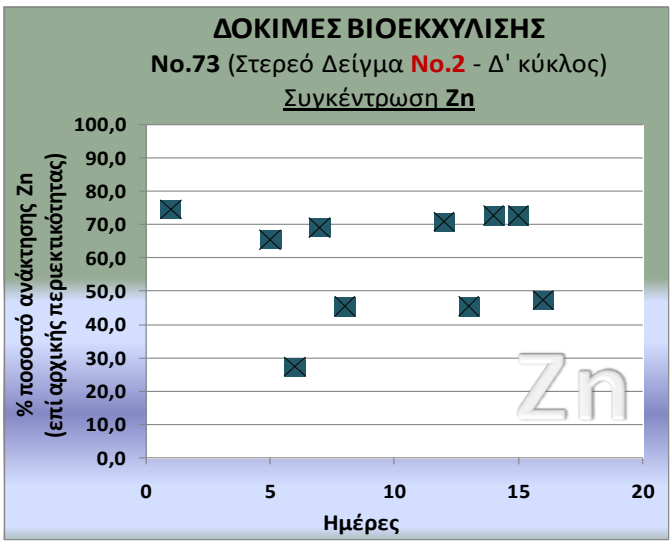
Β' Καλλιέργεια – Δ' Μεταφορά







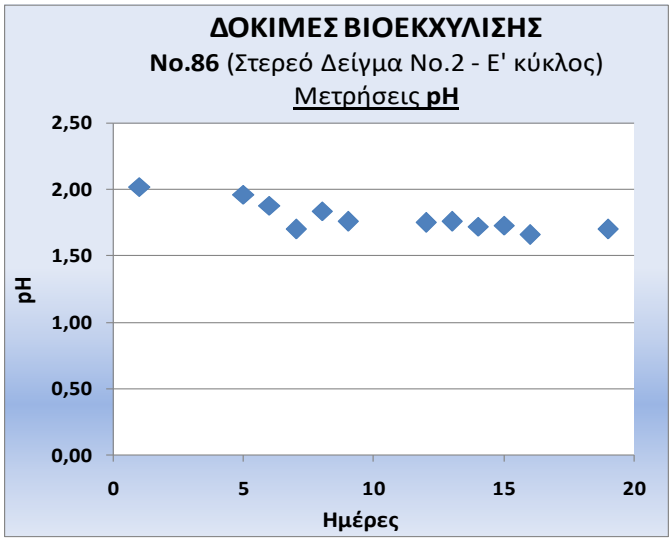


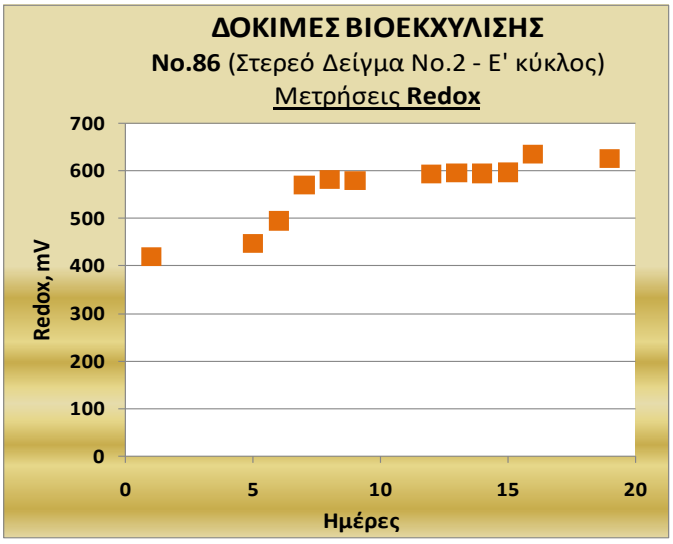


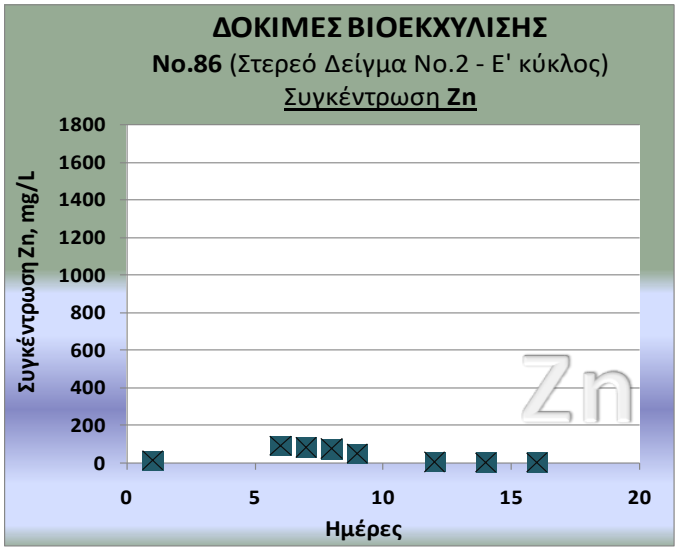
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

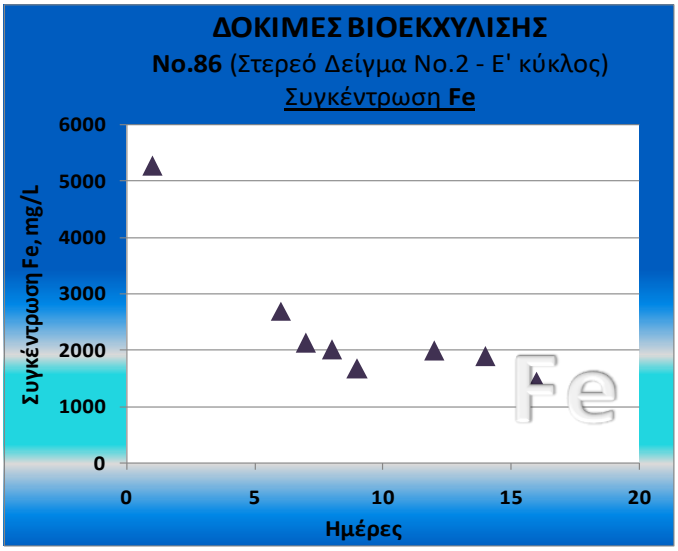
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

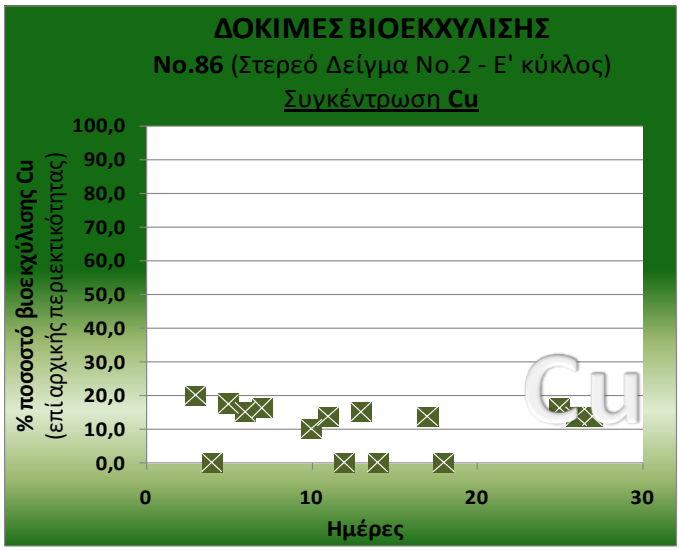
Α' Καλλιέργεια – Ε' Μεταφορά

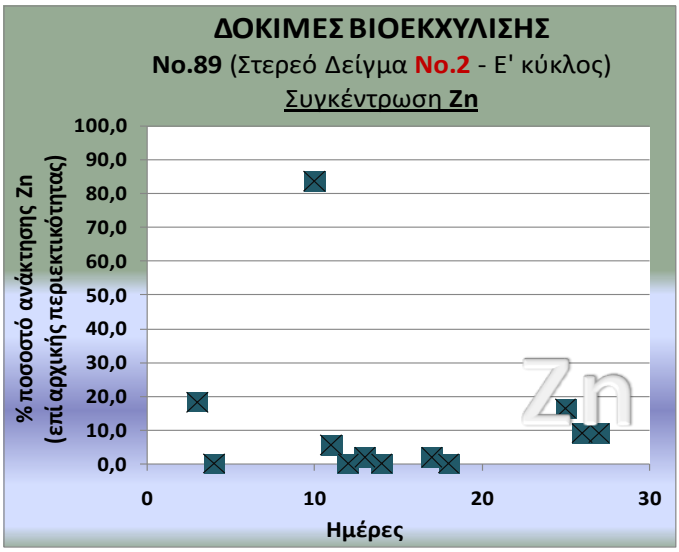








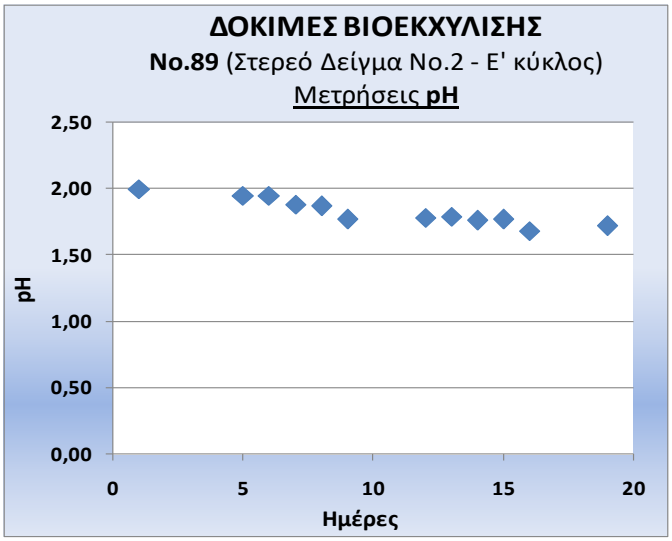


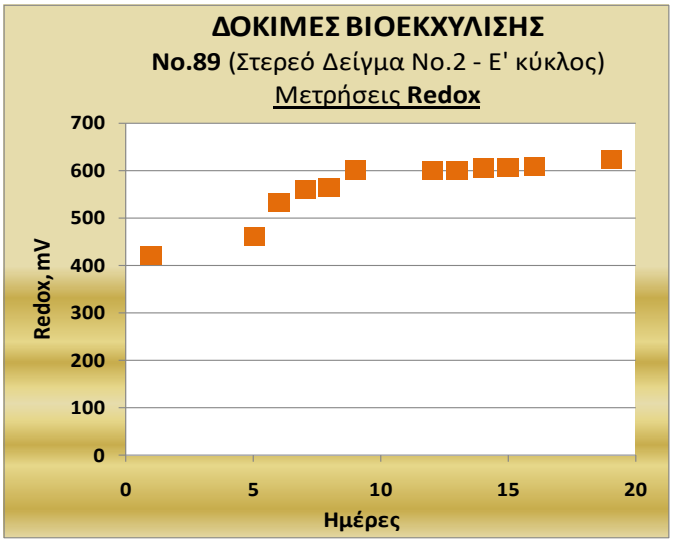


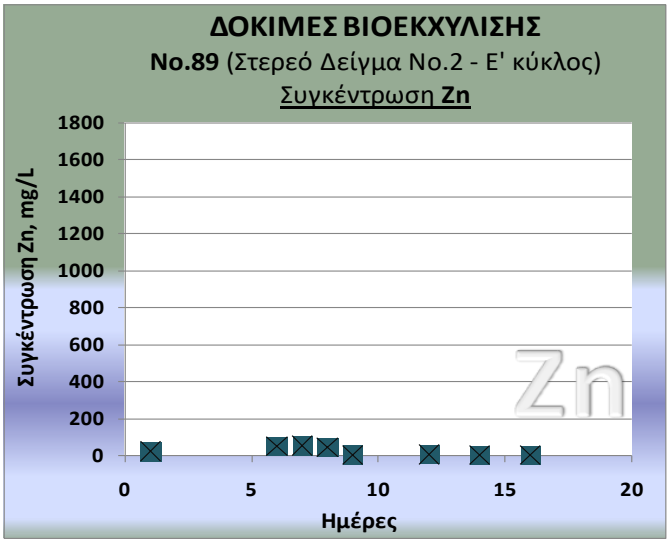
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

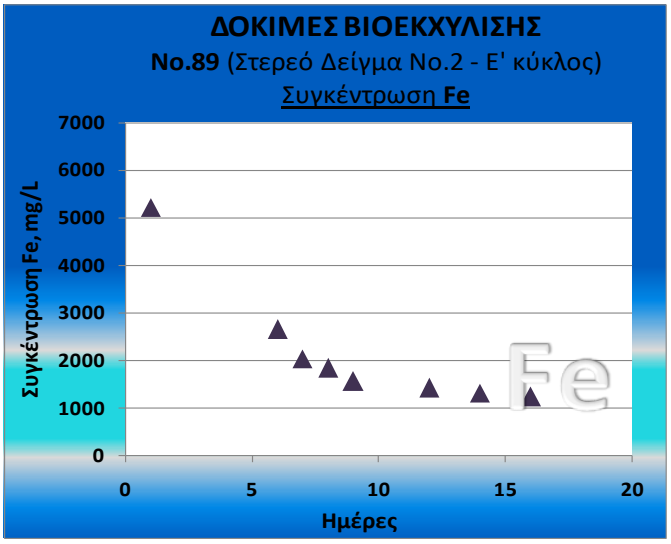
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

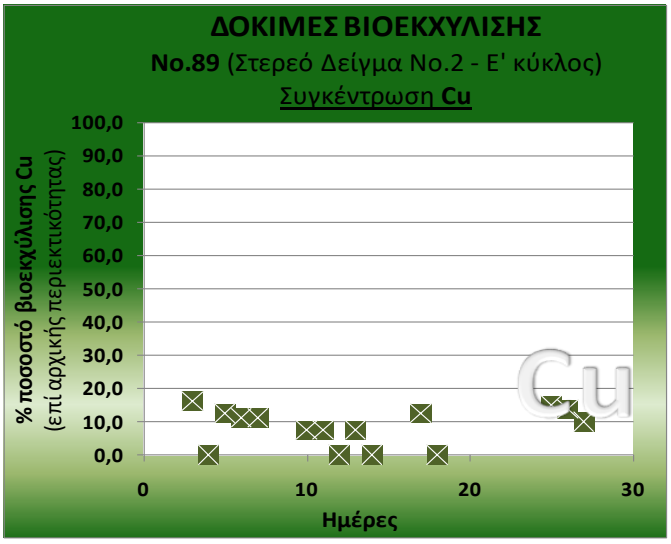
Β' Καλλιέργεια – Ε' Μεταφορά

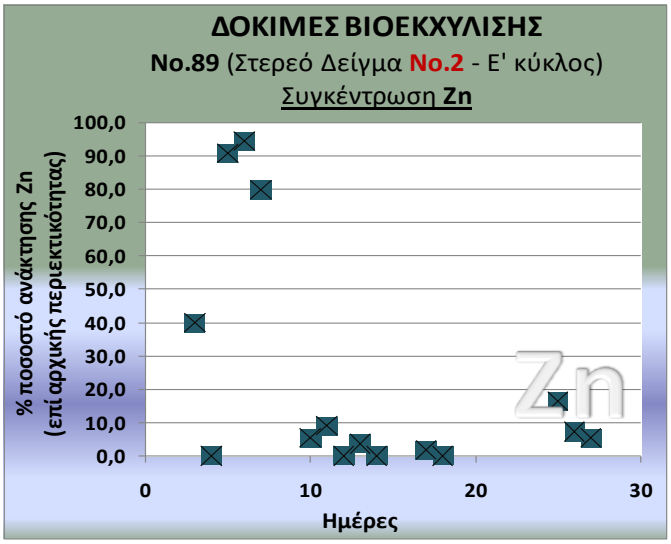








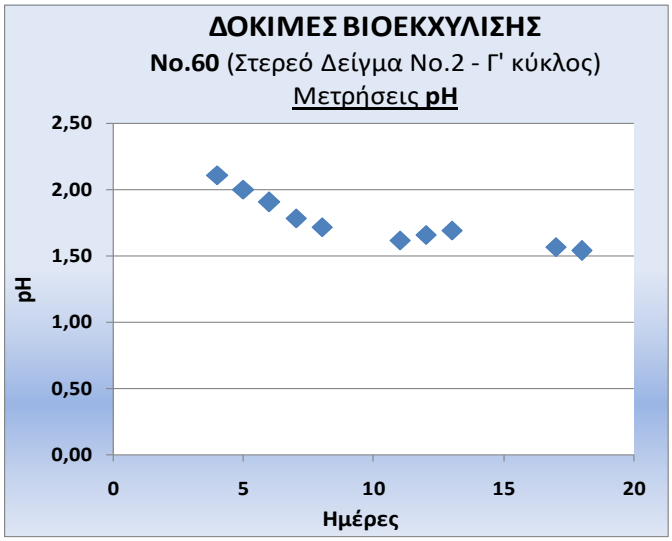


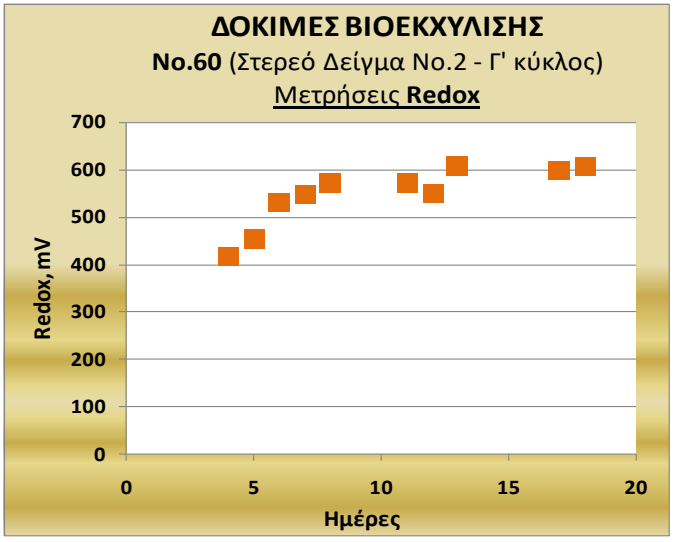


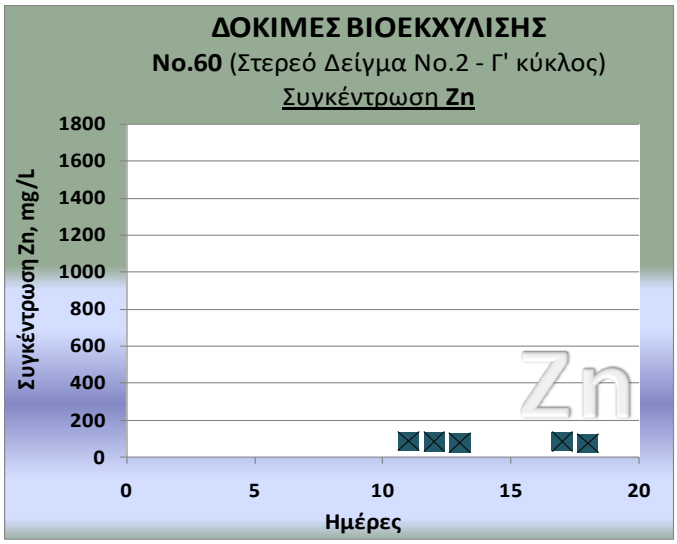
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

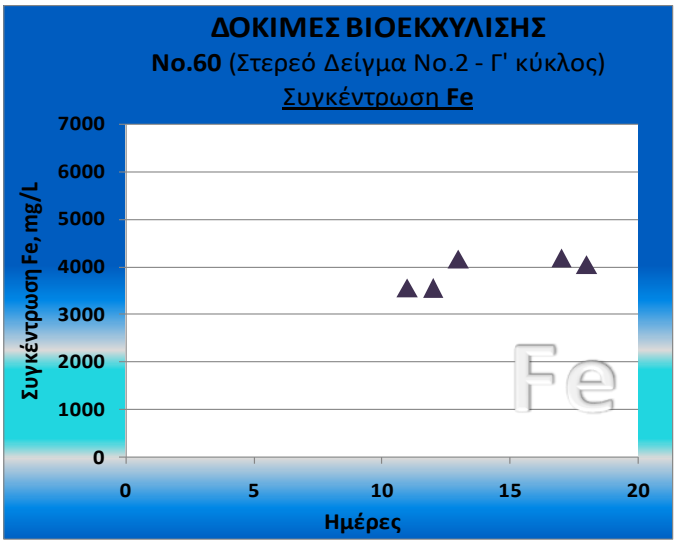
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

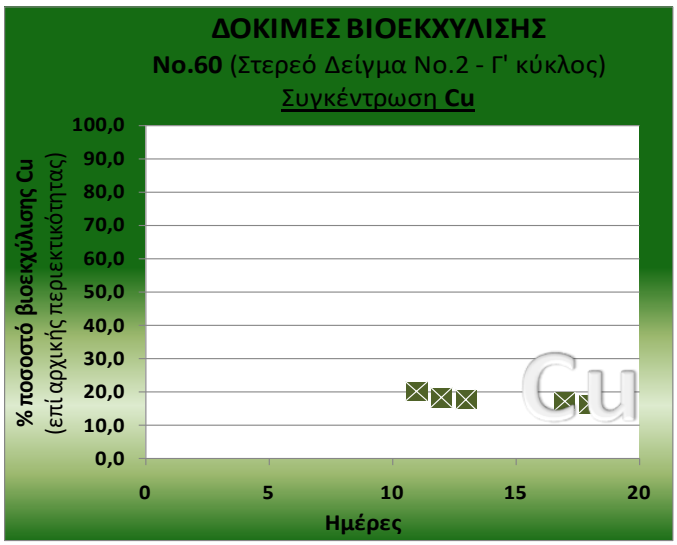
Α' Καλλιέργεια – Γ' Μεταφορά

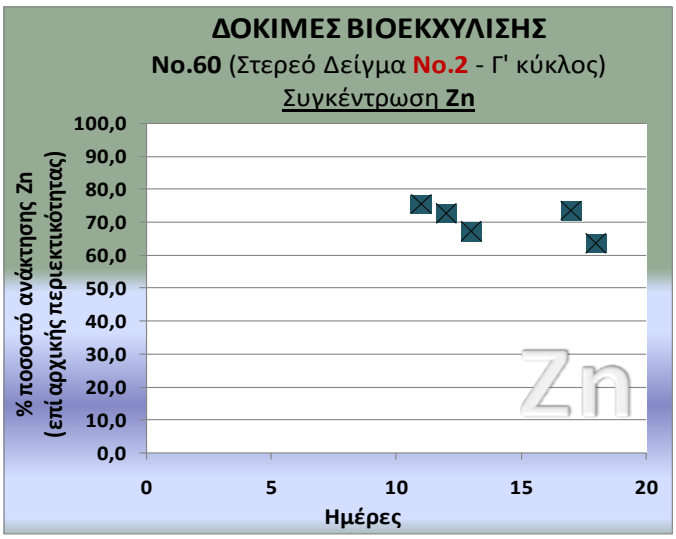








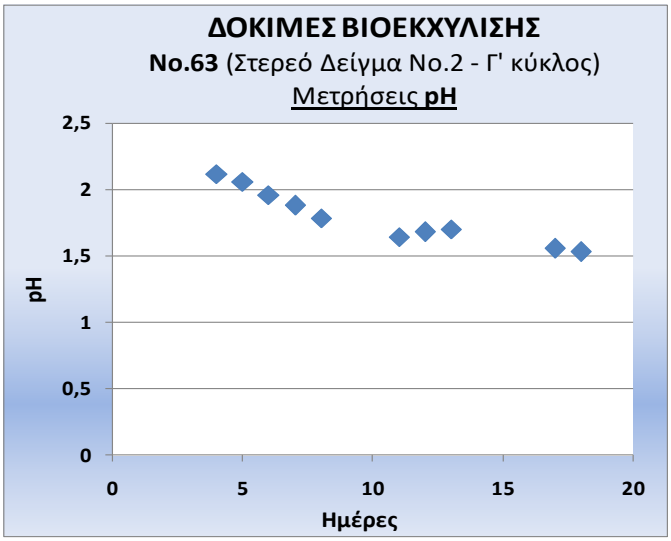


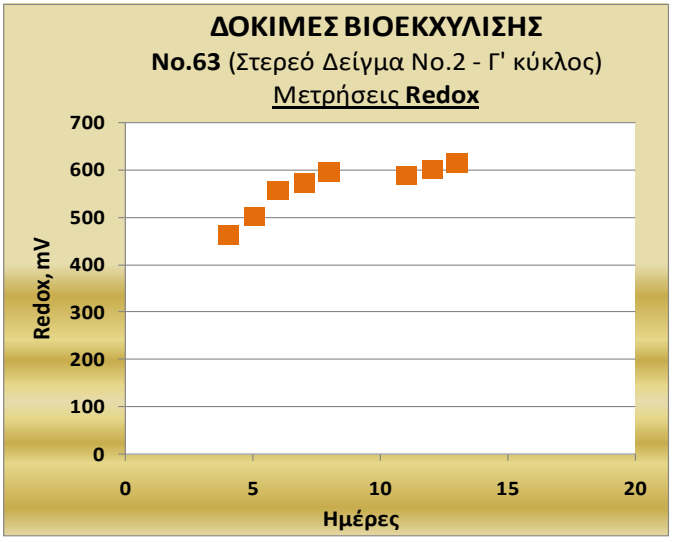


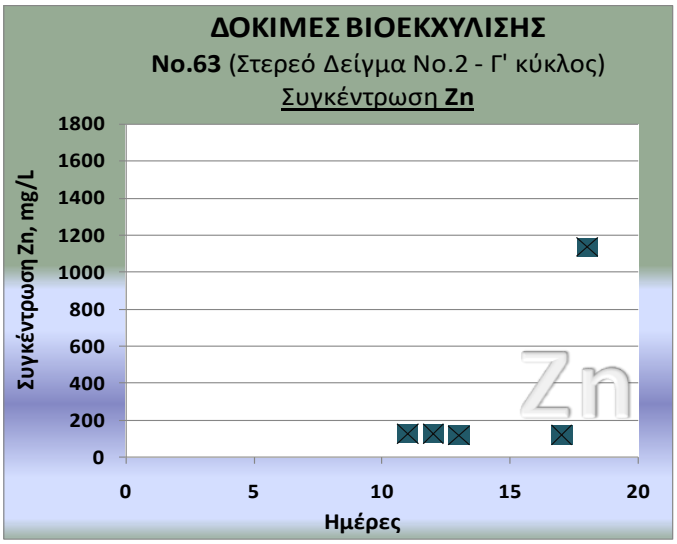
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

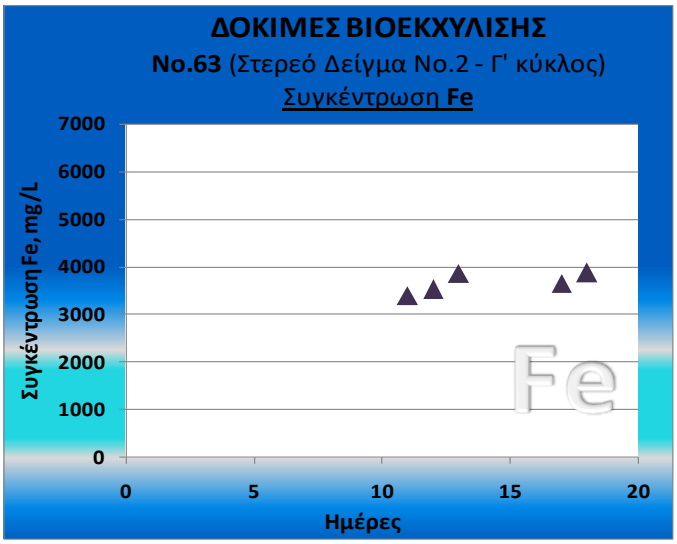
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

Β' Καλλιέργεια – Γ' Μεταφορά





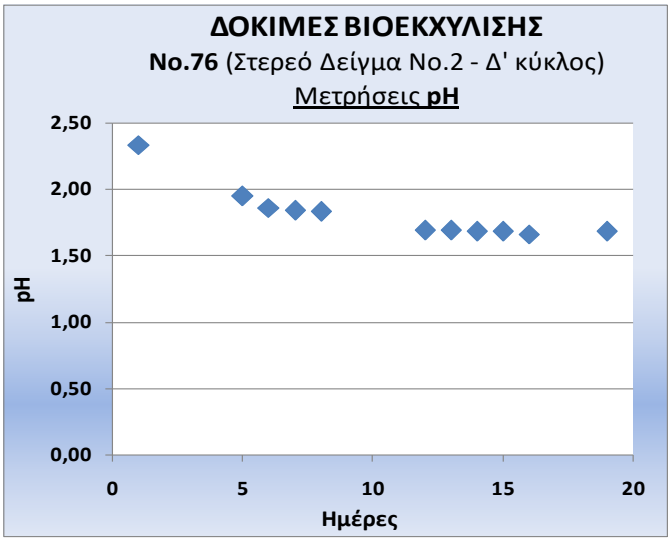


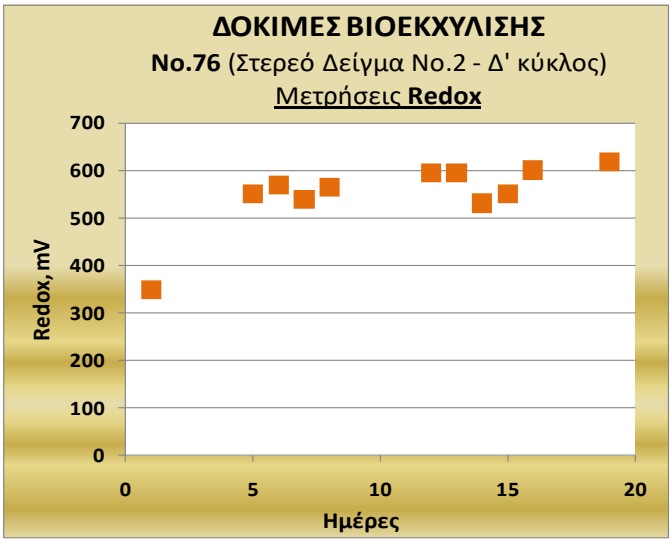


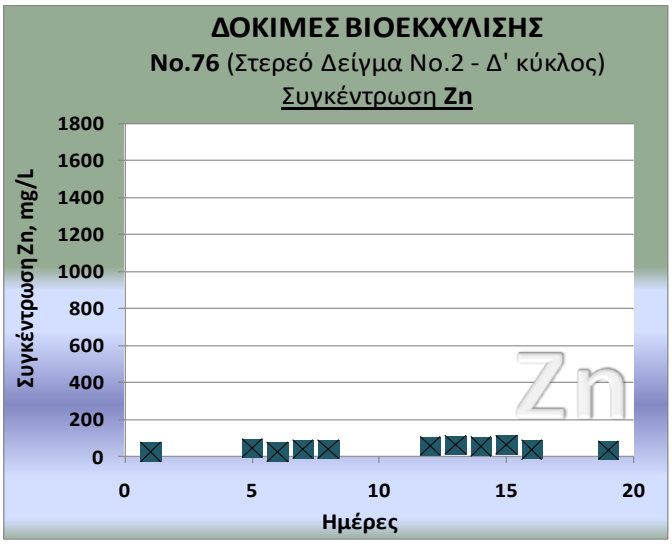
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

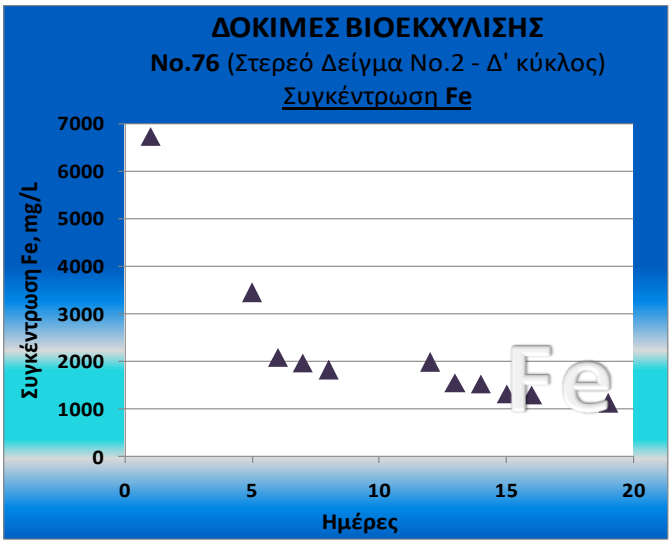
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

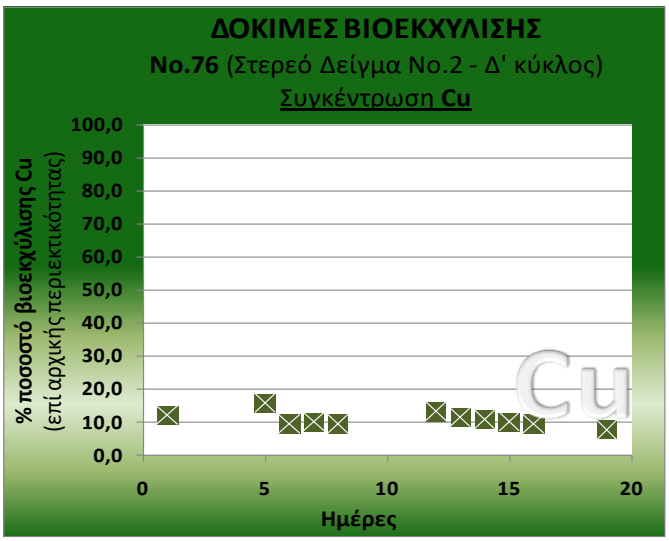
Α' Καλλιέργεια – Δ' Μεταφορά

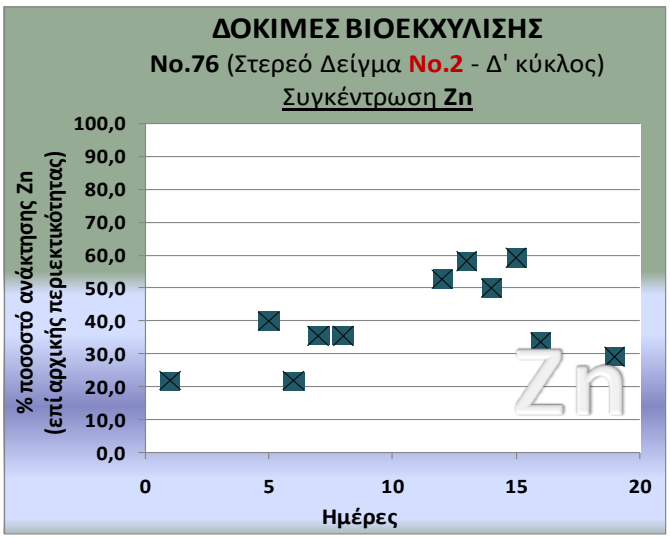








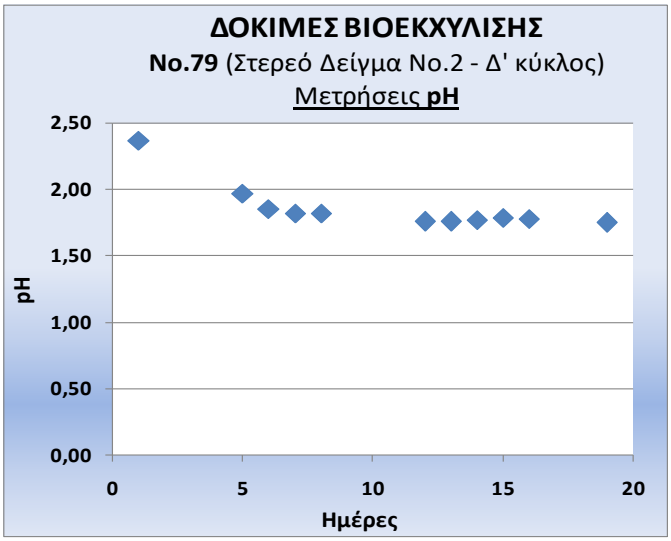


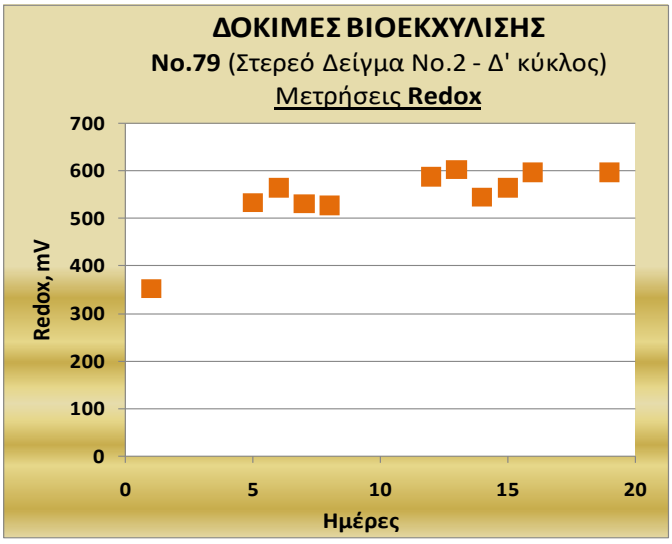


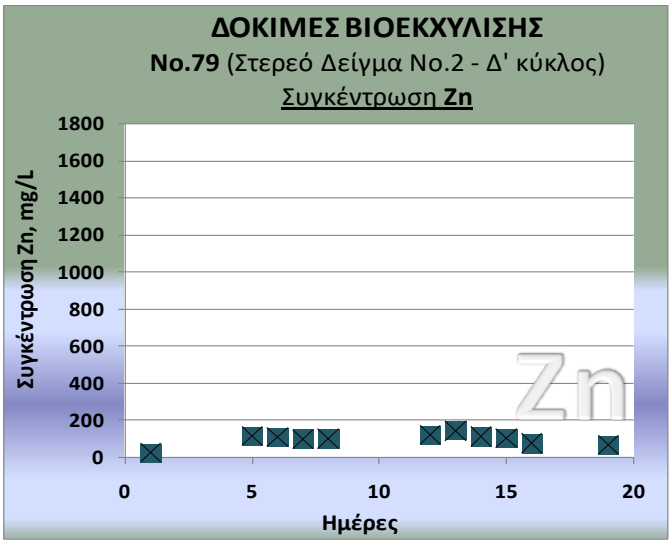
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

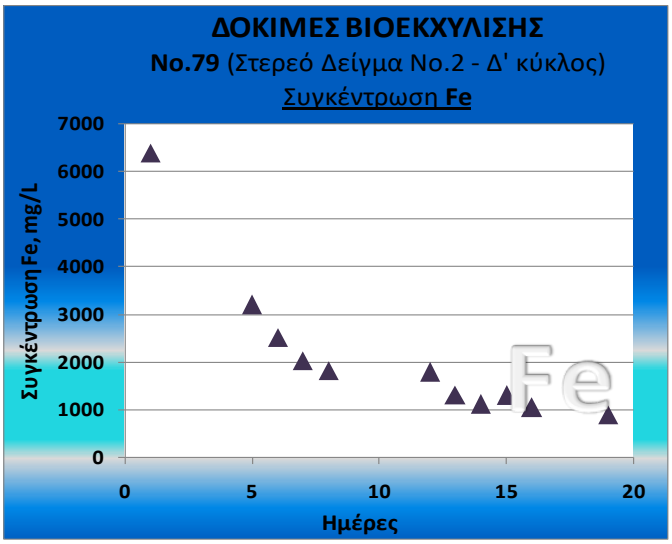
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

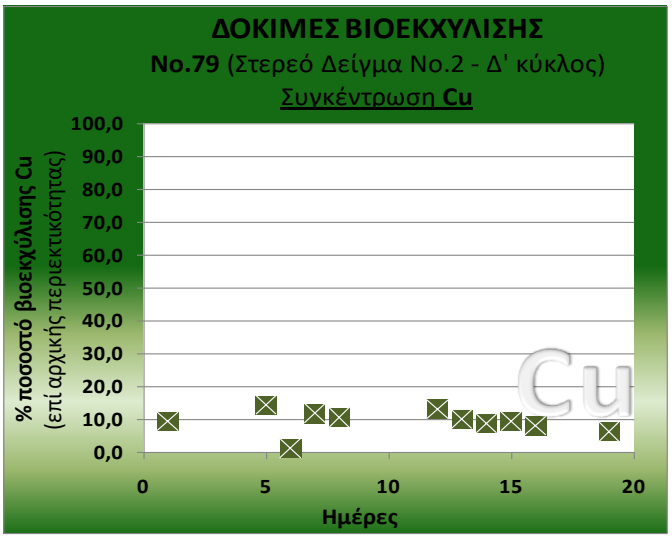
Β' Καλλιέργεια – Δ' Μεταφορά

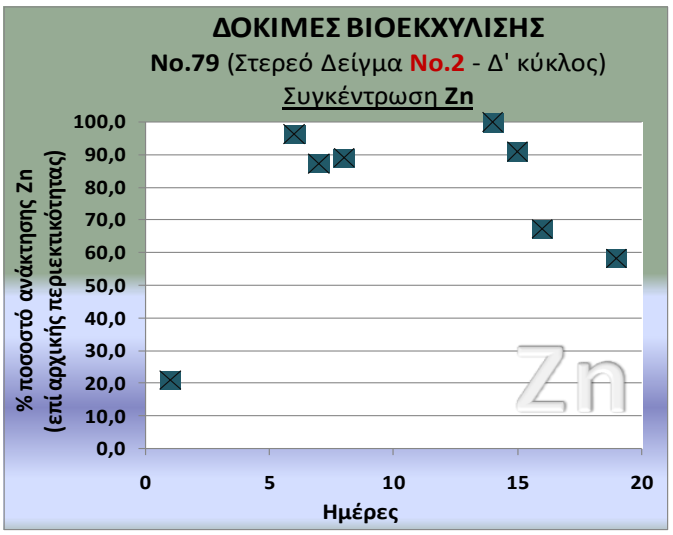








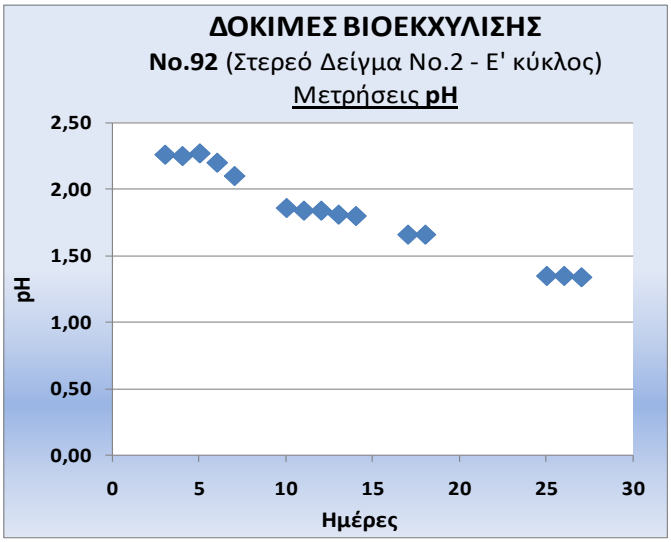


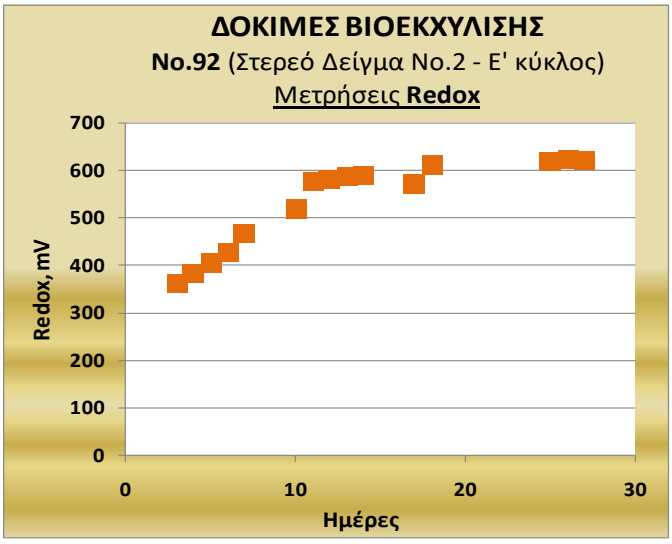


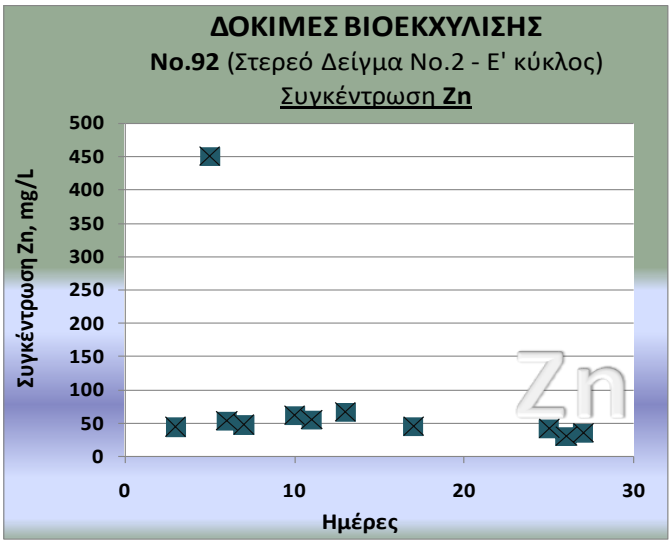
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

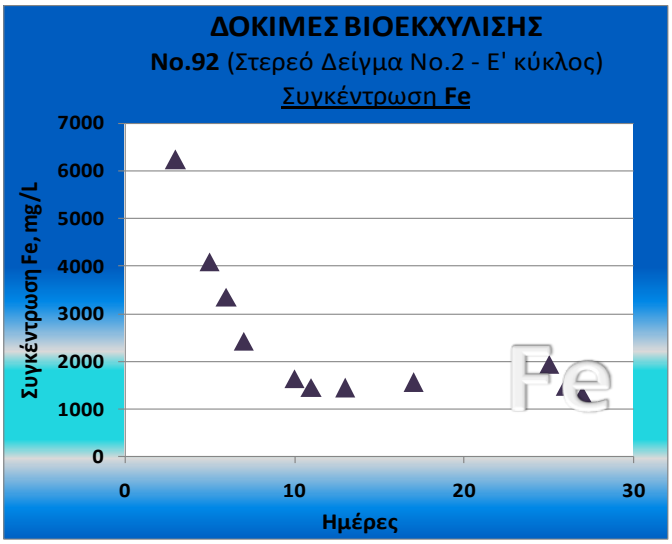
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

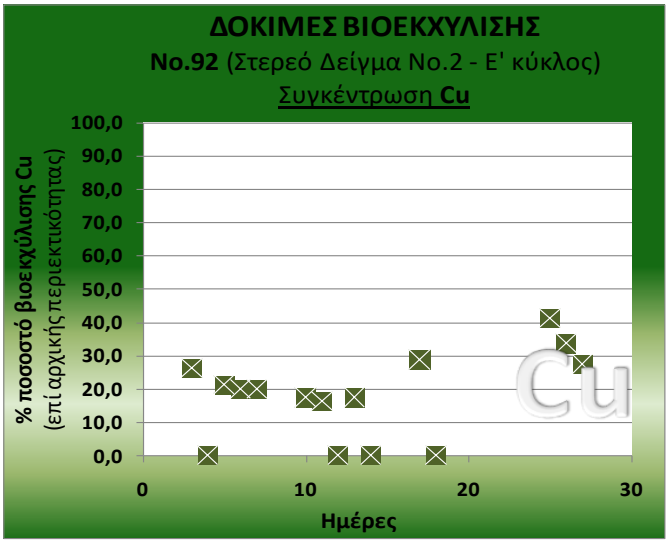
Α' Καλλιέργεια – Ε' Μεταφορά

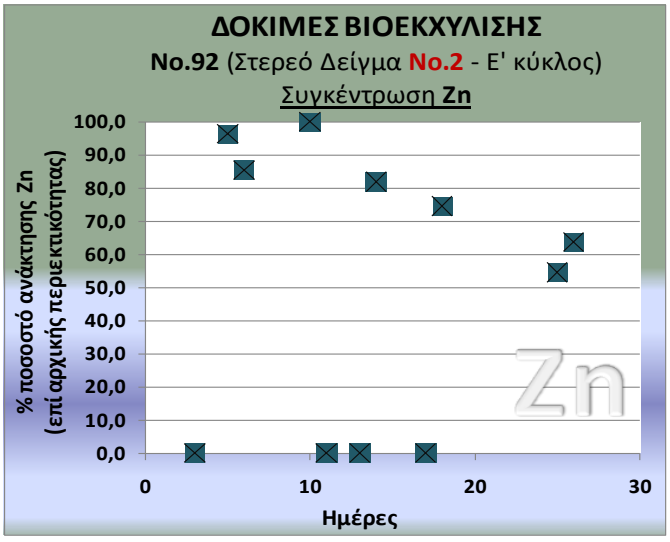








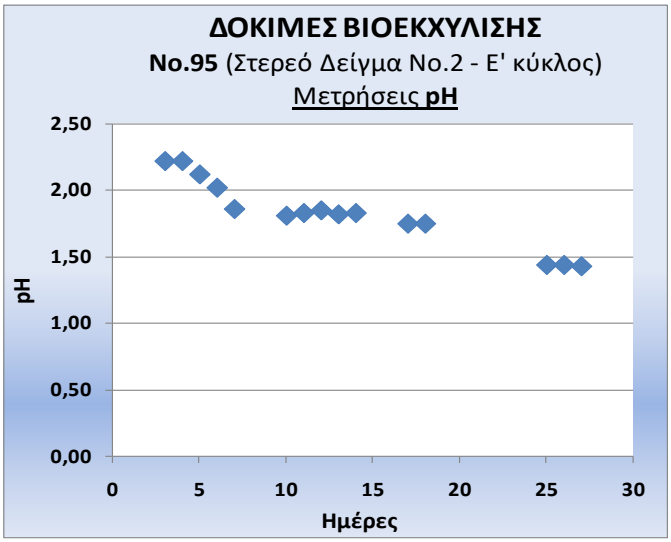


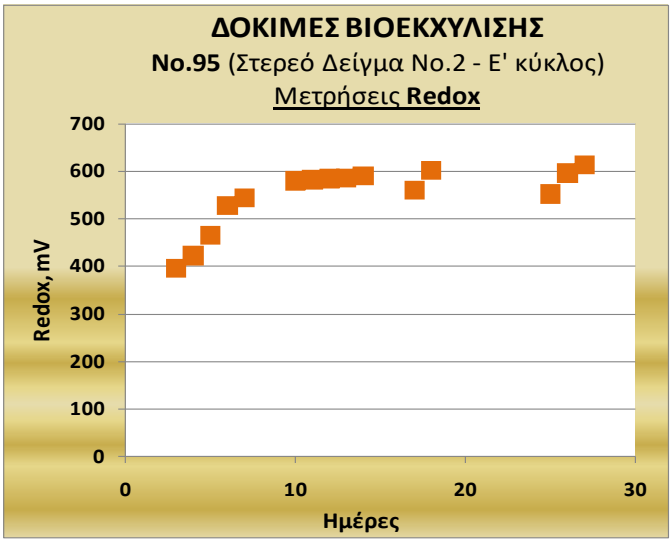


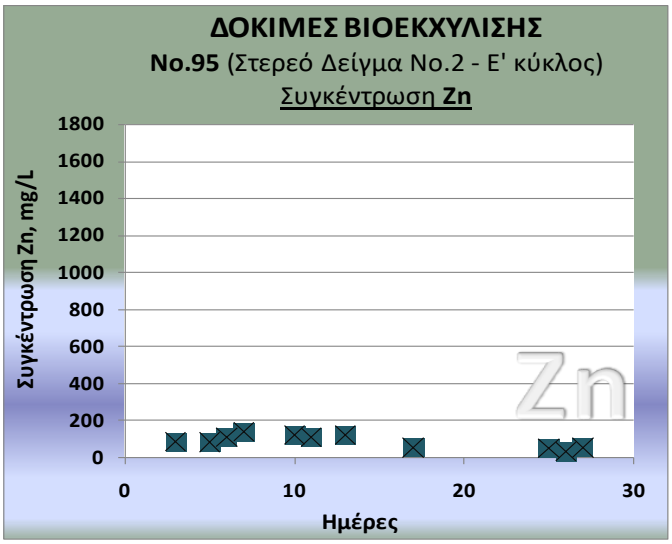
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

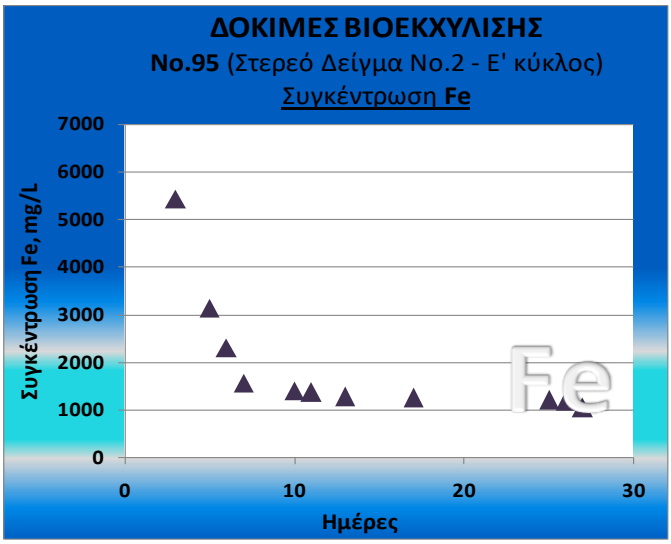
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

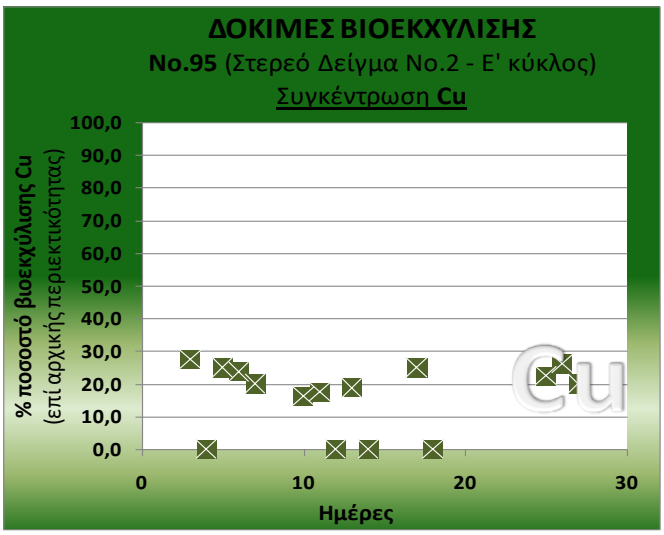
Β' Καλλιέργεια – Ε' Μεταφορά

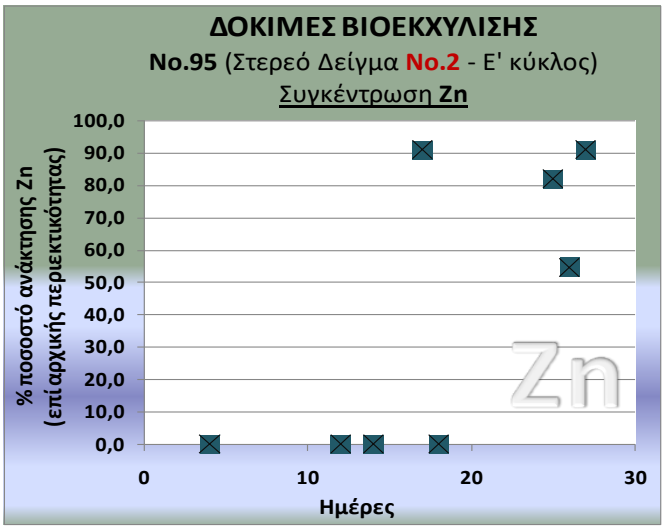








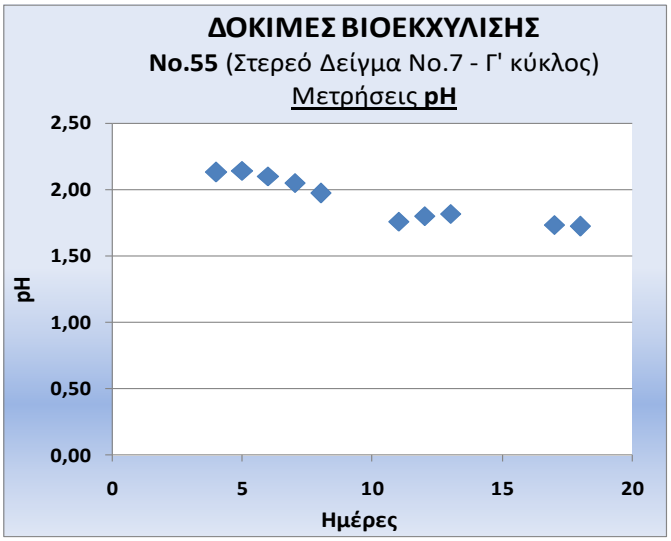


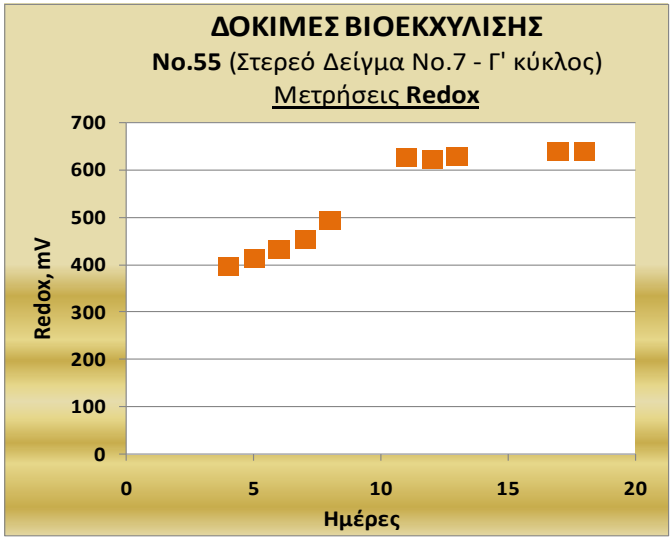


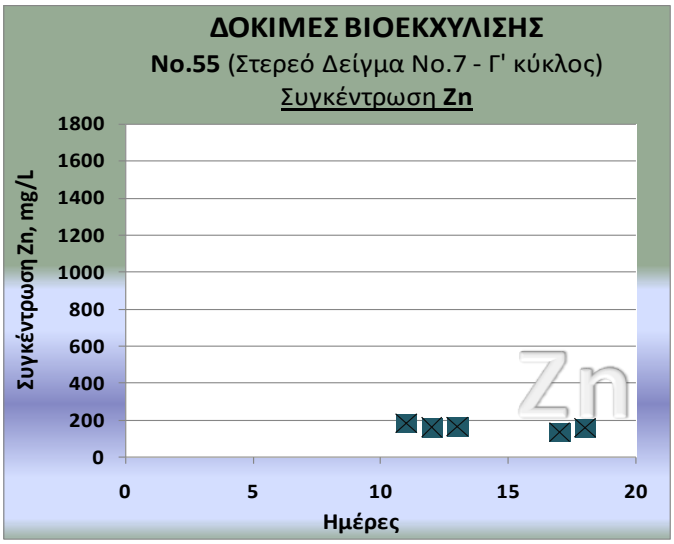
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

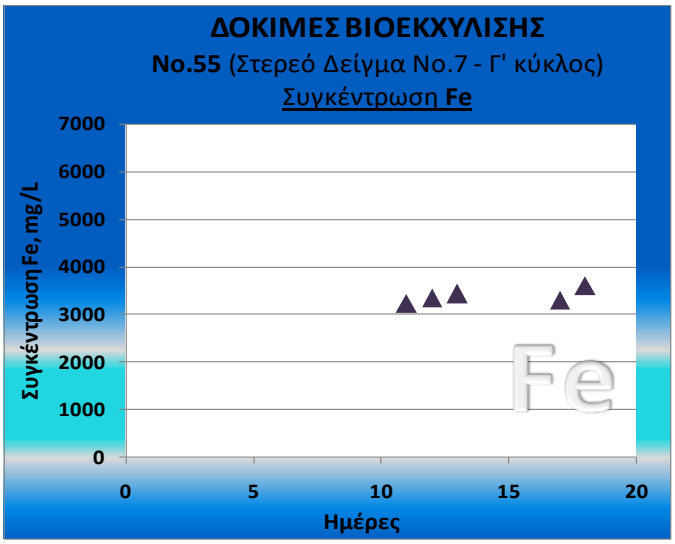
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

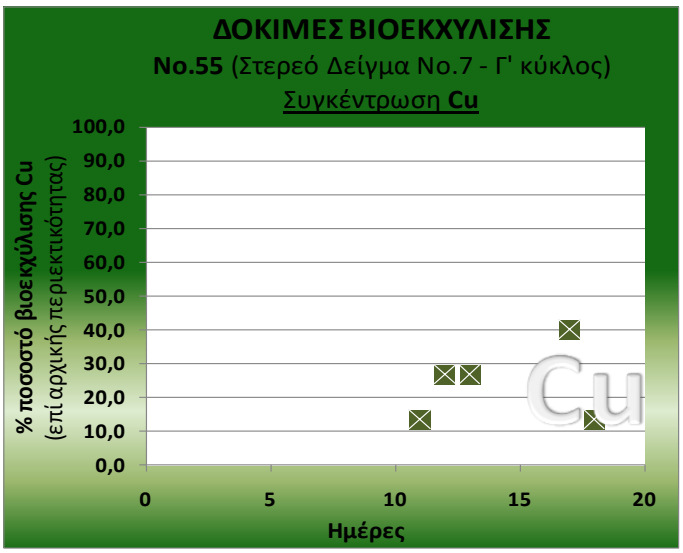
Α' Καλλιέργεια – Γ' Μεταφορά

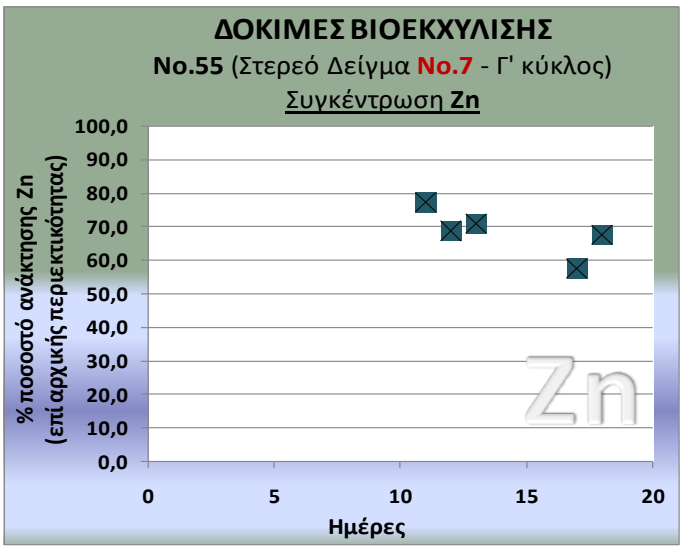








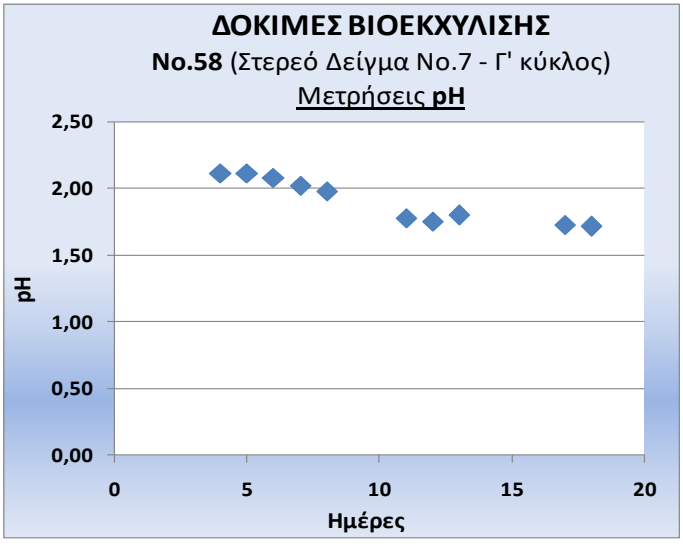


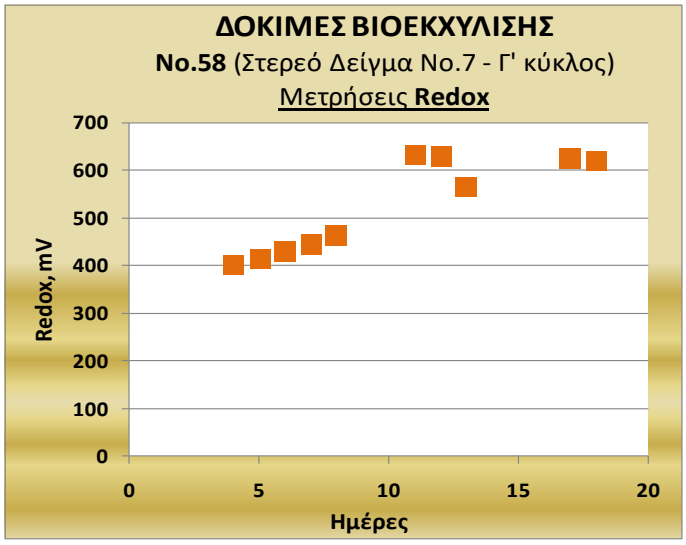


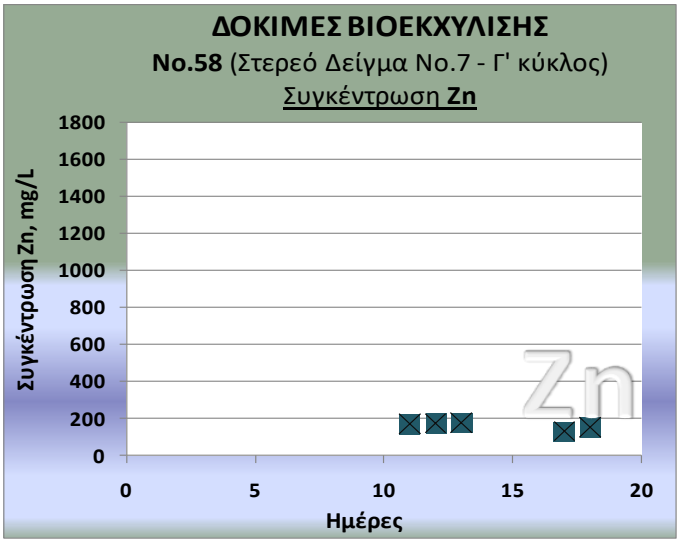
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

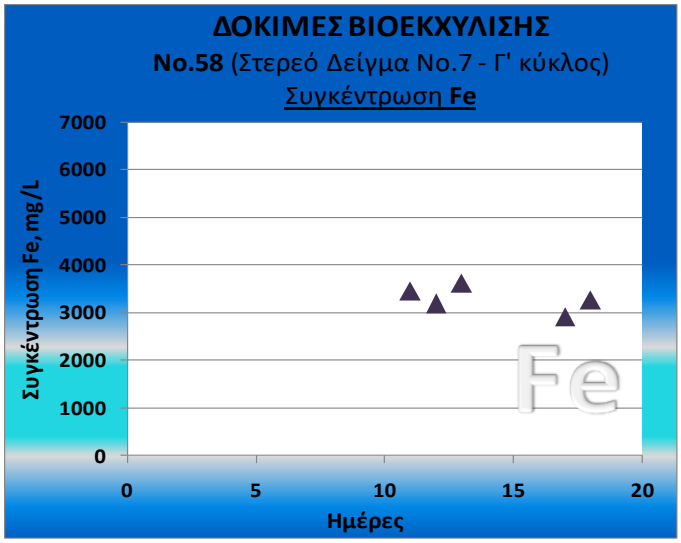
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

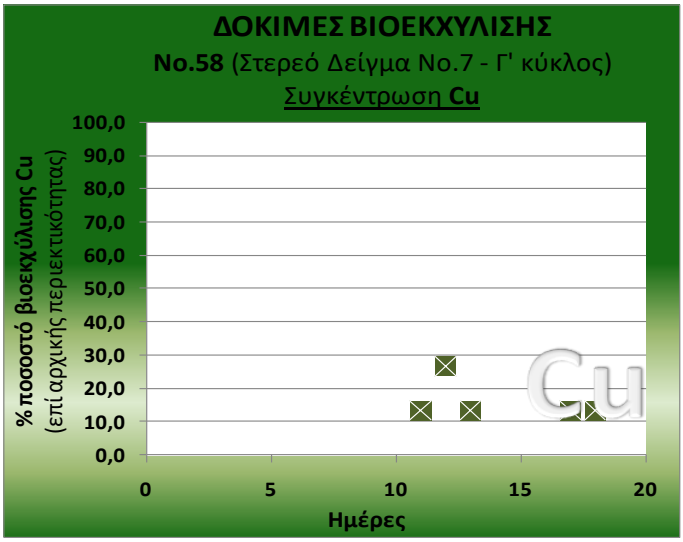
Β' Καλλιέργεια – Γ' Μεταφορά

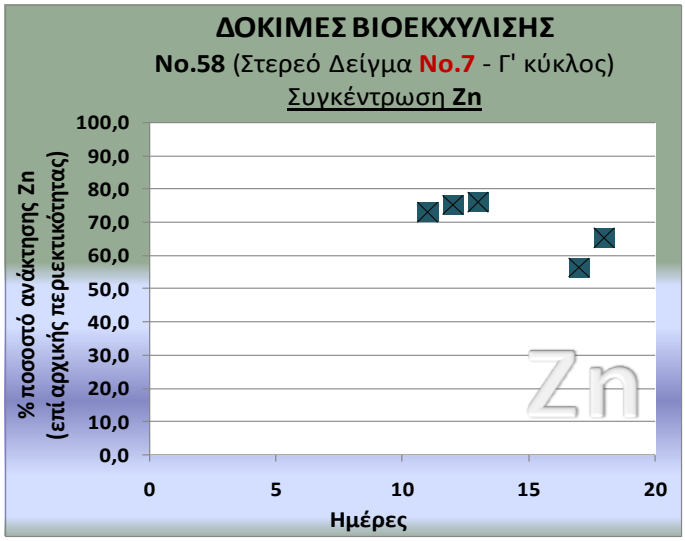








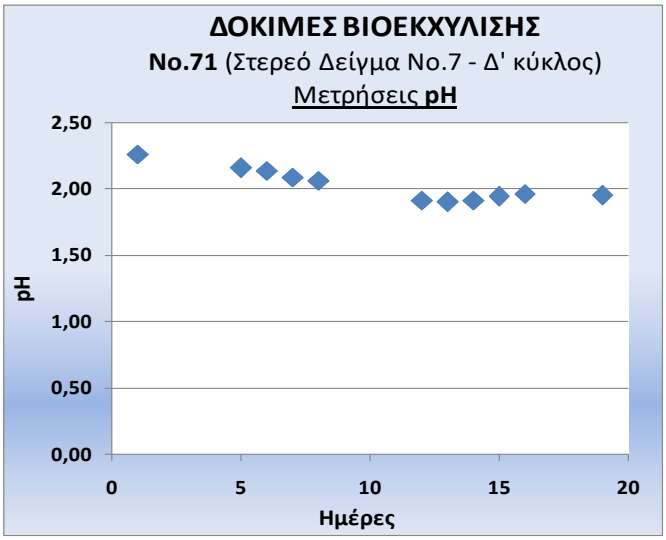


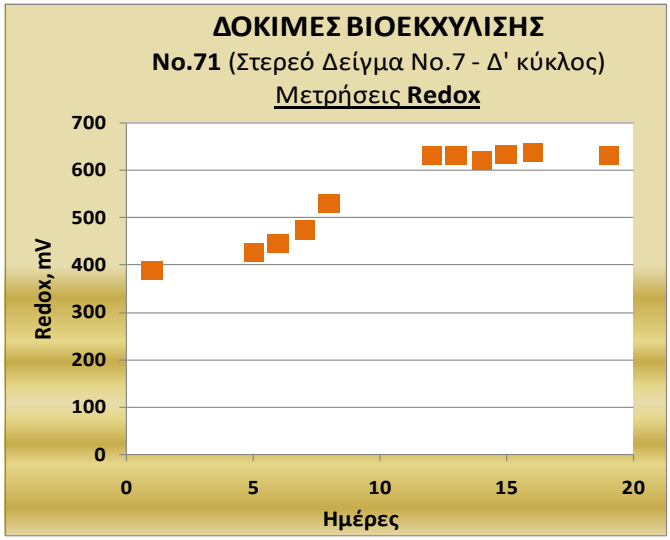


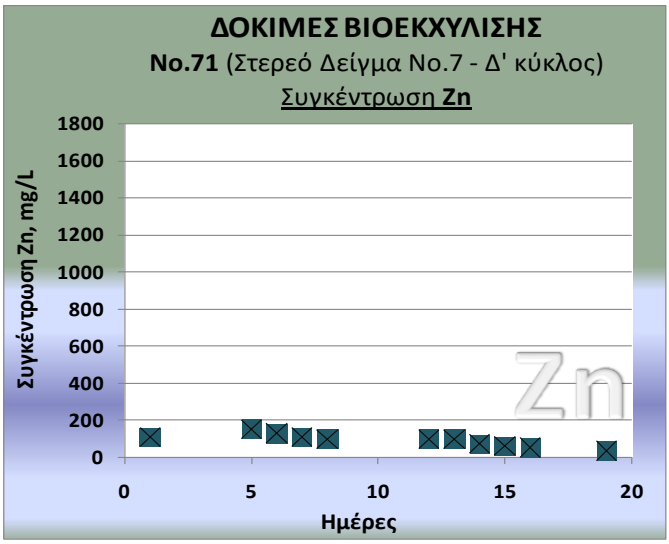
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

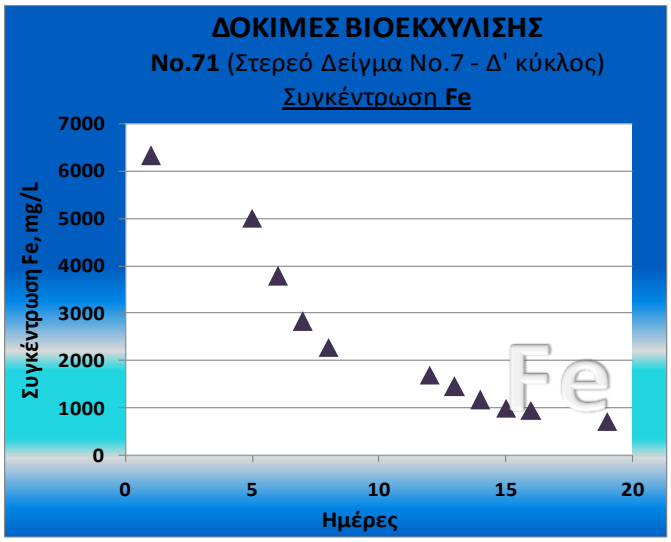
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

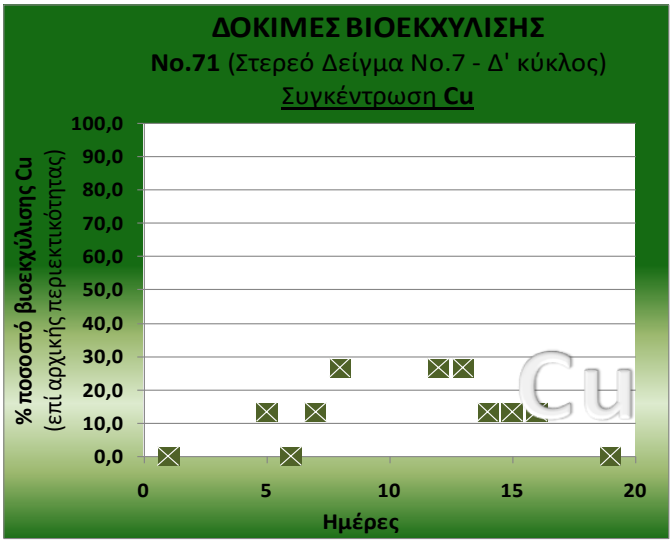
Α' Καλλιέργεια – Δ' Μεταφορά







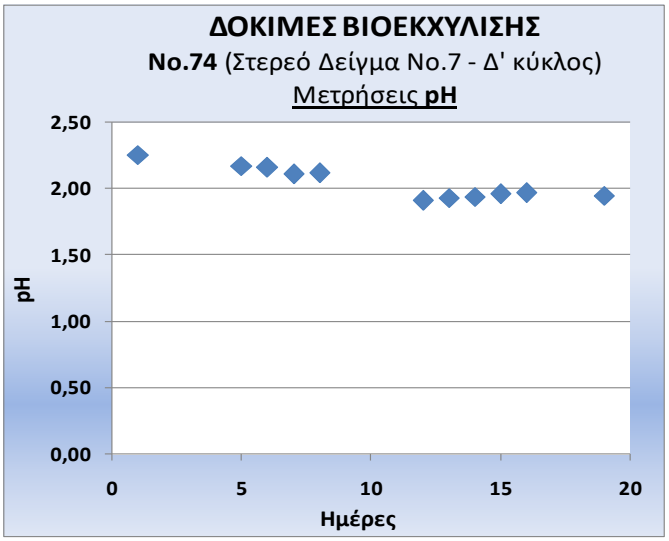


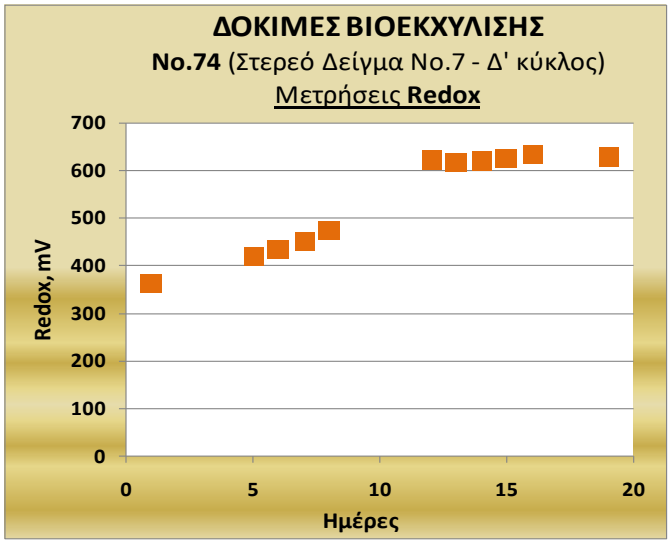


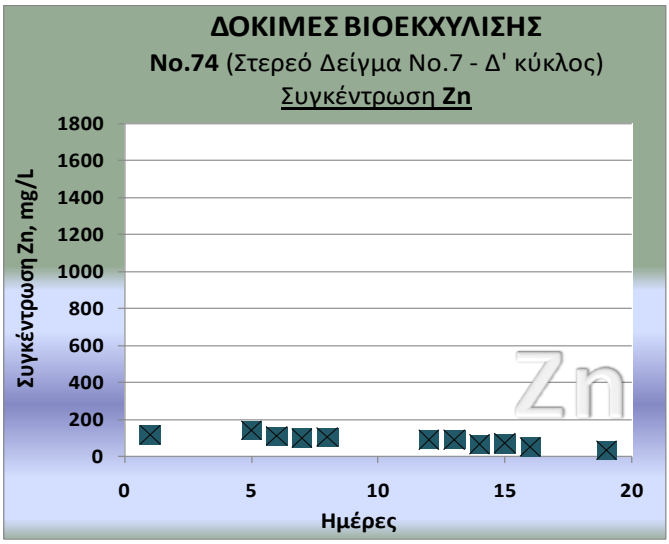
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

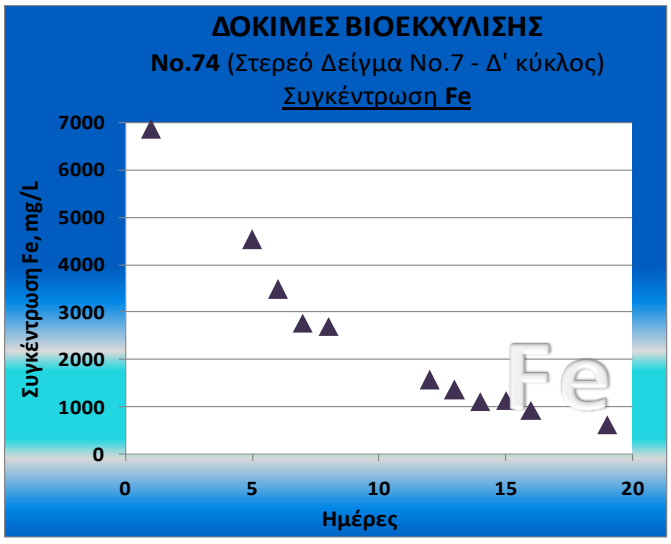
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

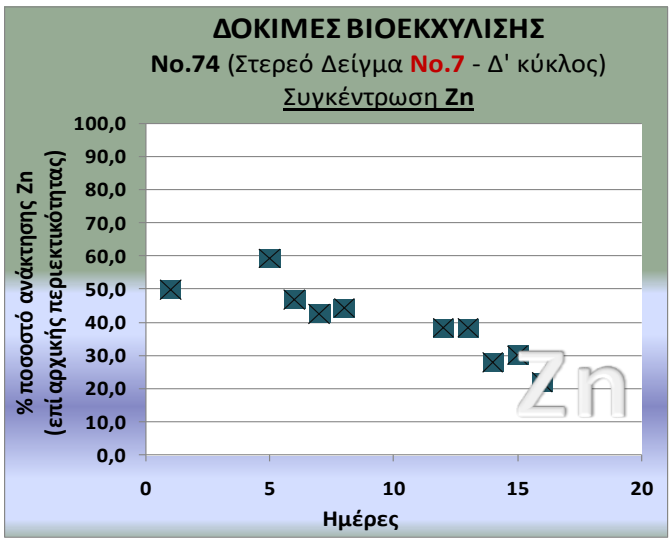
Β' Καλλιέργεια – Δ' Μεταφορά







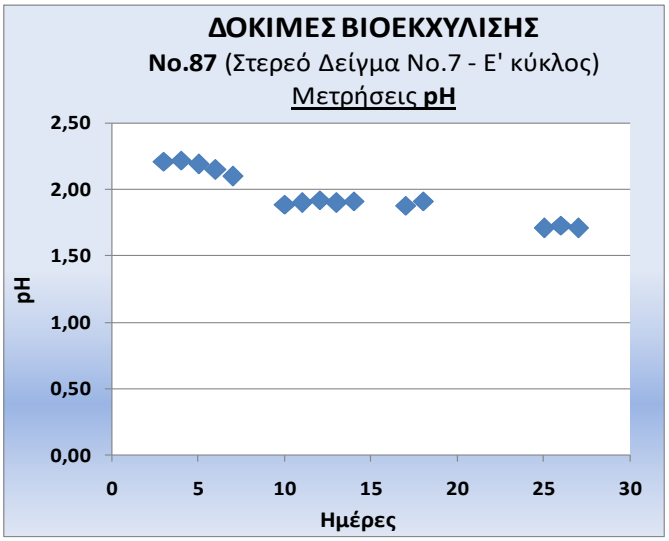


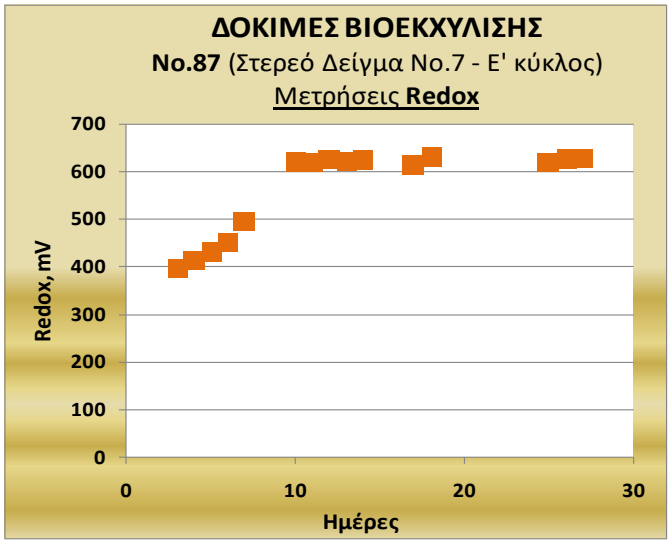


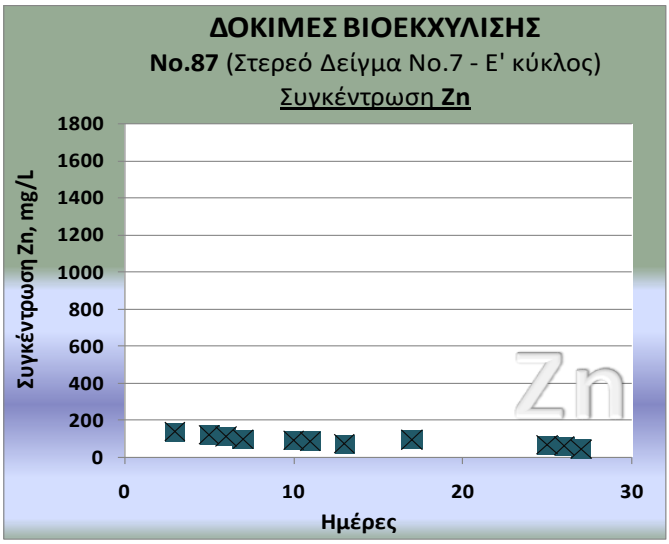
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

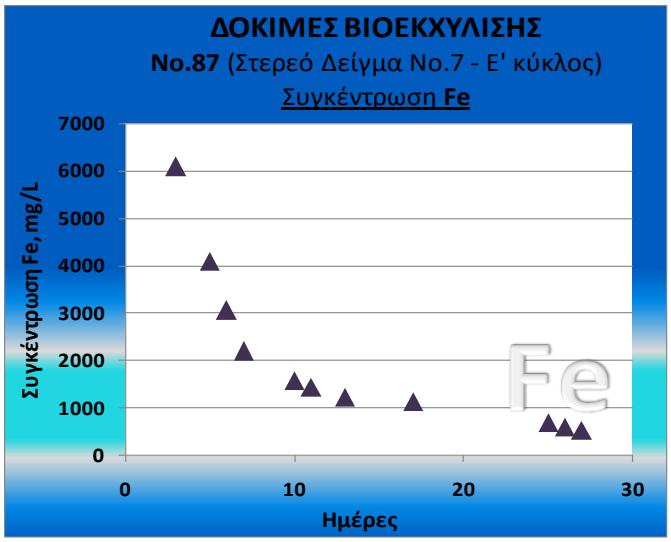
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

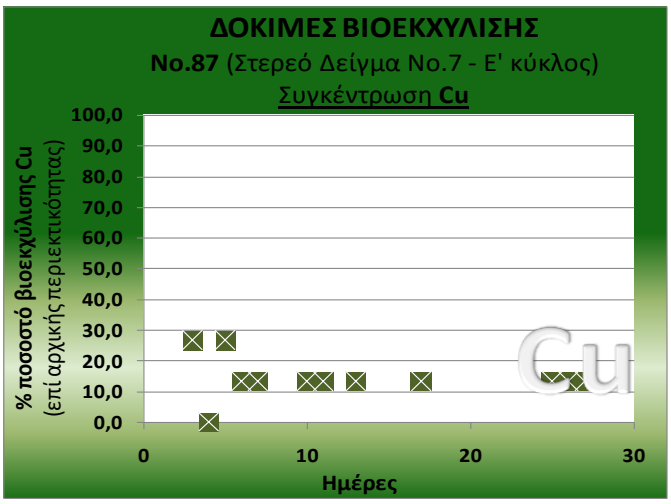
Α' Καλλιέργεια – Ε' Μεταφορά

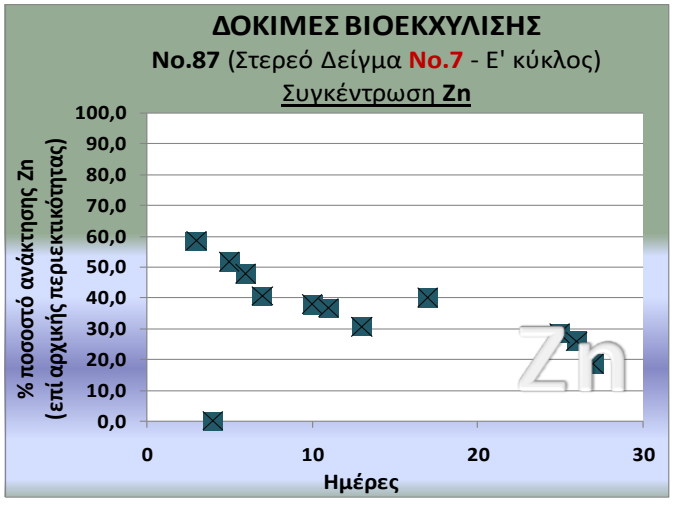








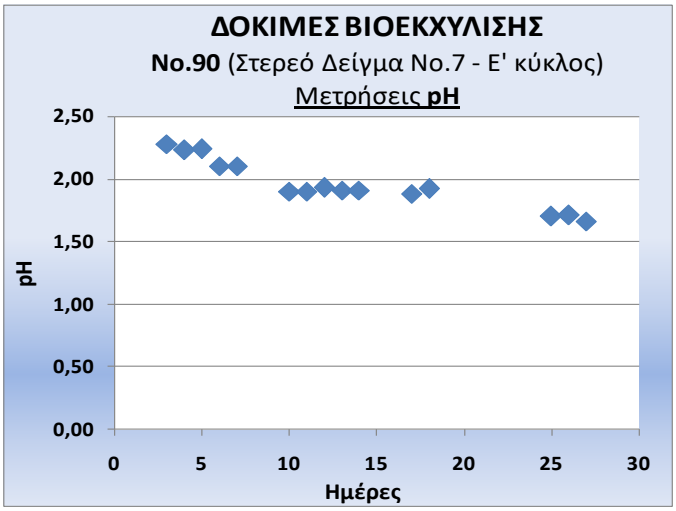


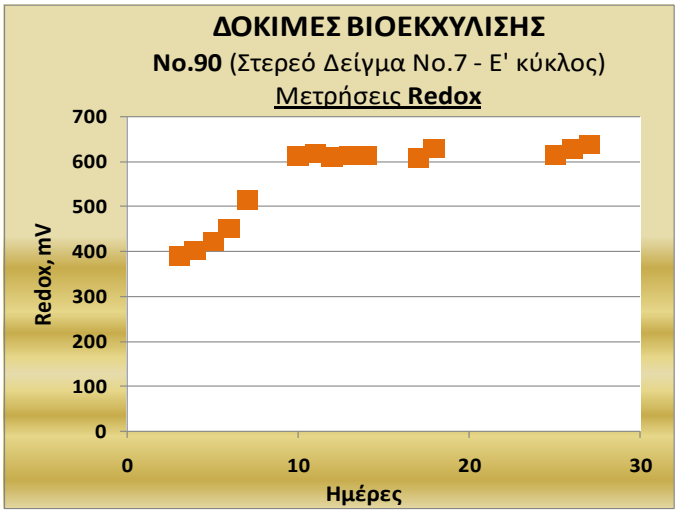


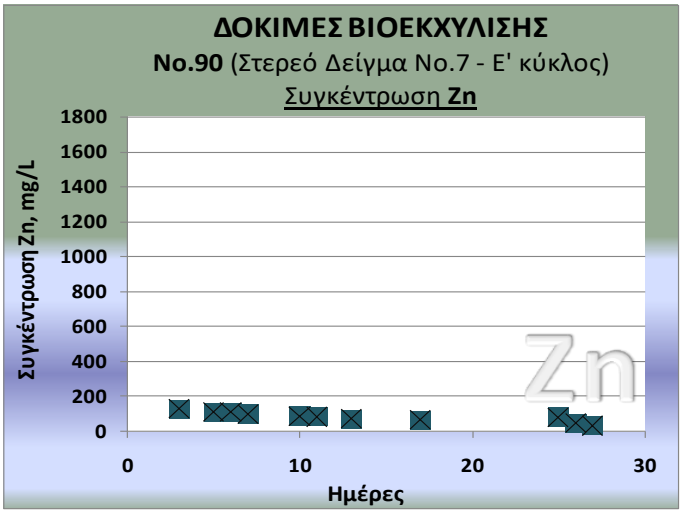
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

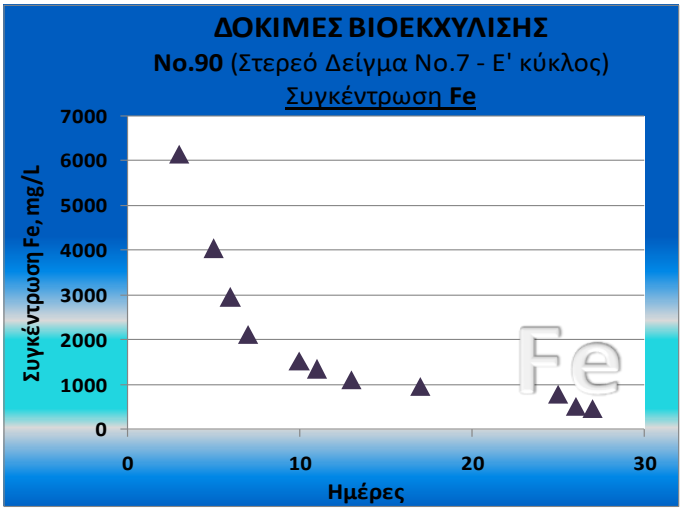
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

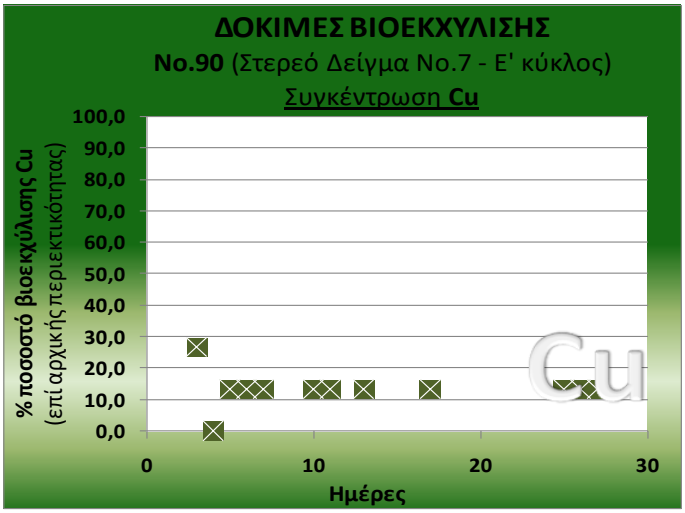
Β' Καλλιέργεια – Ε' Μεταφορά

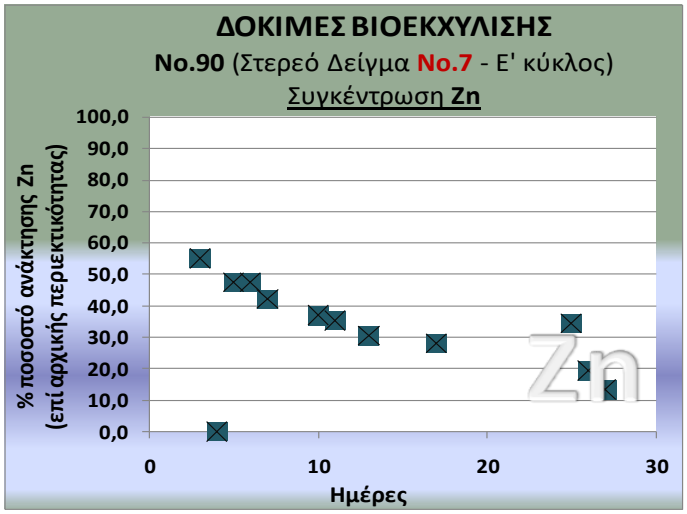








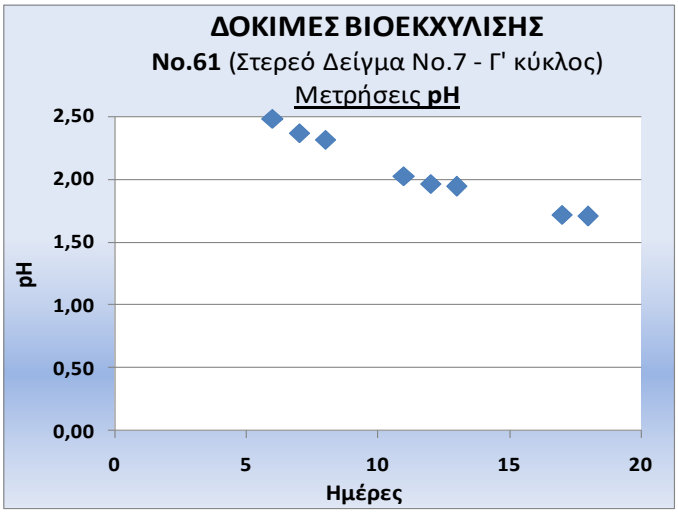


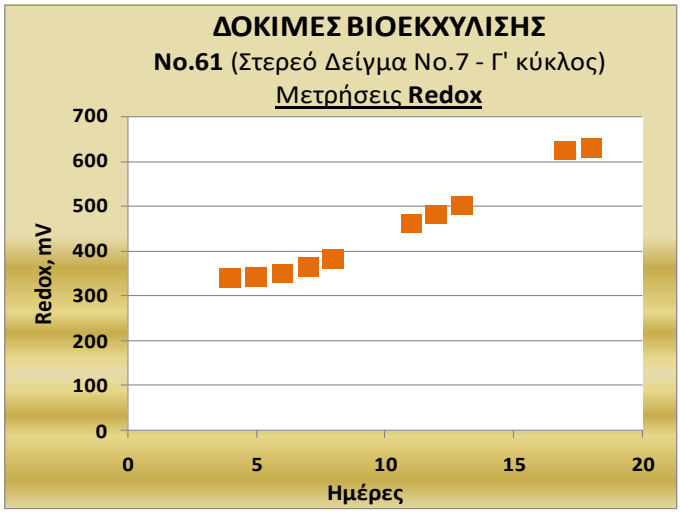


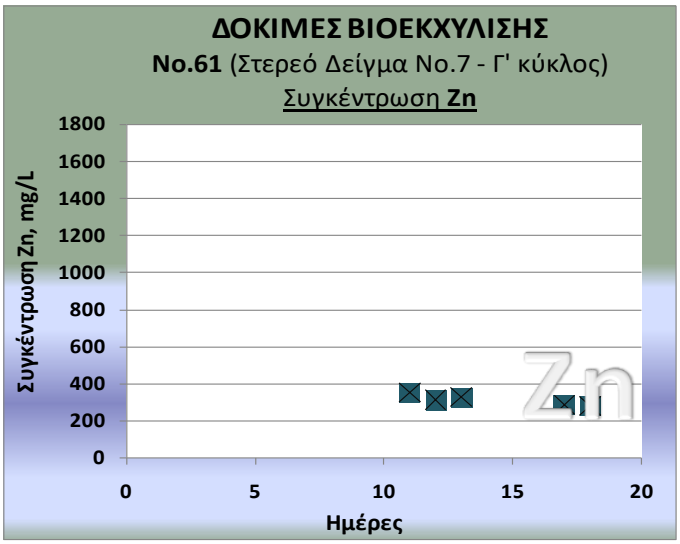
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

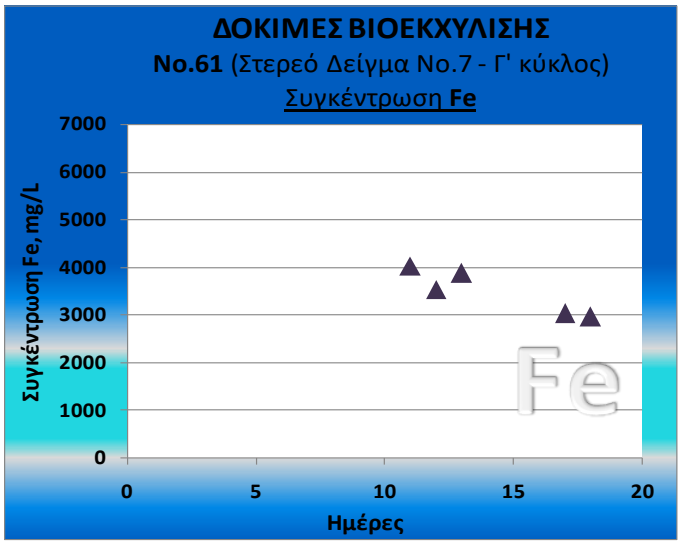
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

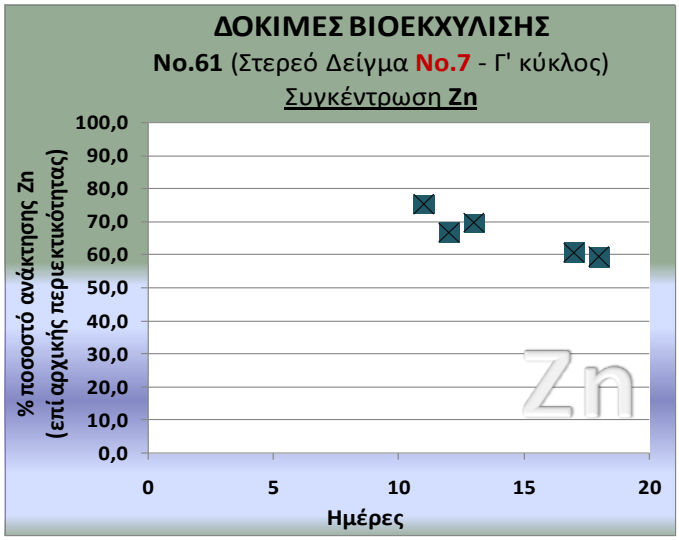
Α' Καλλιέργεια – Γ' Μεταφορά







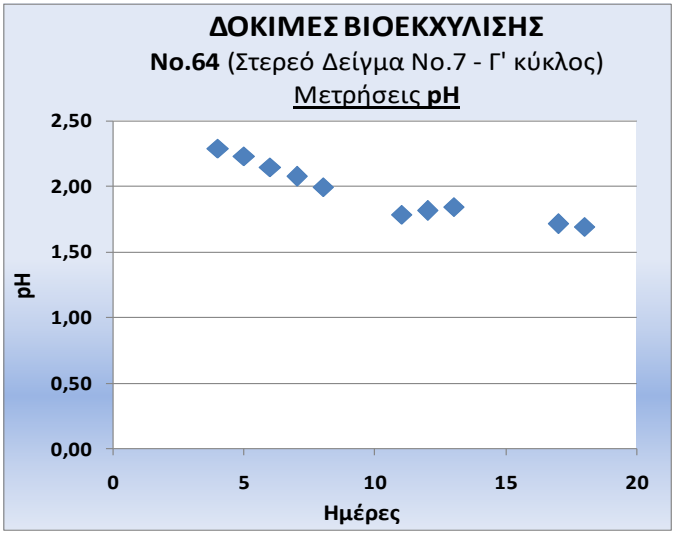


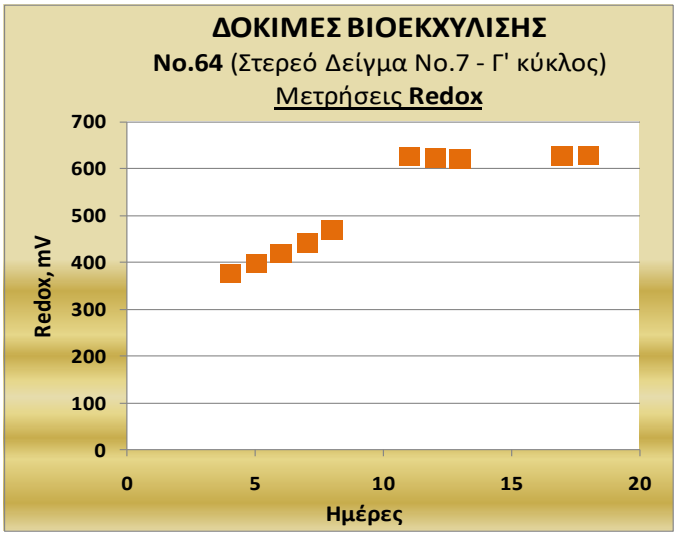


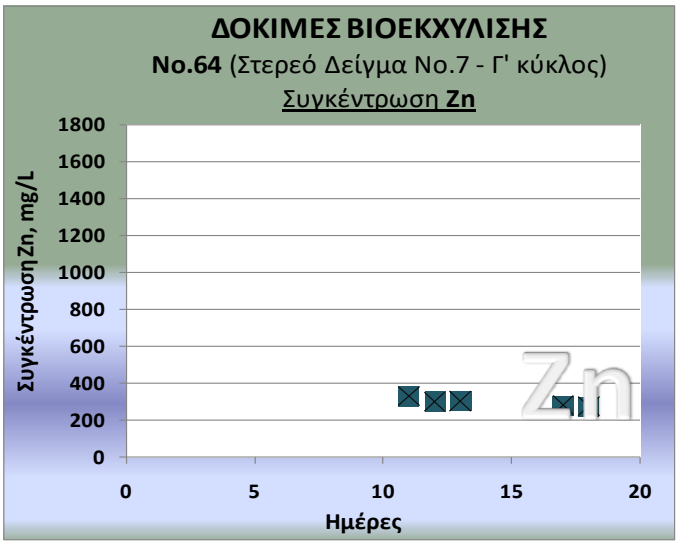
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

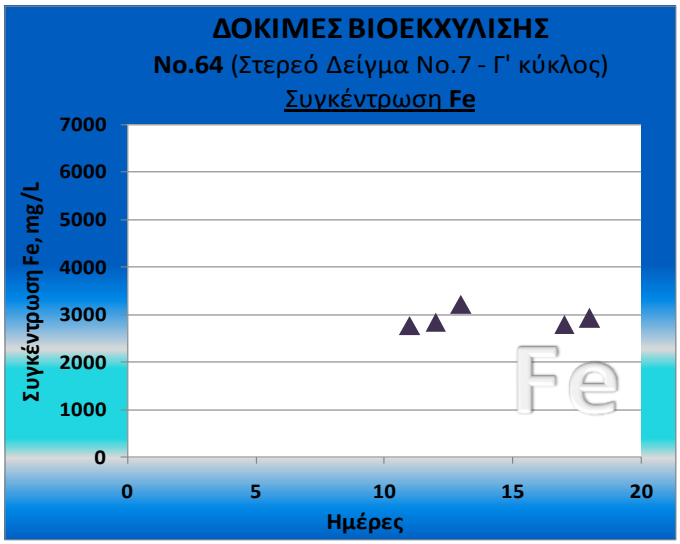
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

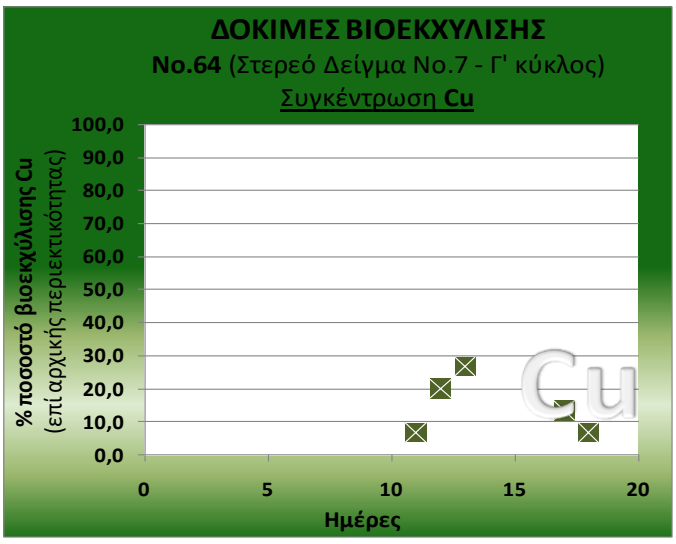
Β' Καλλιέργεια – Γ' Μεταφορά

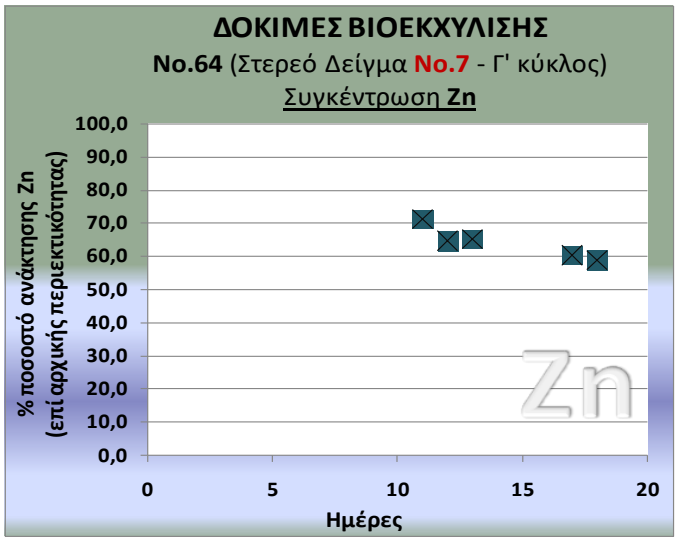








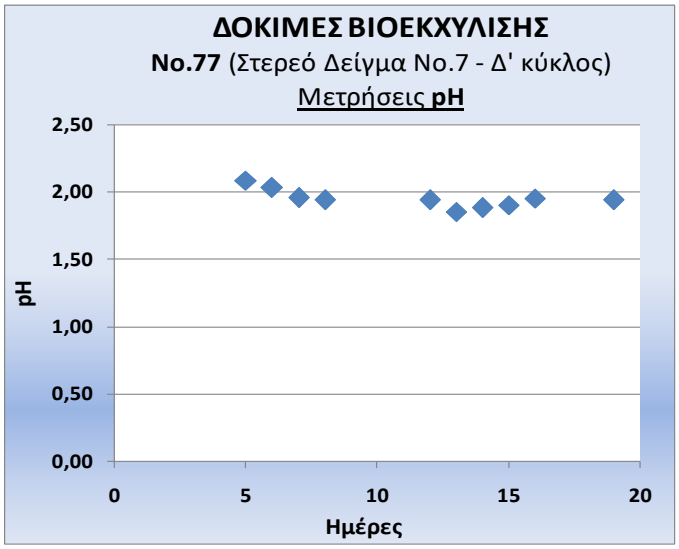


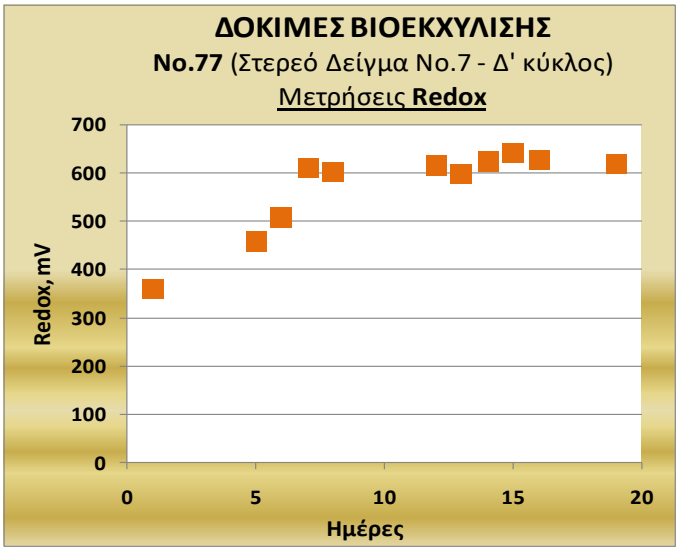


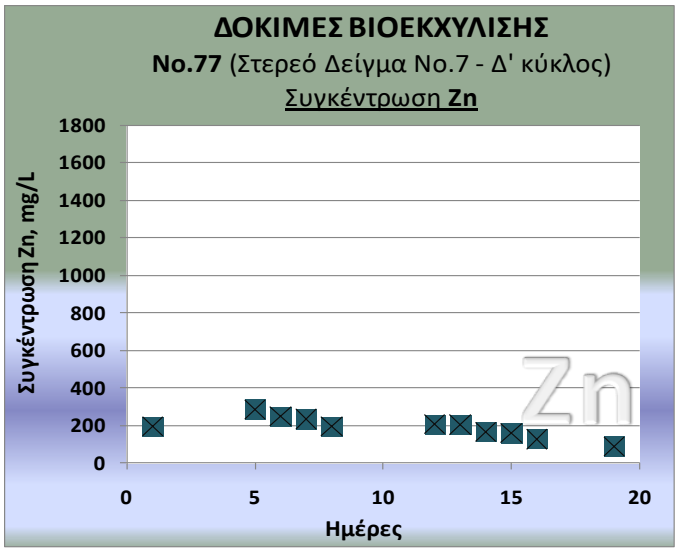
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

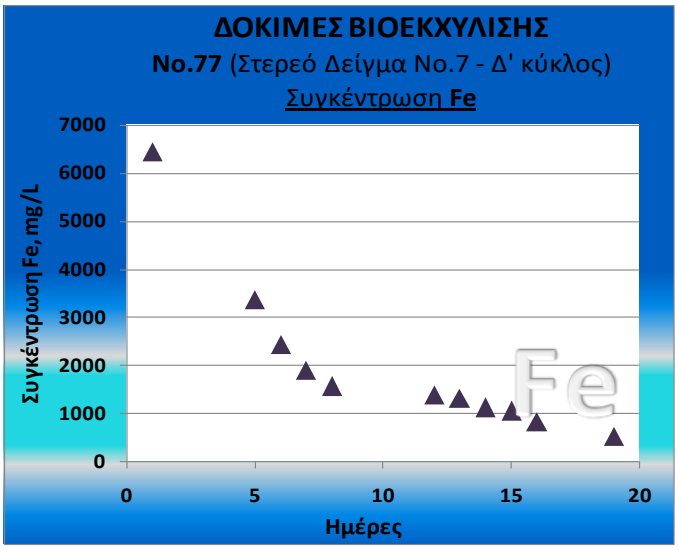
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

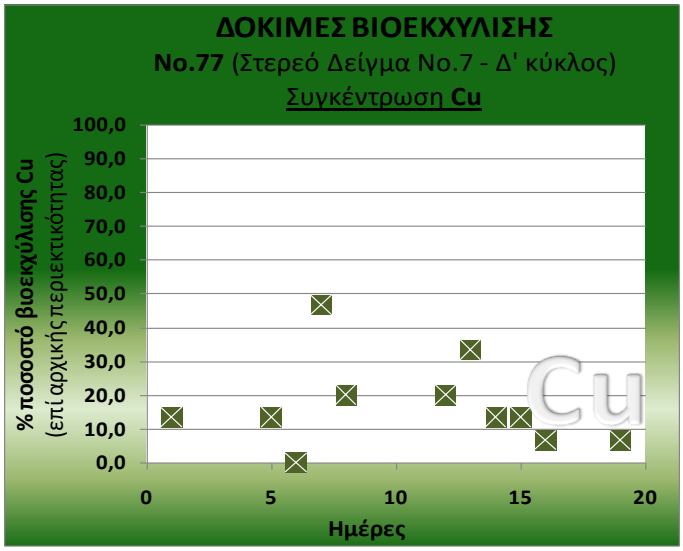
Α' Καλλιέργεια – Δ' Μεταφορά

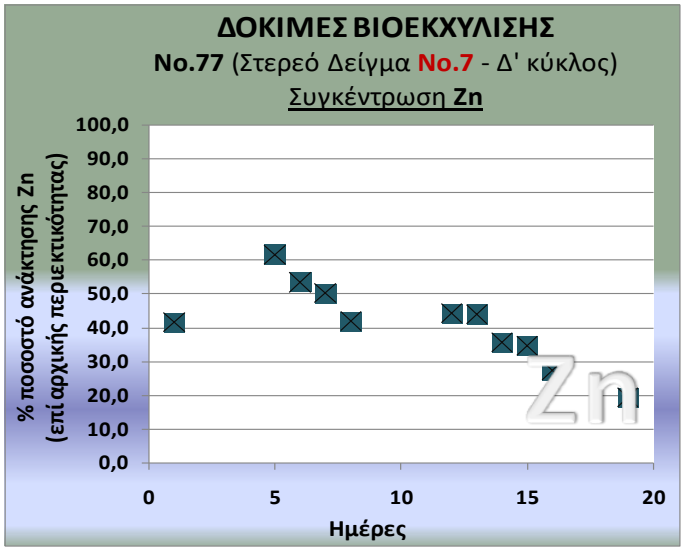








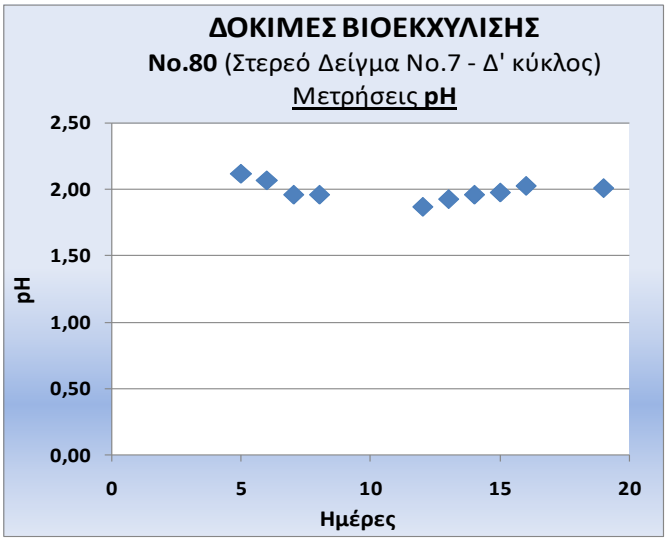


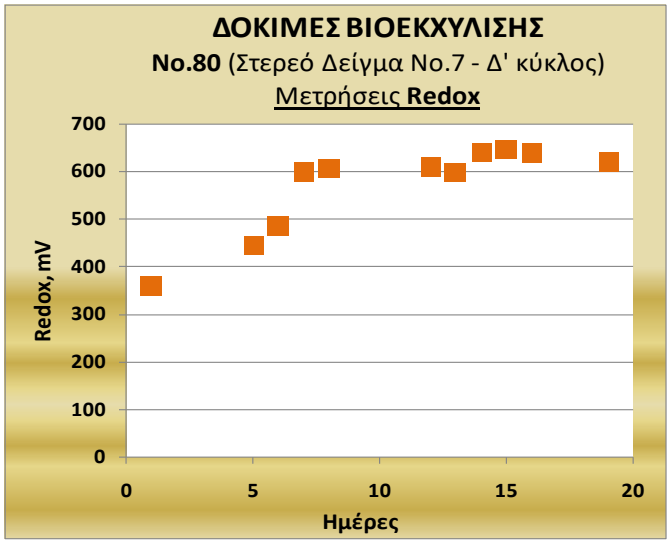


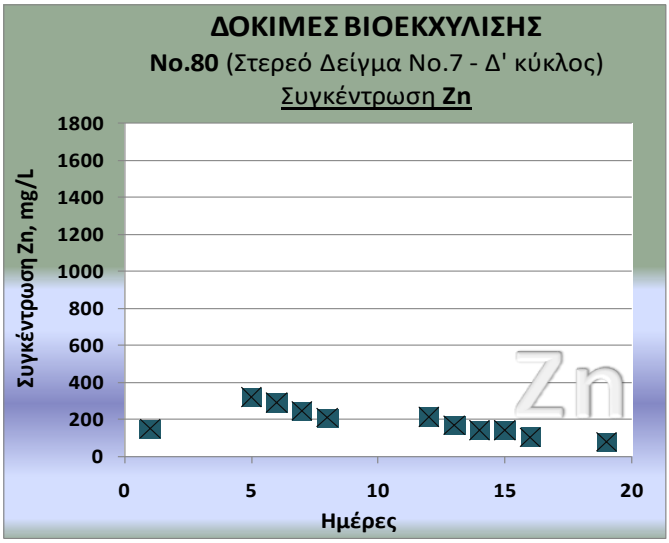
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

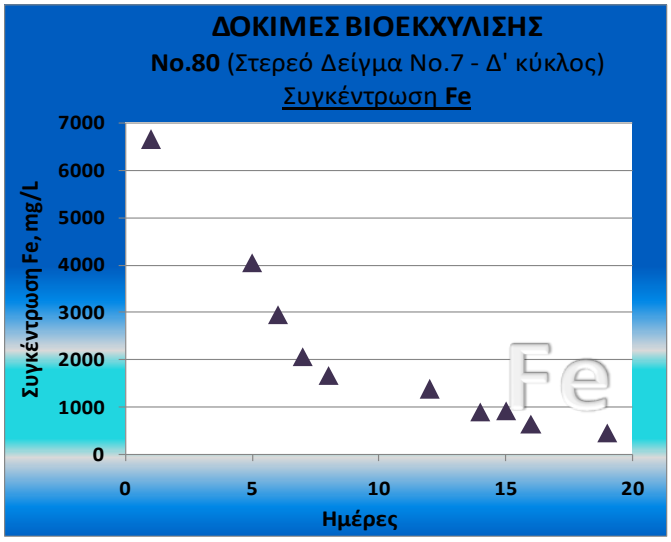
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

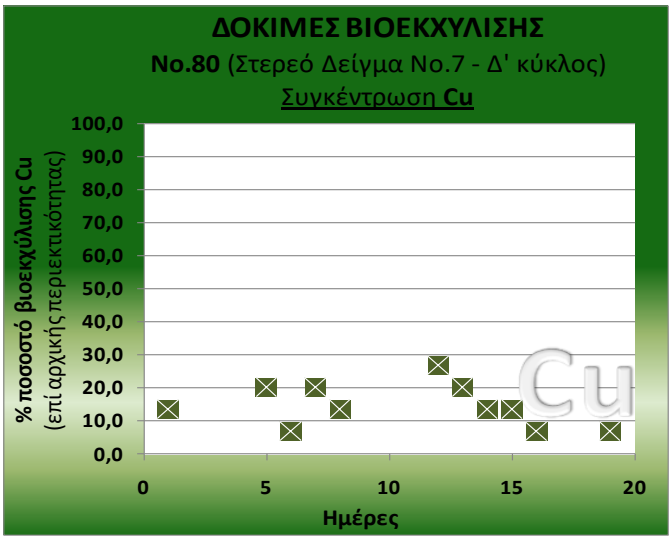
Β' Καλλιέργεια – Δ' Μεταφορά

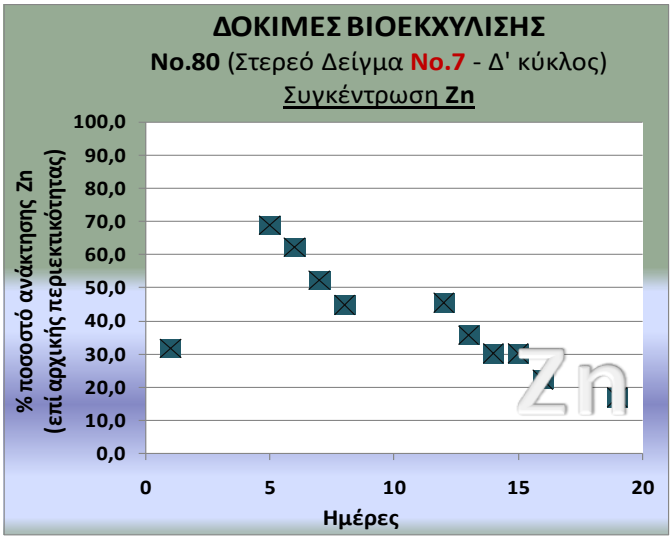








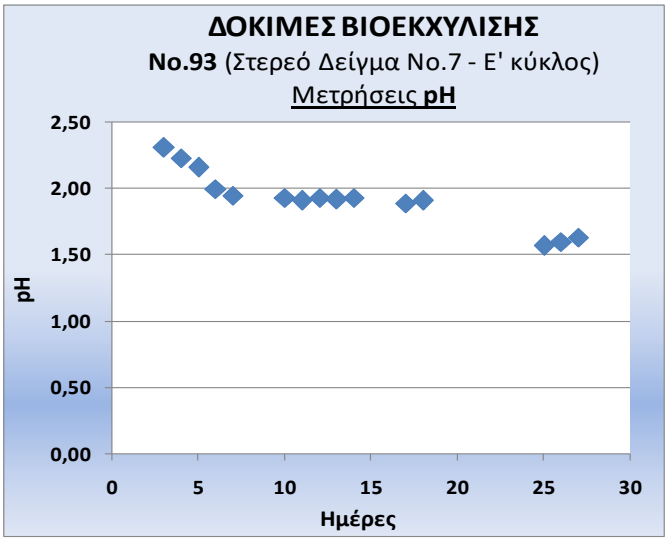


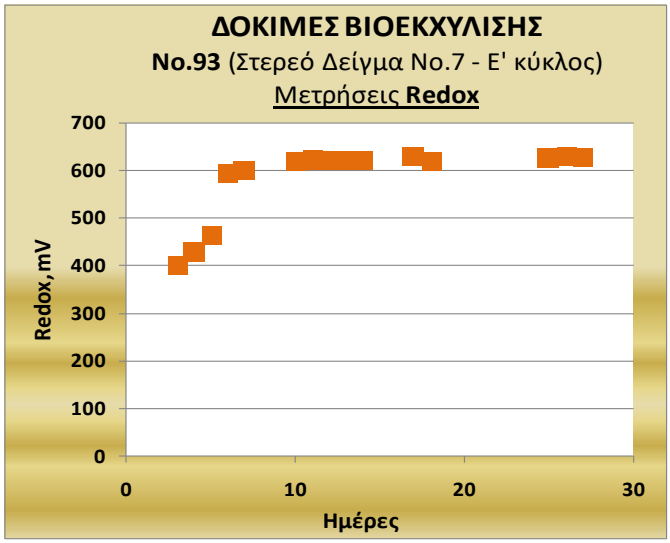


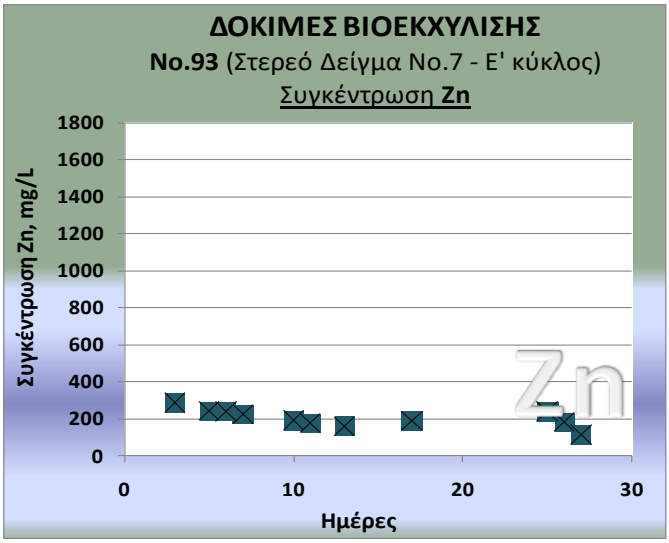
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

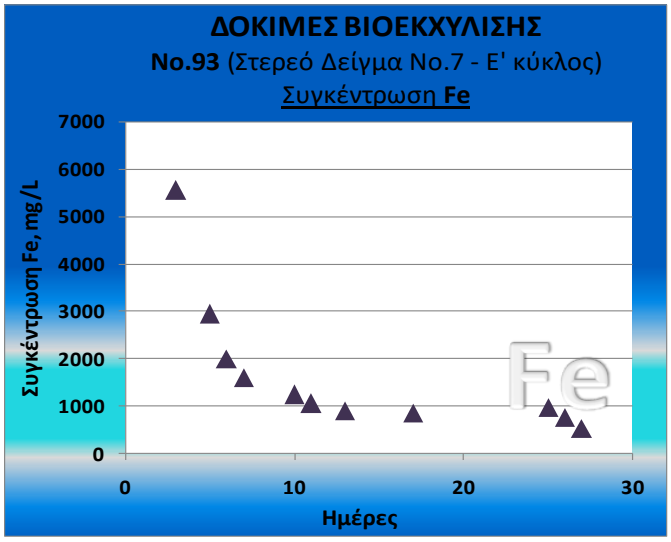
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

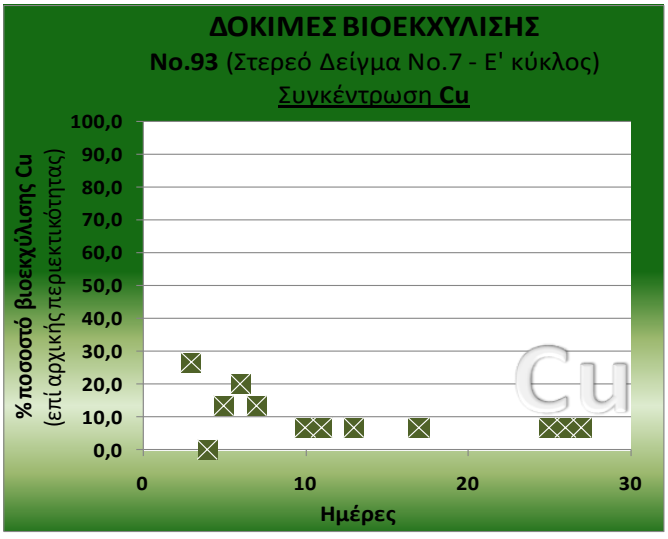
Α' Καλλιέργεια – Ε' Μεταφορά

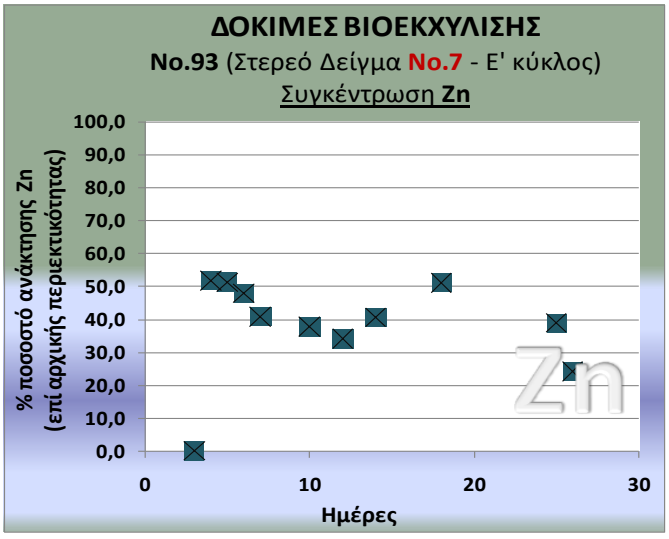








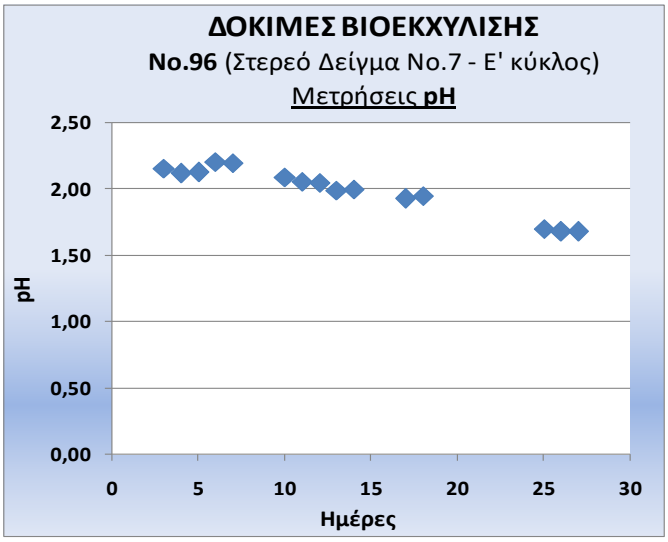


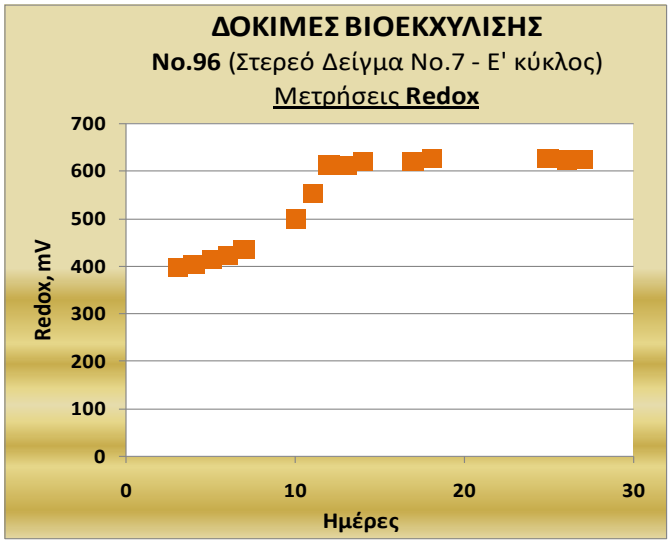


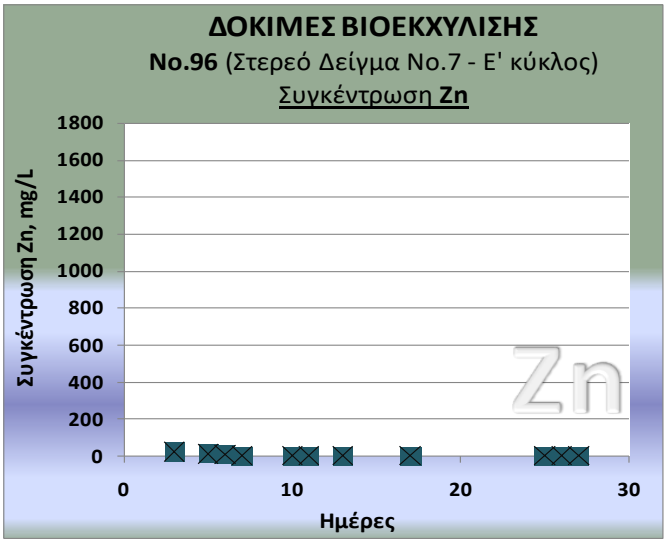
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.7

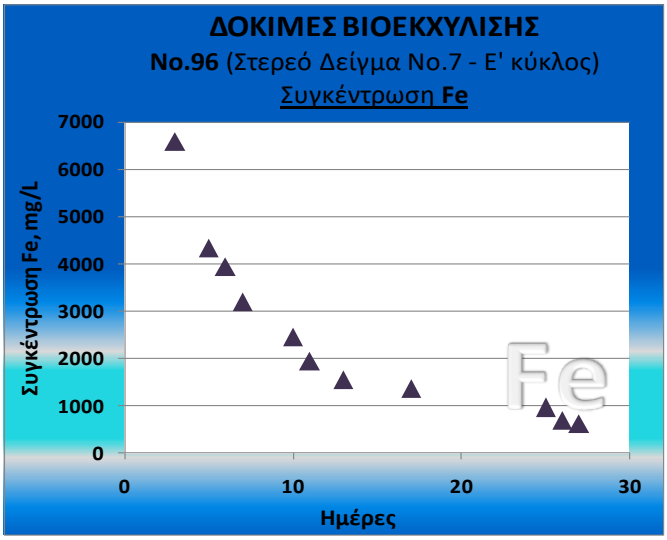
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

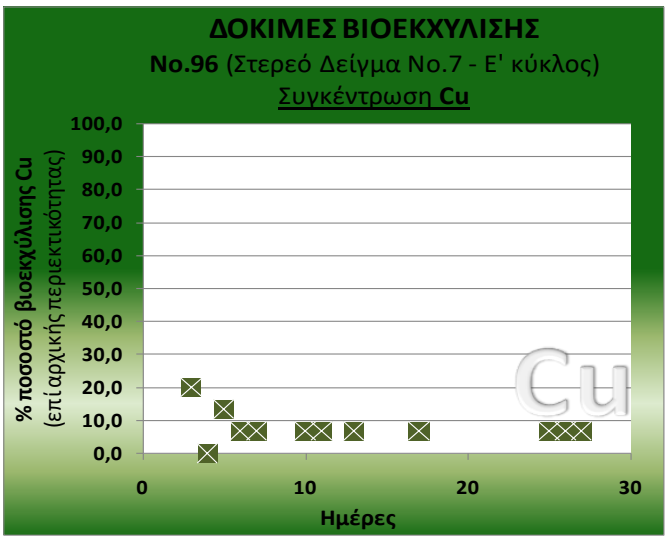
Β' Καλλιέργεια – Ε' Μεταφορά







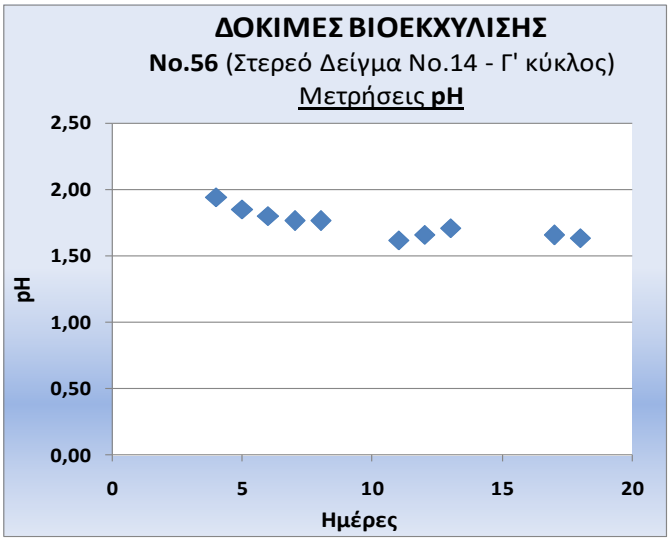


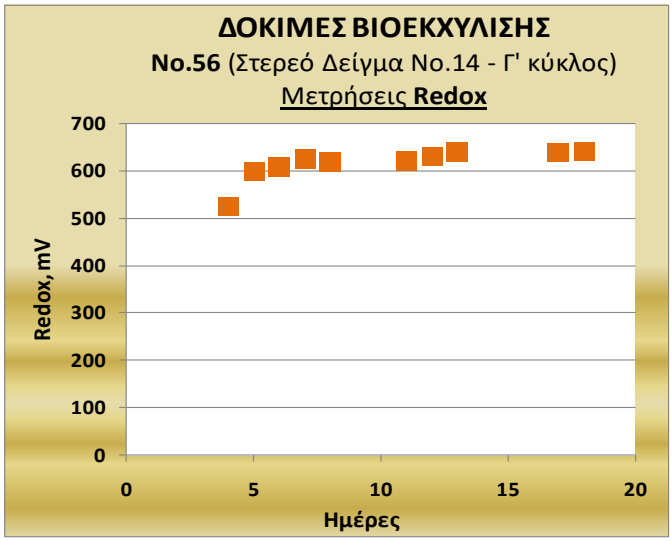


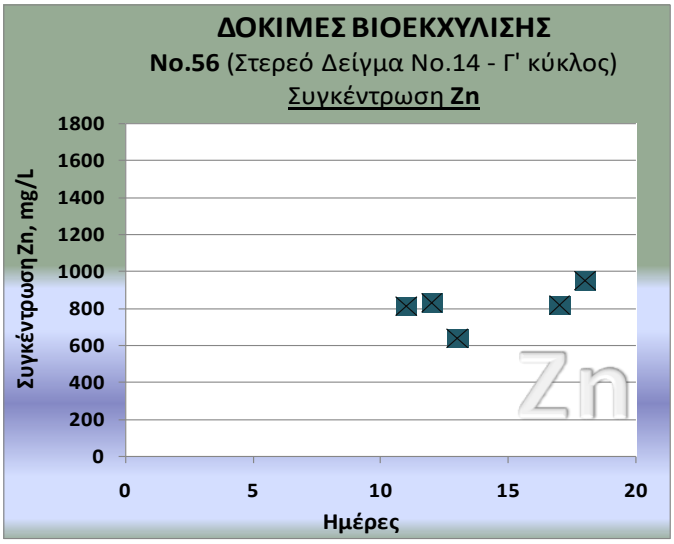
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

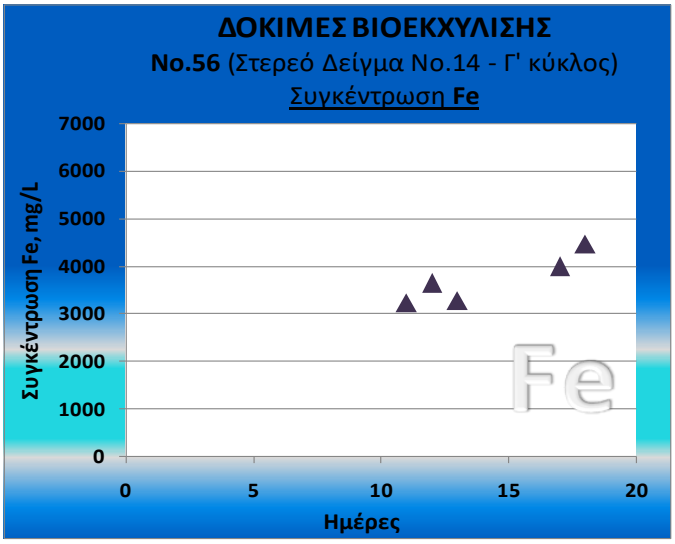
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

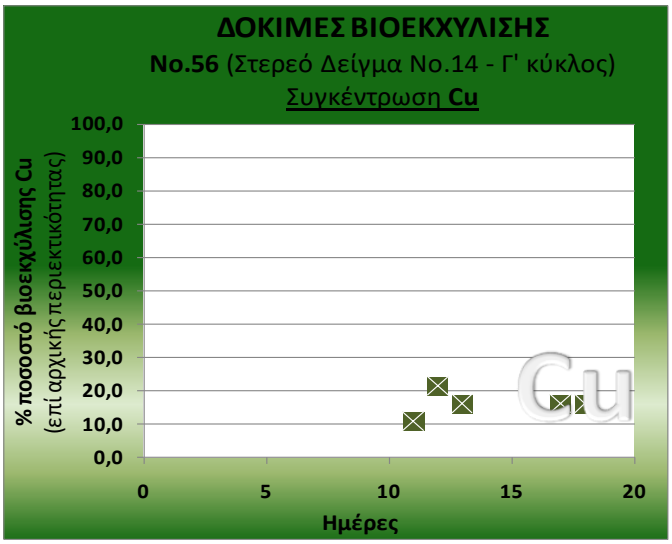
Α' Καλλιέργεια – Γ' Μεταφορά

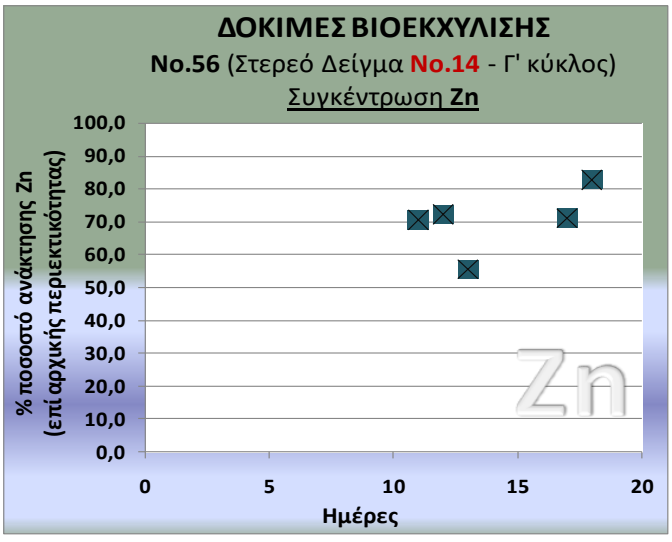








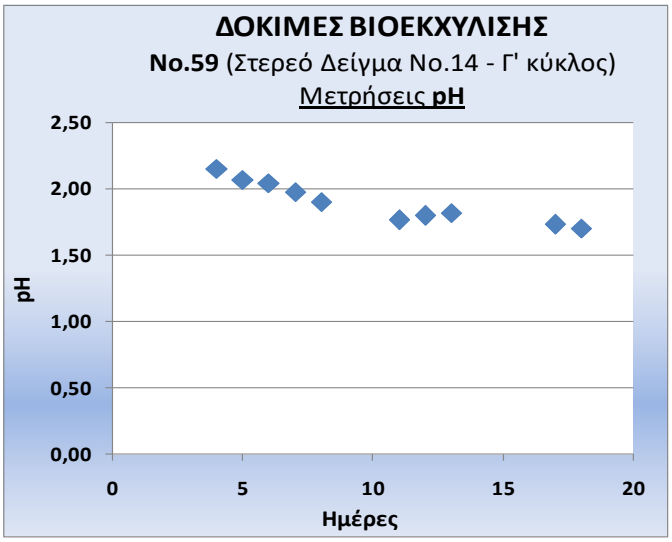


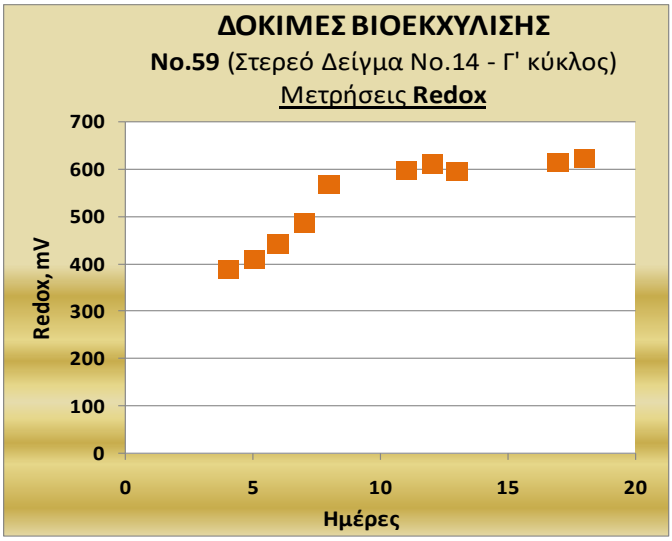


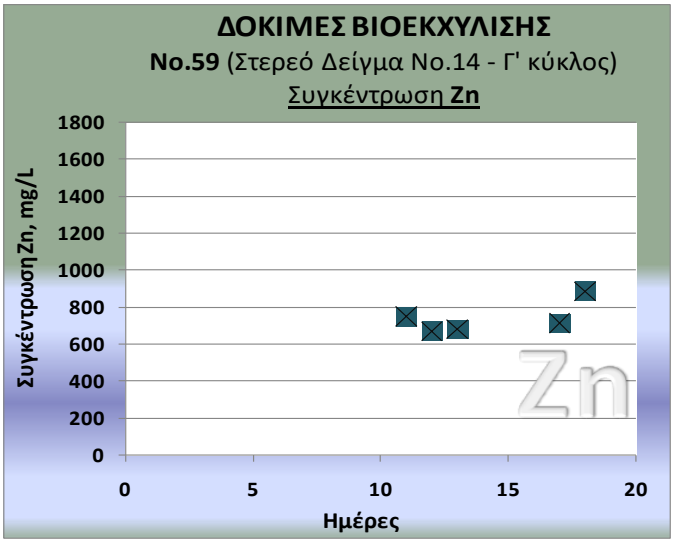
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

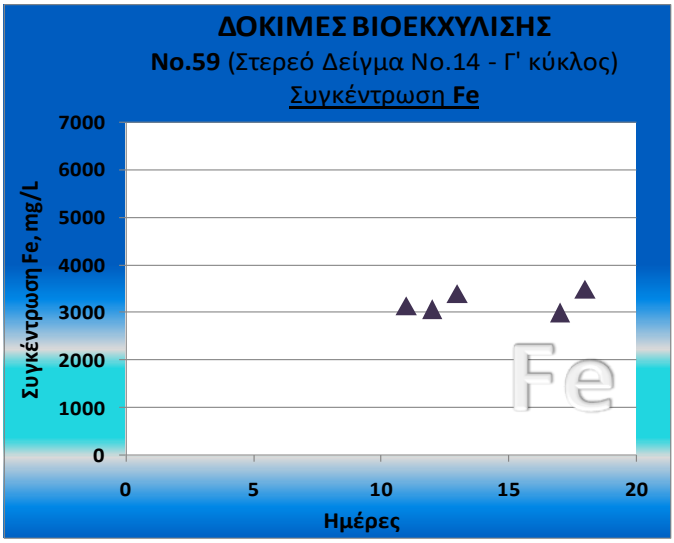
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

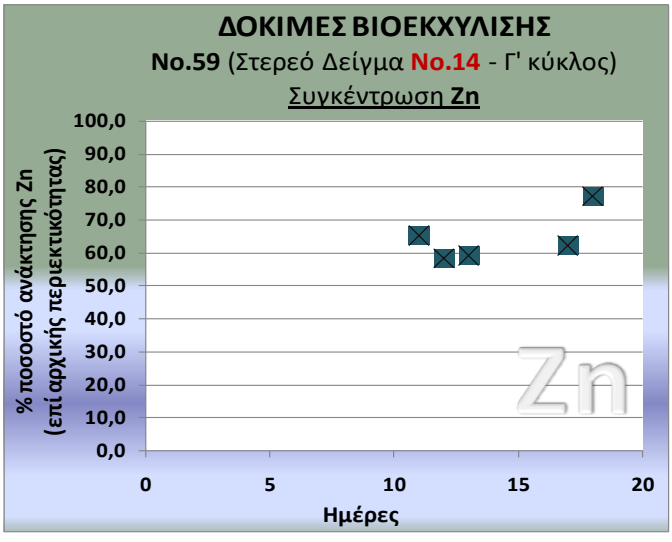
Β' Καλλιέργεια – Γ' Μεταφορά







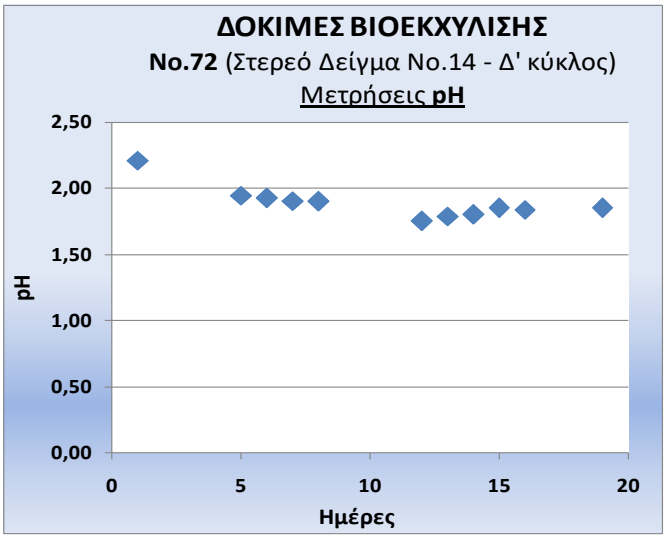


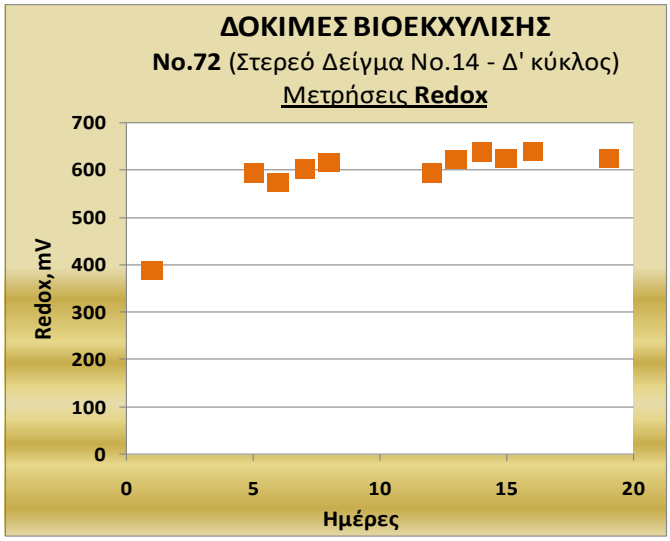


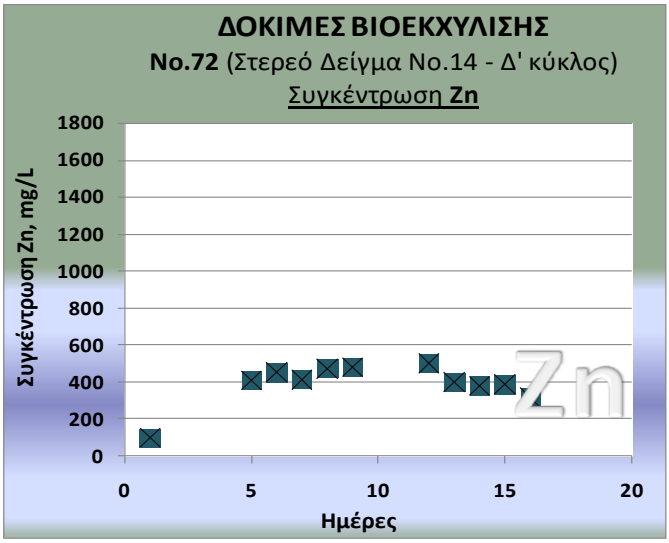
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

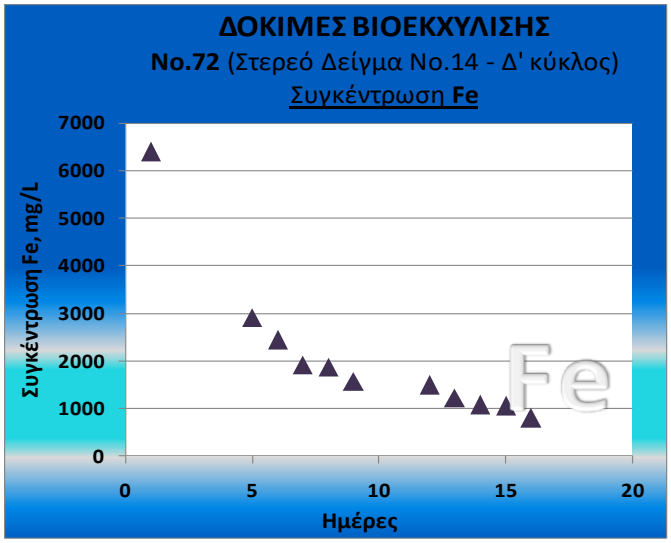
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

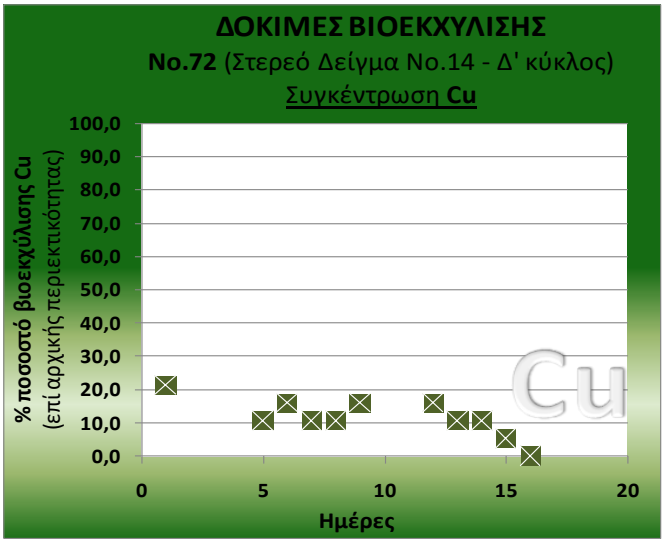
Α' Καλλιέργεια – Δ' Μεταφορά

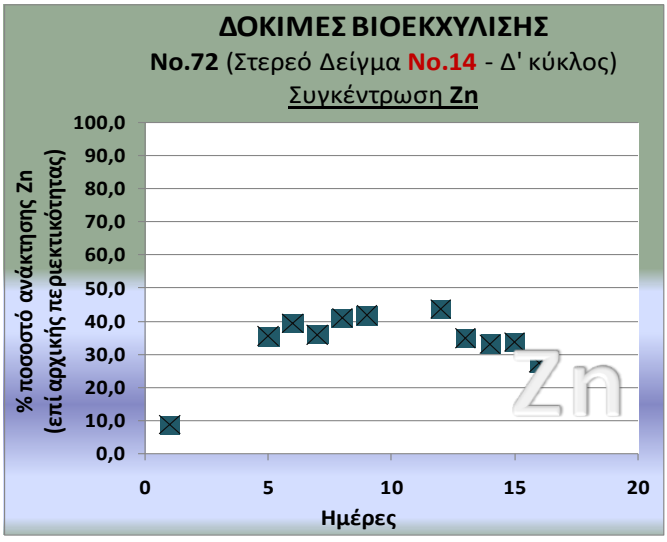








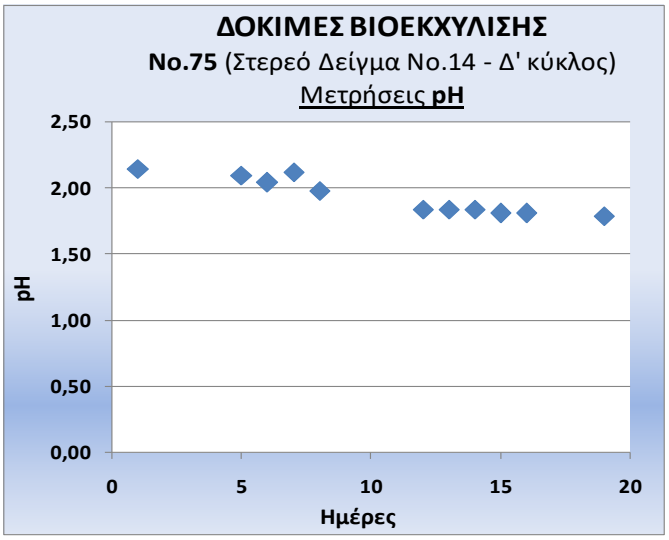


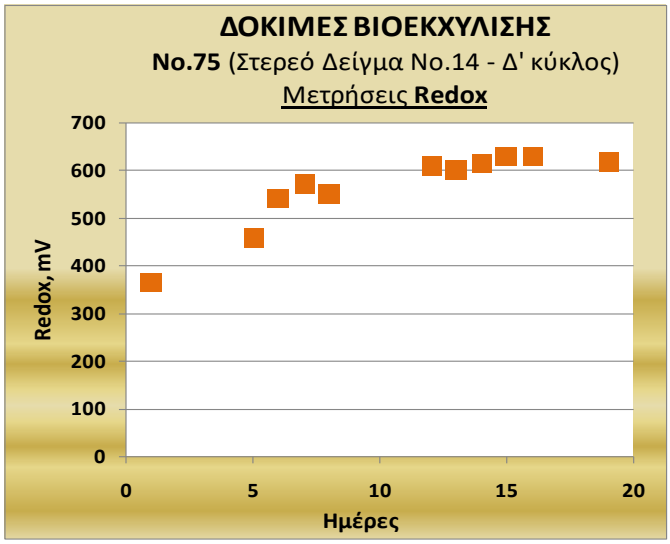


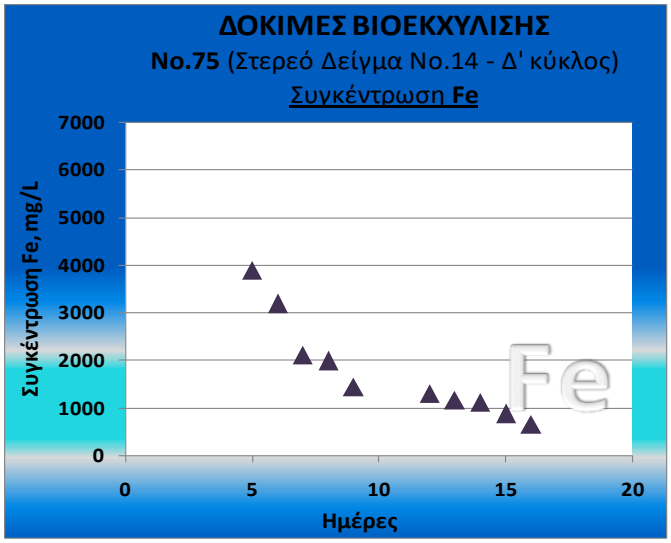
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

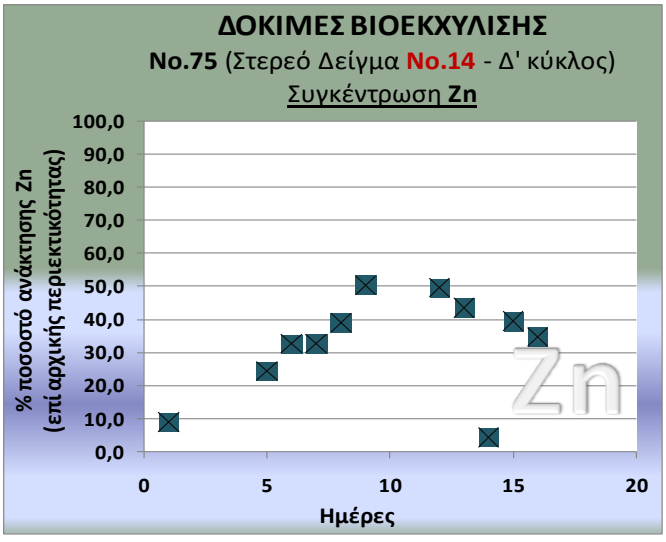
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

Β' Καλλιέργεια – Δ' Μεταφορά





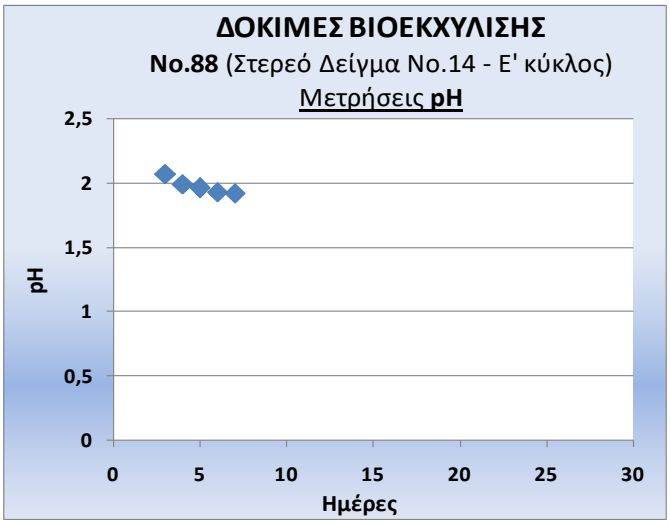


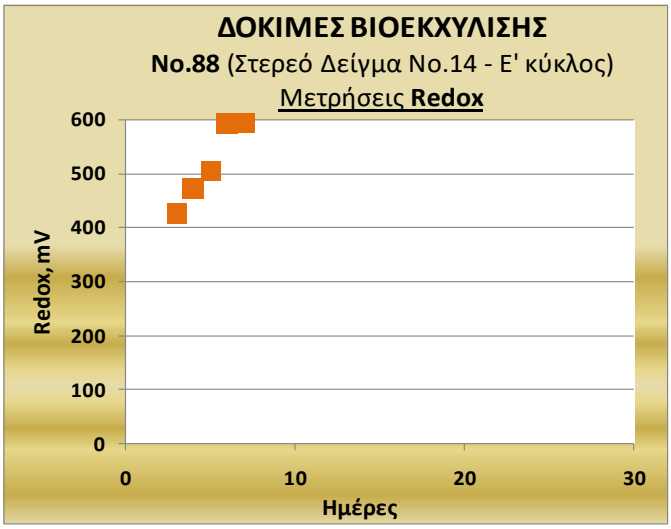


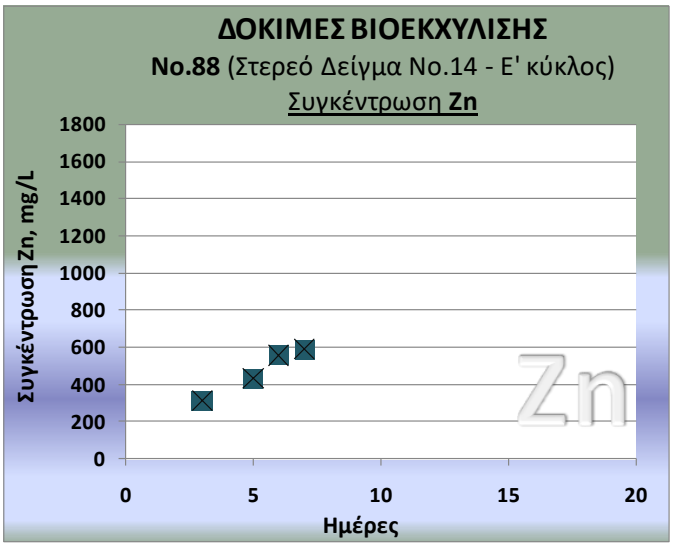
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

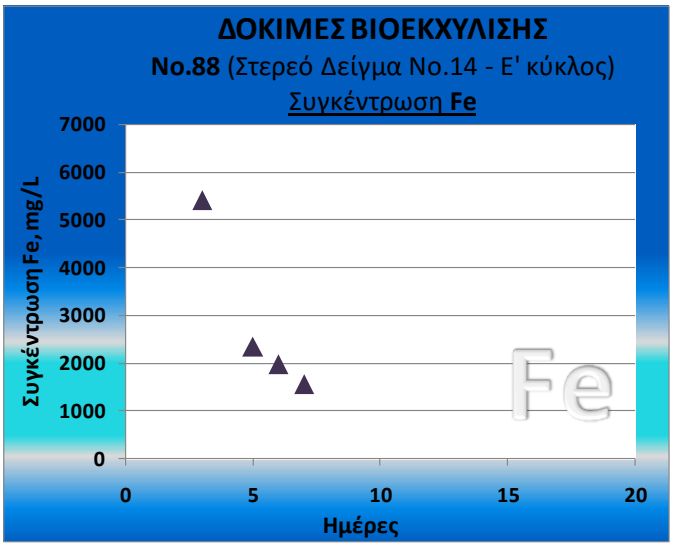
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

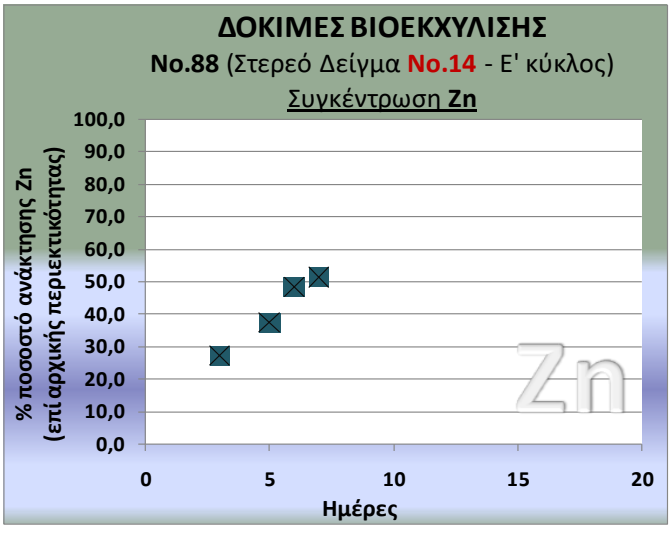
Α' Καλλιέργεια – Ε' Μεταφορά







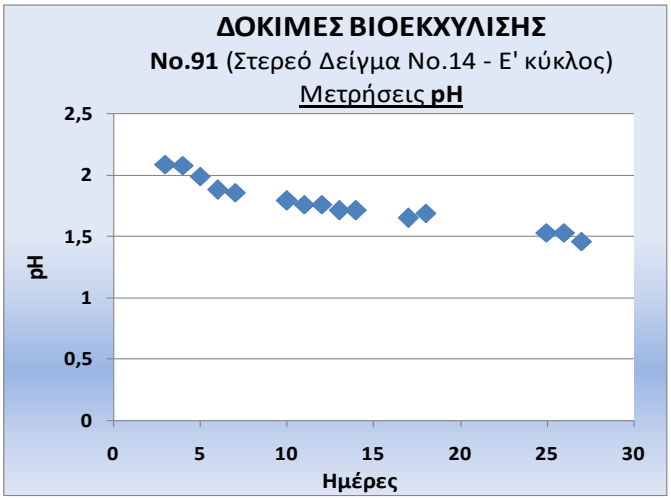


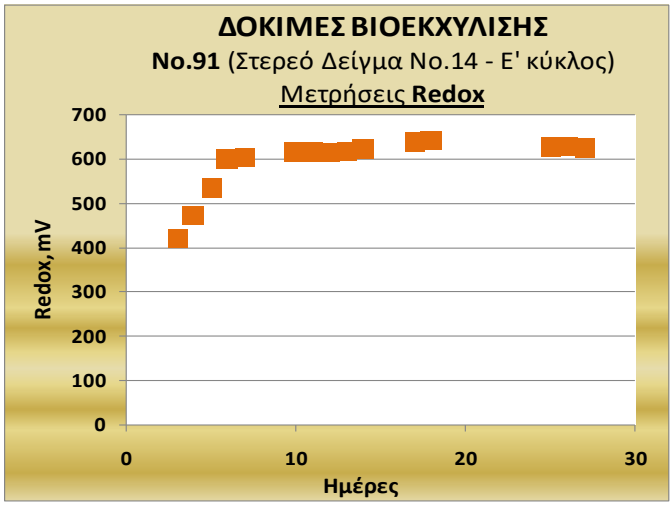


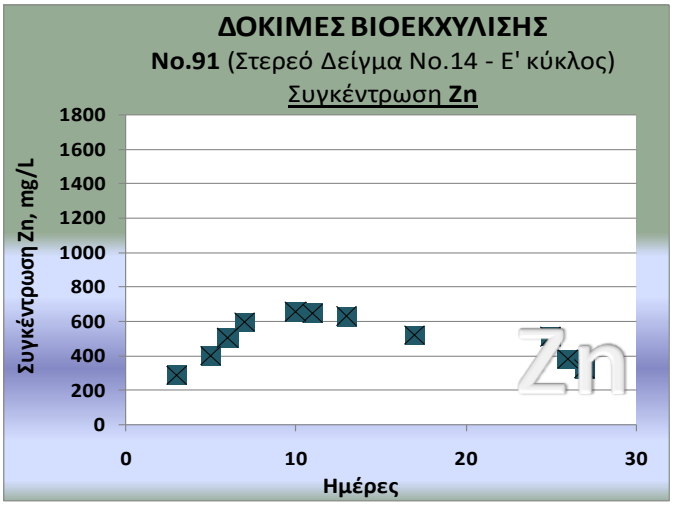
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

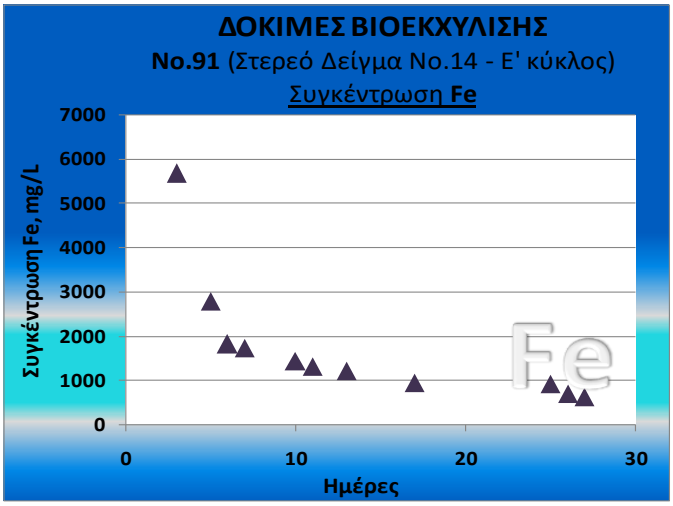
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 2,5%

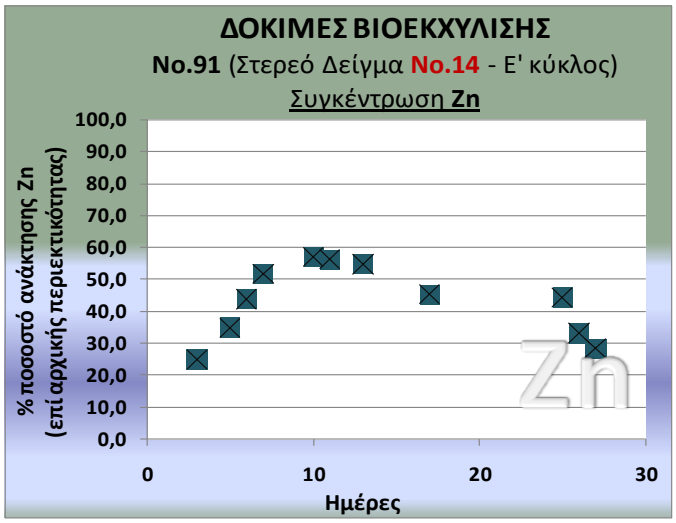
Β' Καλλιέργεια – Ε' Μεταφορά







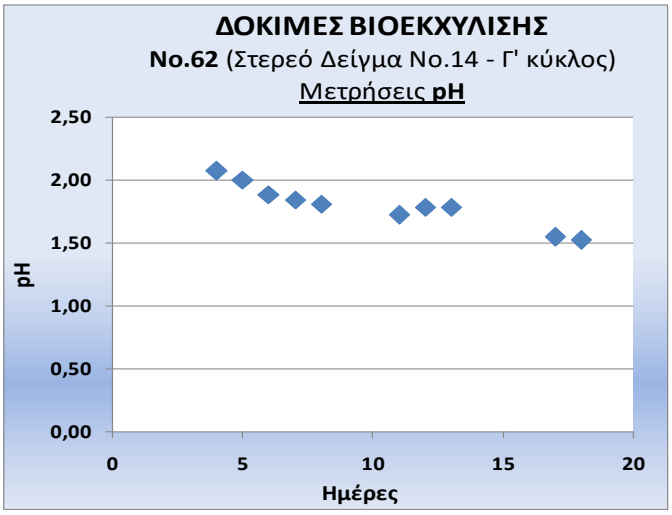


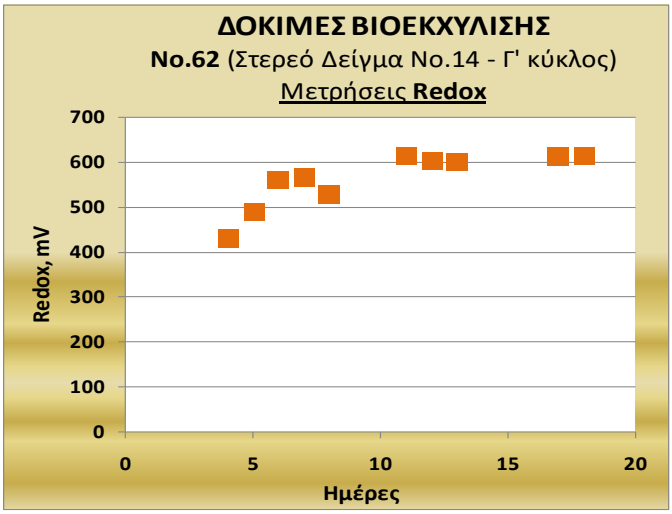


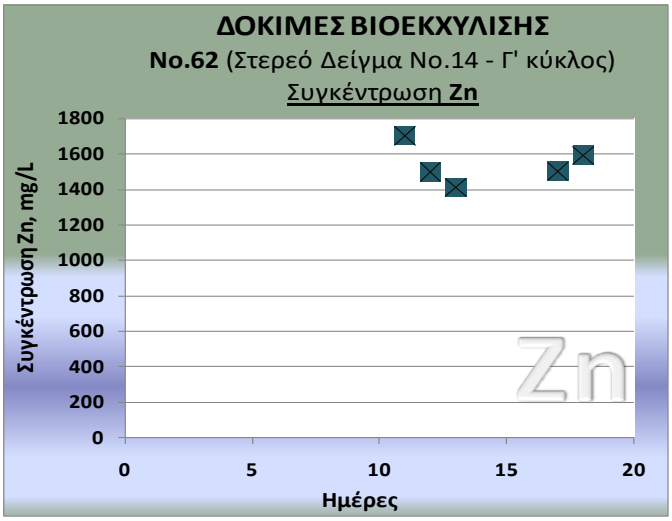
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

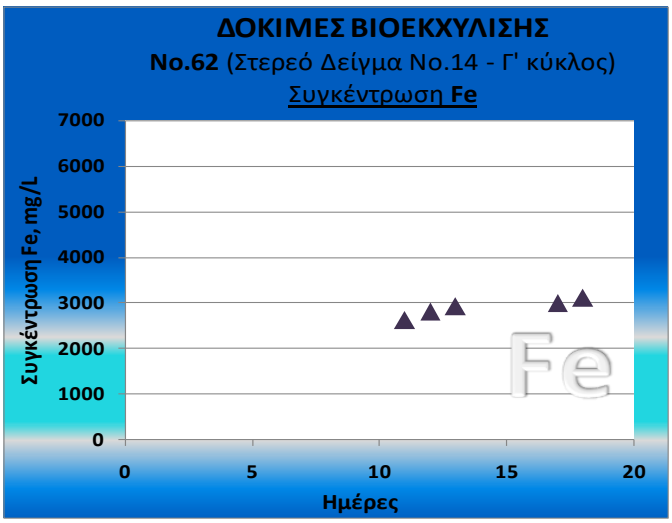
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

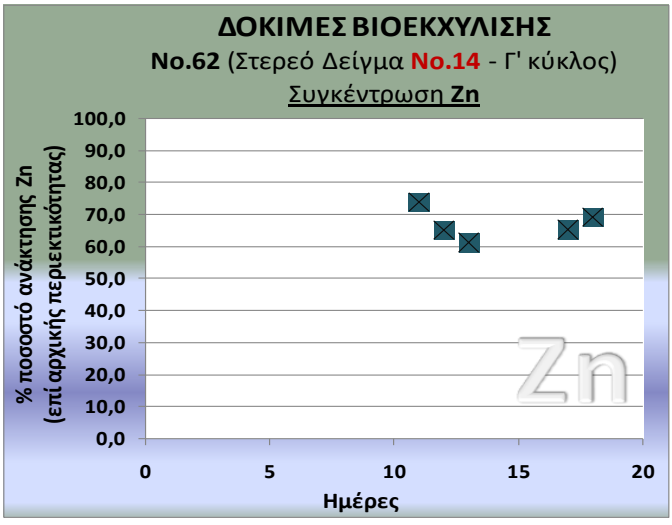
Α' Καλλιέργεια – Γ' Μεταφορά







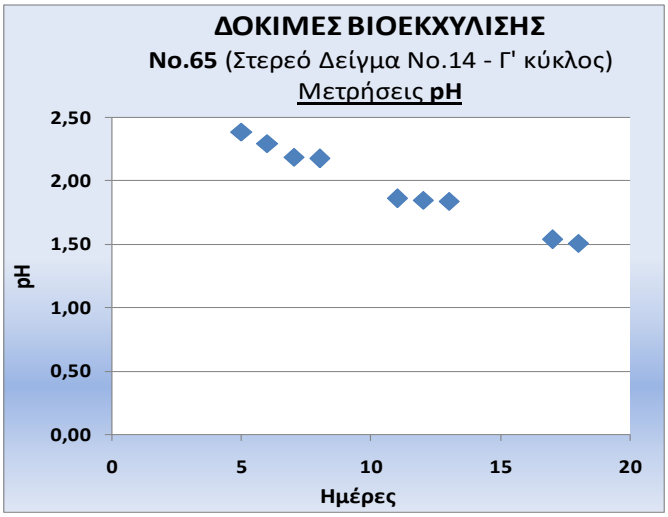


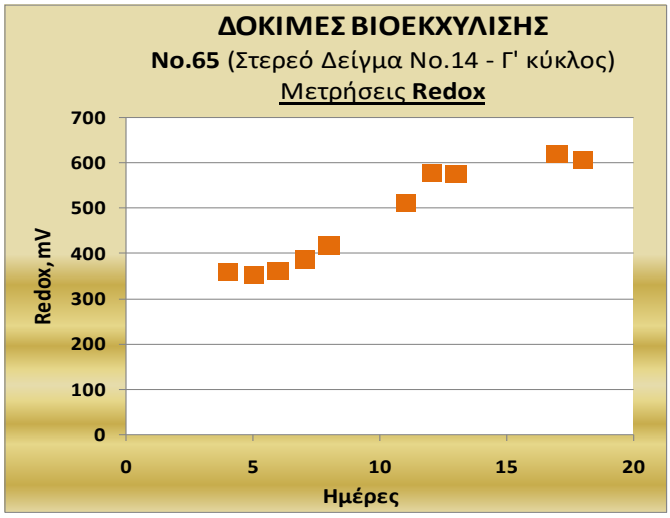


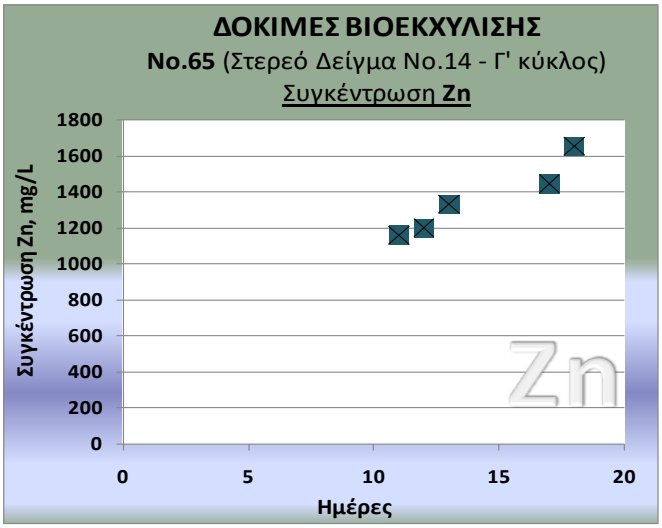
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

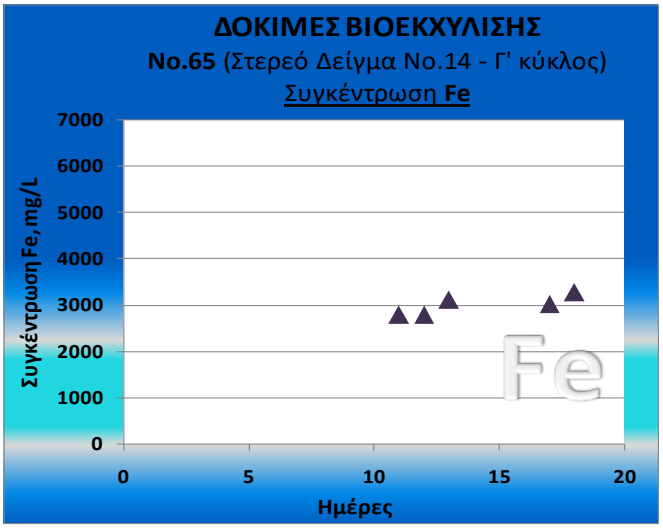
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

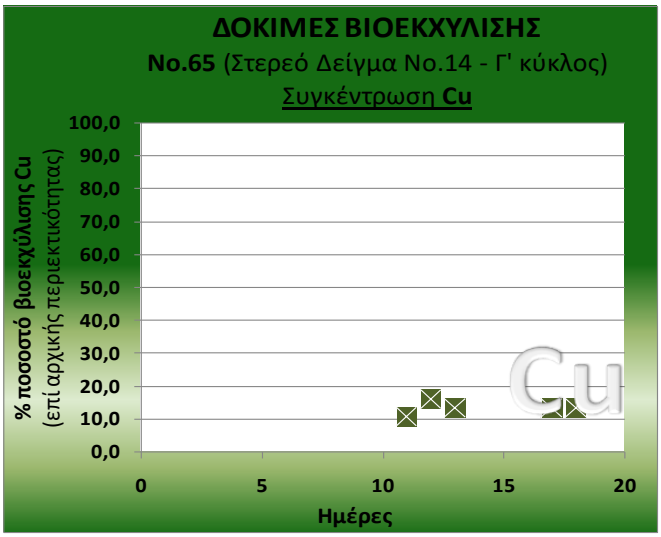
Β' Καλλιέργεια – Γ' Μεταφορά







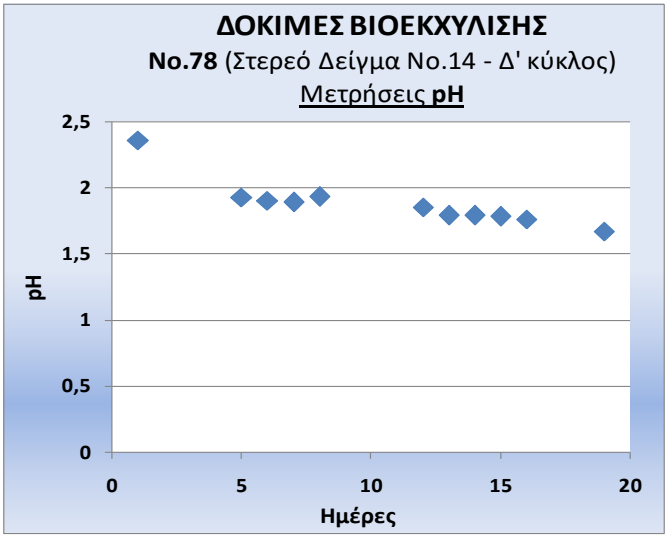


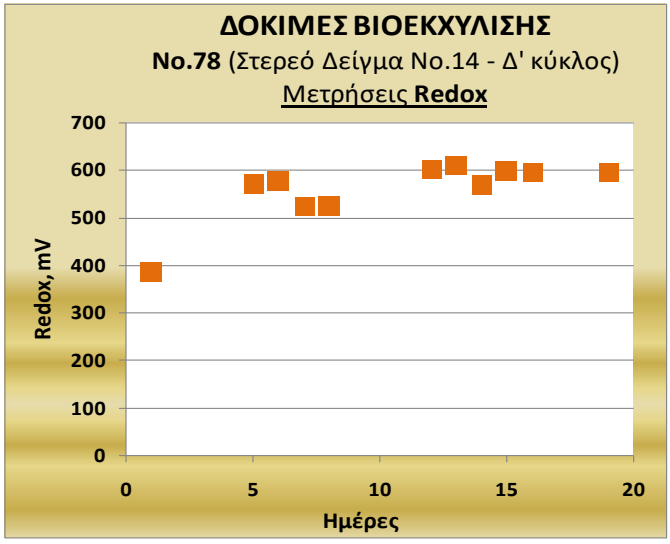


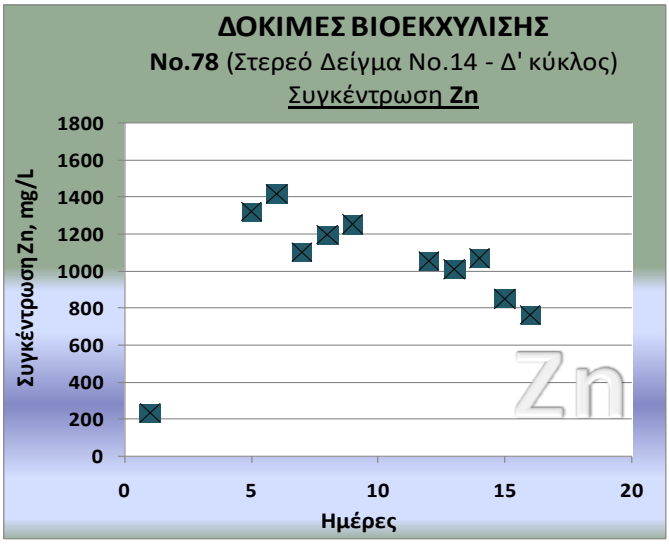
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

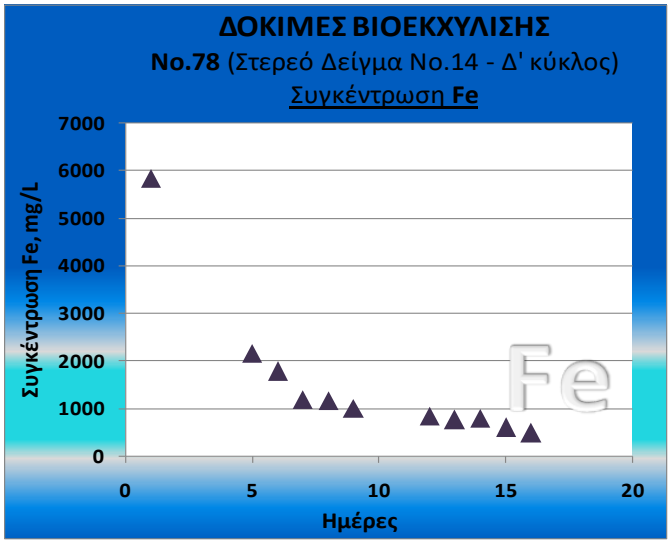
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

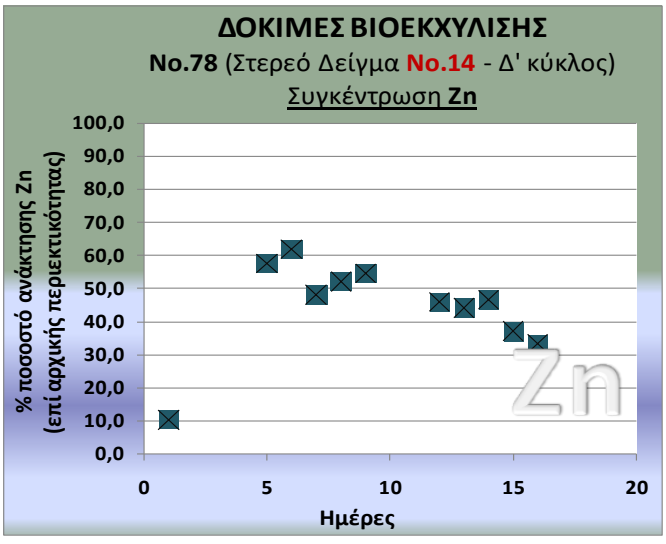
Α' Καλλιέργεια – Δ' Μεταφορά







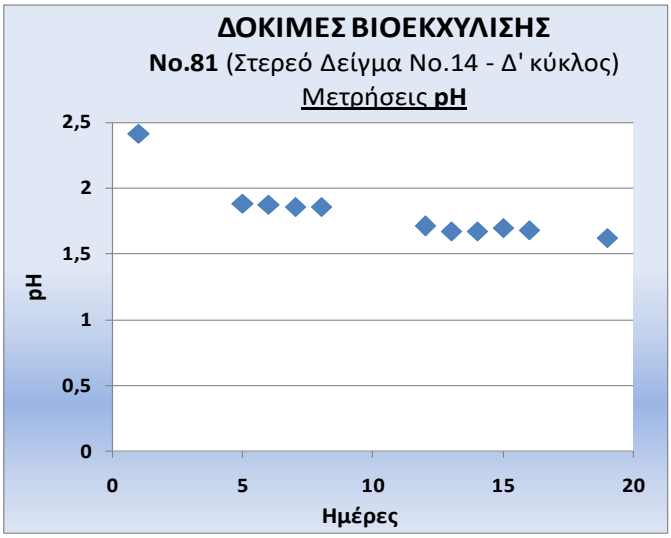


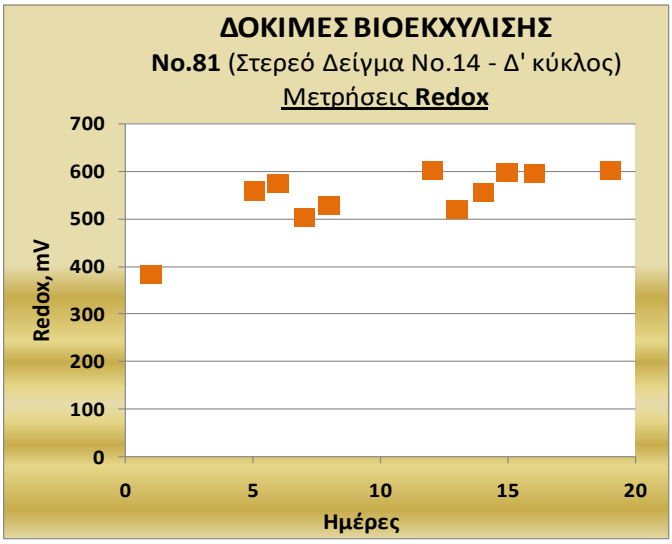


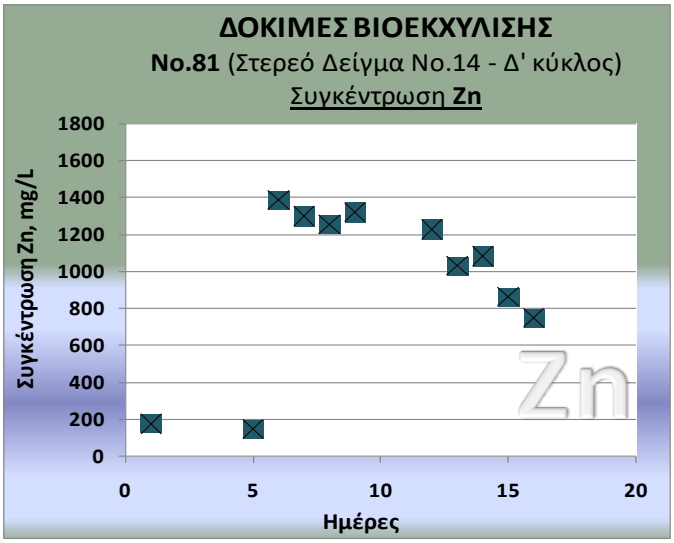
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

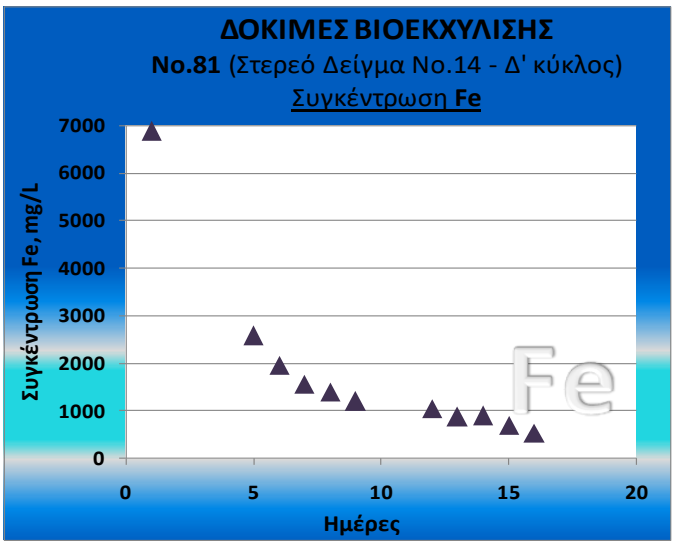
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

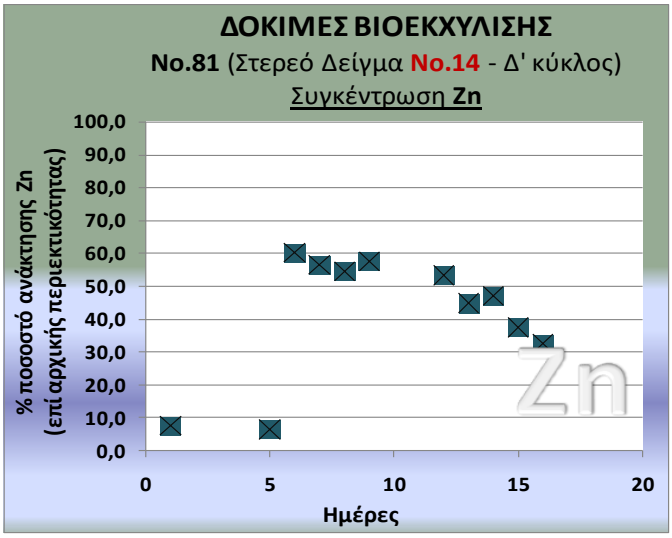
Β' Καλλιέργεια – Δ' Μεταφορά







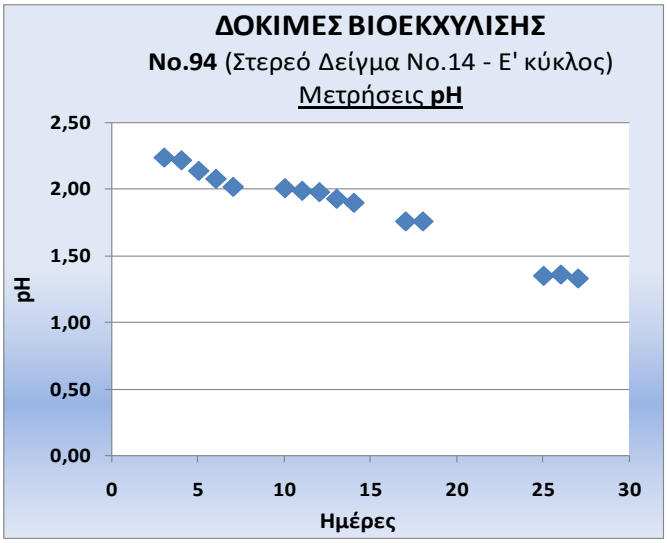


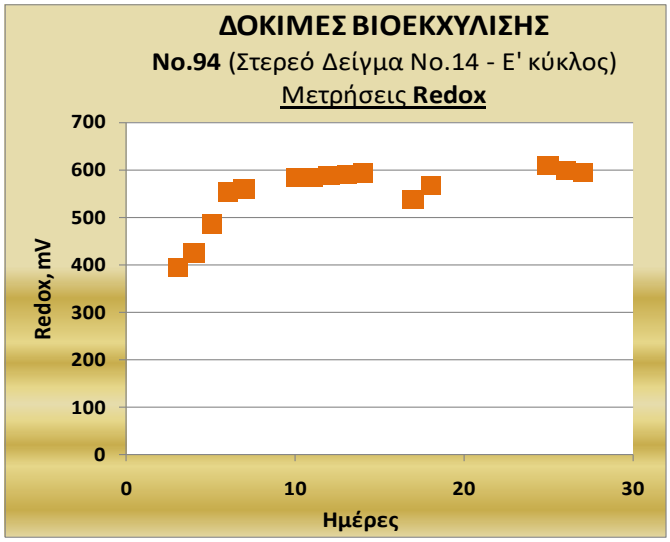


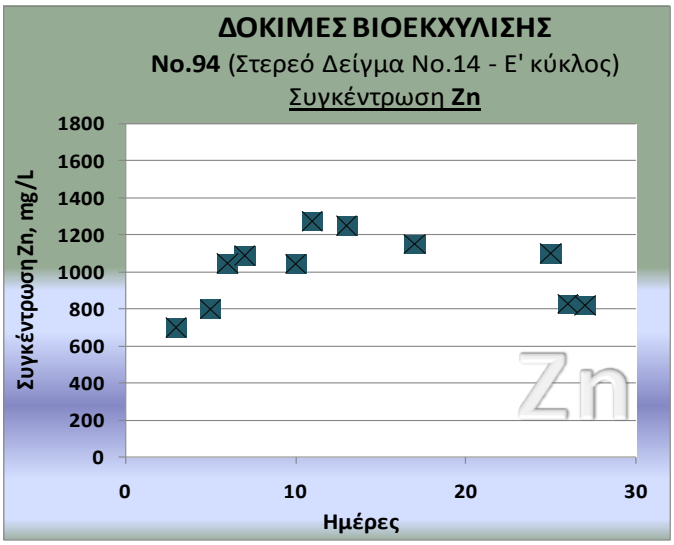
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

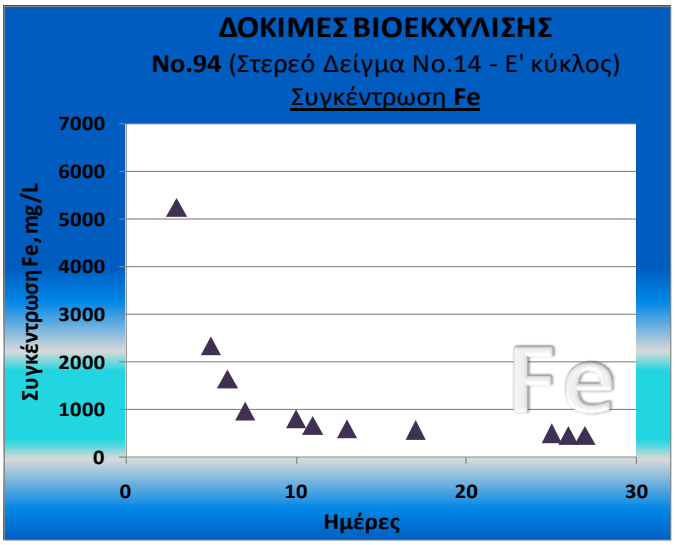
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

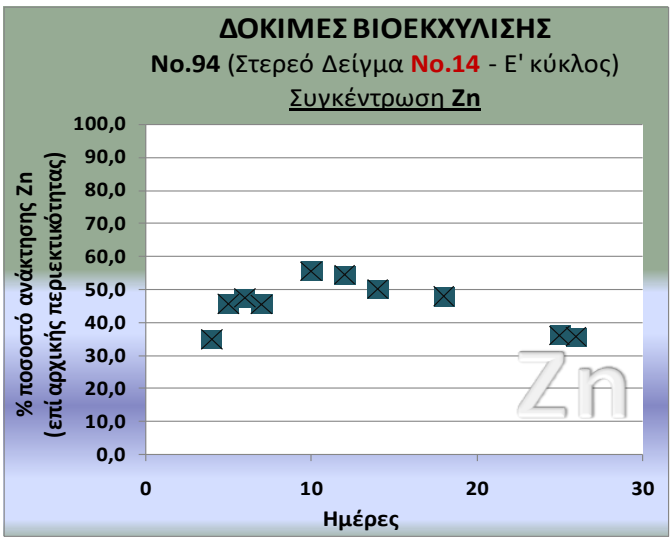
Α' Καλλιέργεια – Ε' Μεταφορά







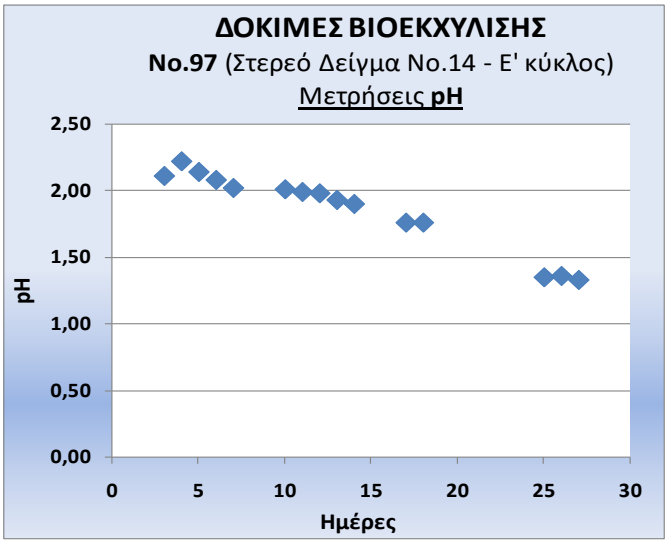


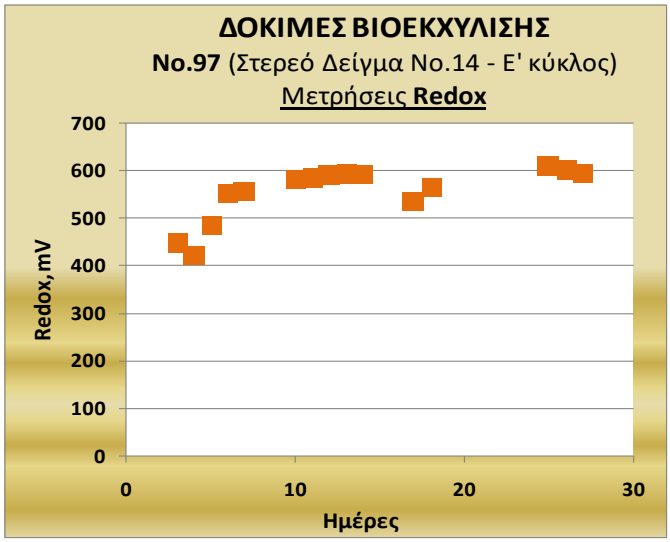


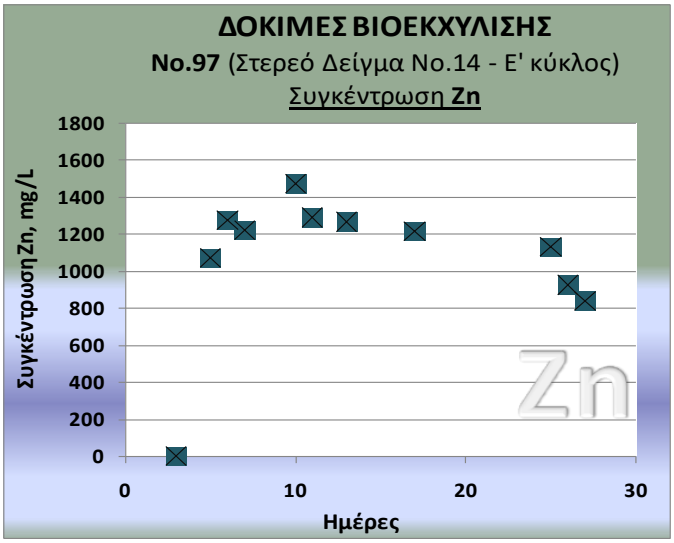
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

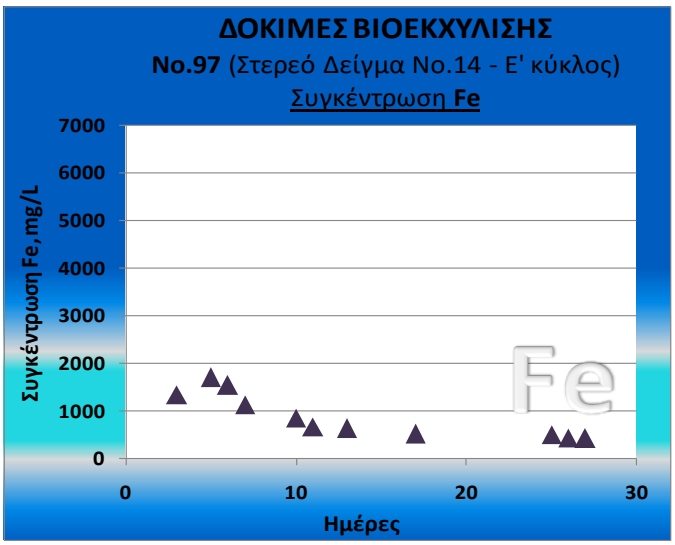
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

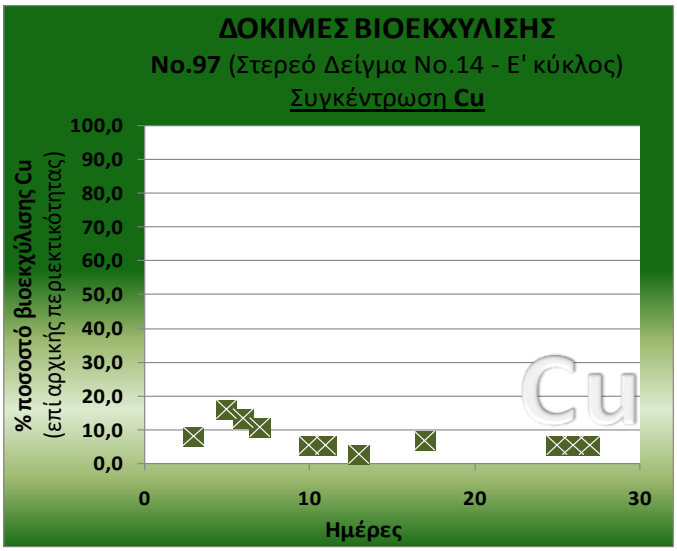
Β' Καλλιέργεια – Ε' Μεταφορά

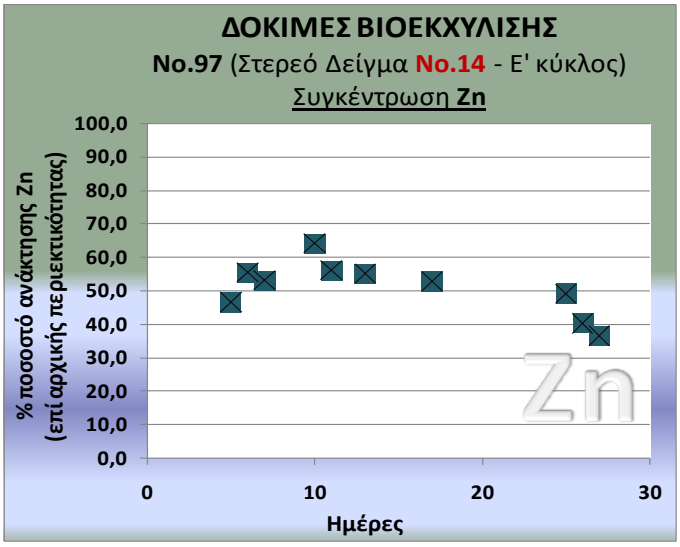

ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ
No.97 (Στερεό Δείγμα No.14 - Ε' κύκλος)
Μετρήσεις pH
pH
Ημέρες


ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ
No.97 (Στερεό Δείγμα No.14 - Ε' κύκλος)
Μετρήσεις Redox
Redox, mV
Ημέρες


ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ
No.97 (Στερεό Δείγμα No.14 - Ε' κύκλος)
Συγκέντρωση Zn
Συγκέντρωση Zn, mg/L
Zn
Ημέρες


ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ
No.97 (Στερεό Δείγμα No.14 - Ε' κύκλος)
Συγκέντρωση Fe
Συγκέντρωση Fe, mg/L
Fe
Ημέρες


ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ
No.97 (Στερεό Δείγμα No.14 - Ε' κύκλος)
Συγκέντρωση Cu
% ποσοστό βιοεκχύλισης Cu
(επί αρχικής περιεκτικότητας)
Cu
Ημέρες

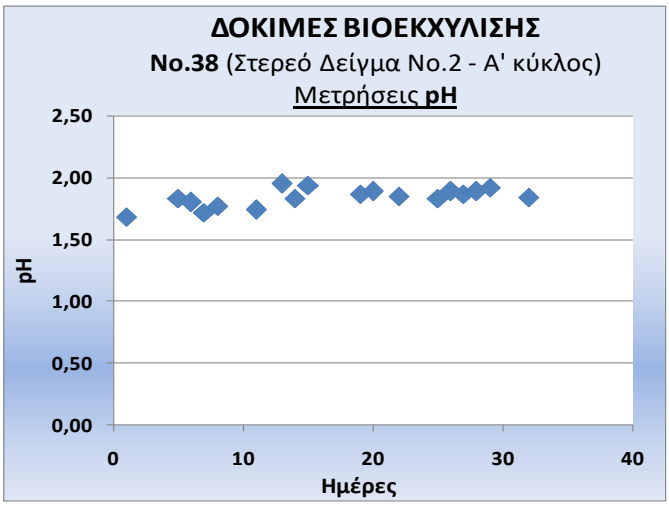

ΔΟΚΙΜΕΣ ΒΙΟΕΚΧΥΛΙΣΗΣ
No.97 (Στερεό Δείγμα No.14 - Ε' κύκλος)
Συγκέντρωση Zn
% ποσοστό ανάκτησης Zn
(επί αρχικής περιεκτικότητας)
Zn
Ημέρες

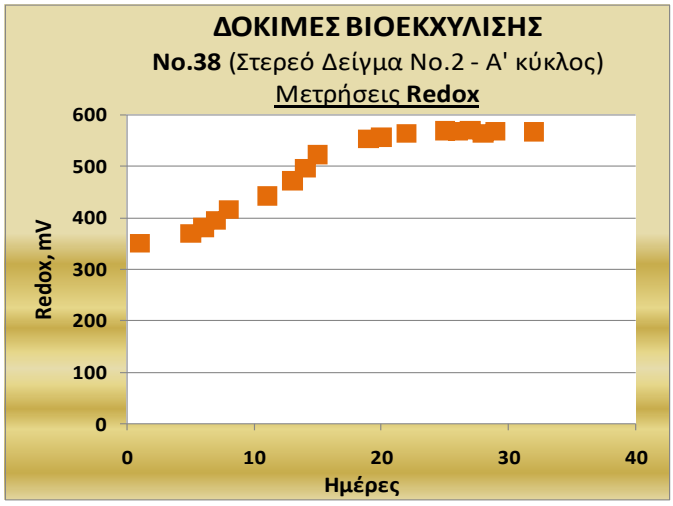
ΔΟΚΙΜΕΣ 2015-2016

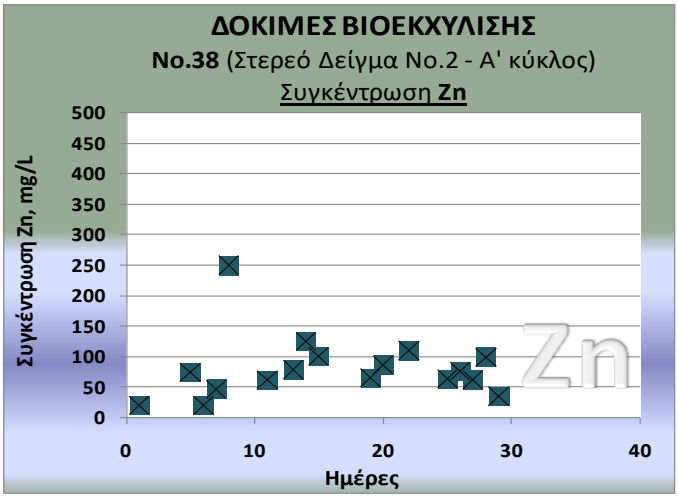
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

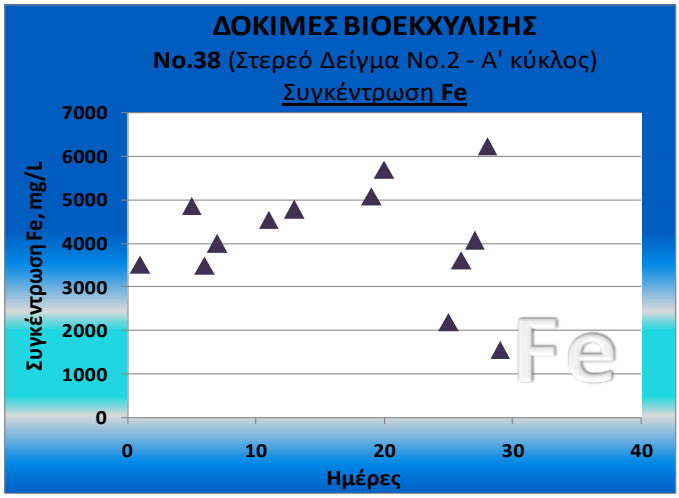
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

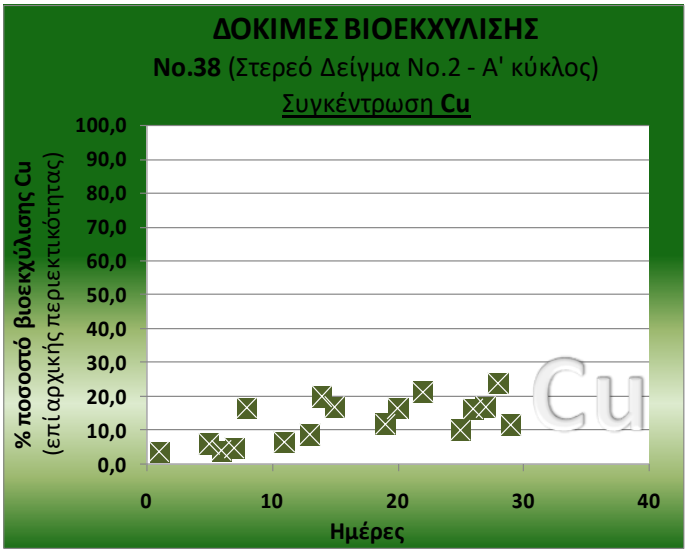
Α' Μεταφορά

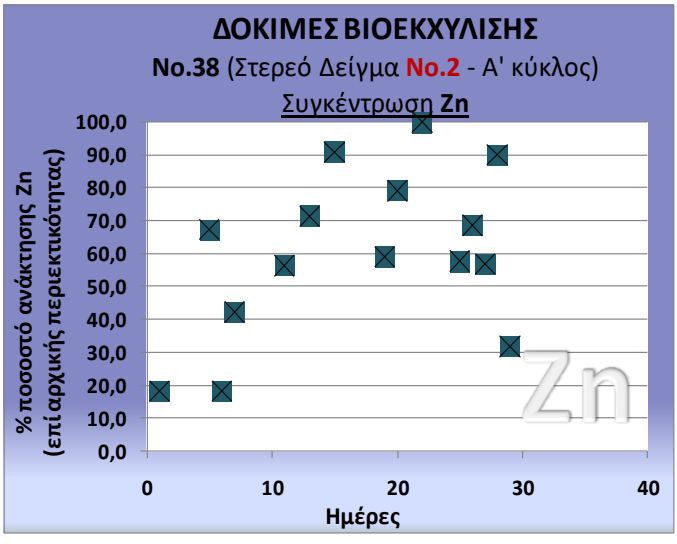








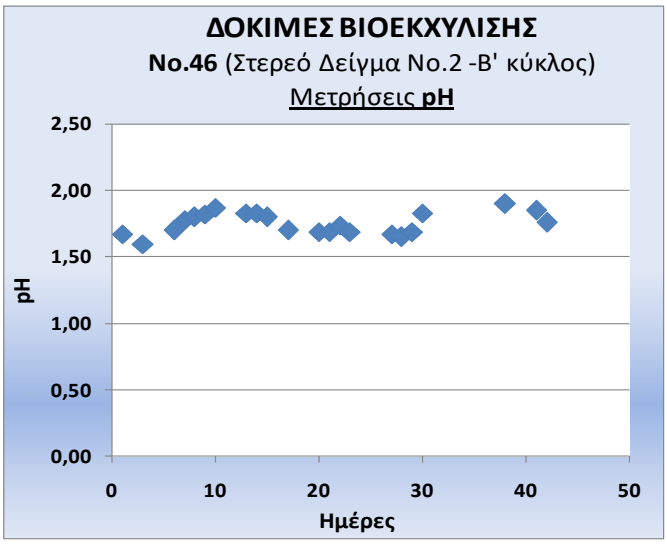


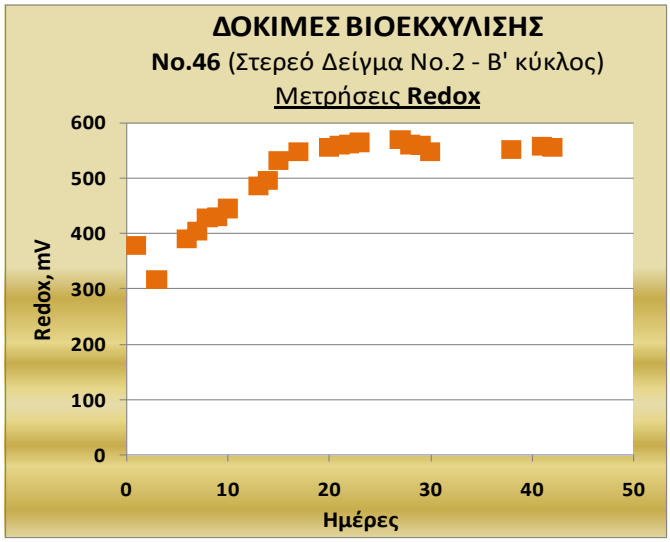


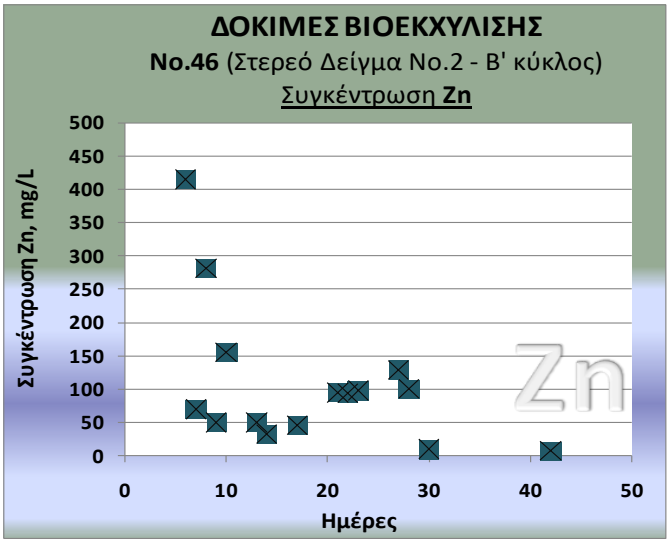
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

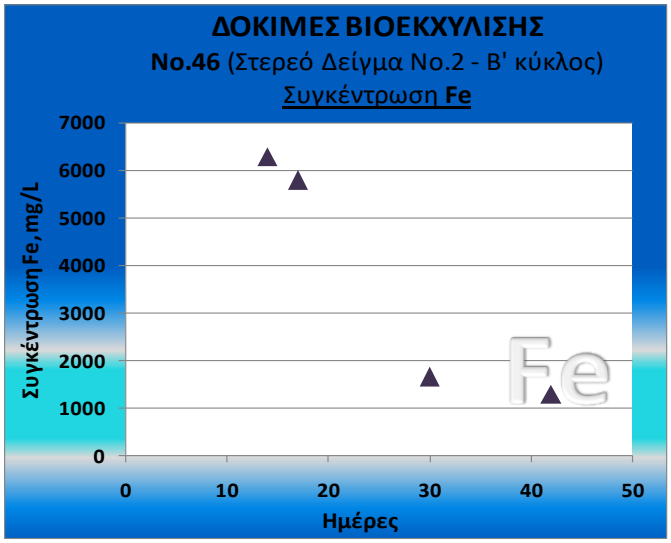
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

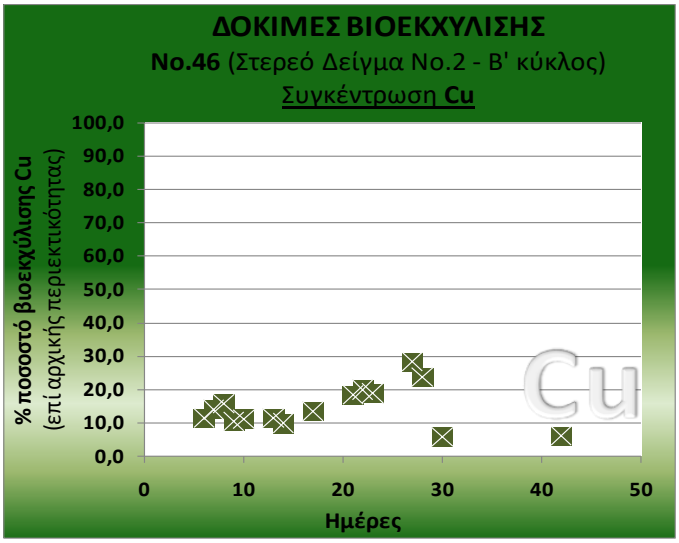
Β' Μεταφορά

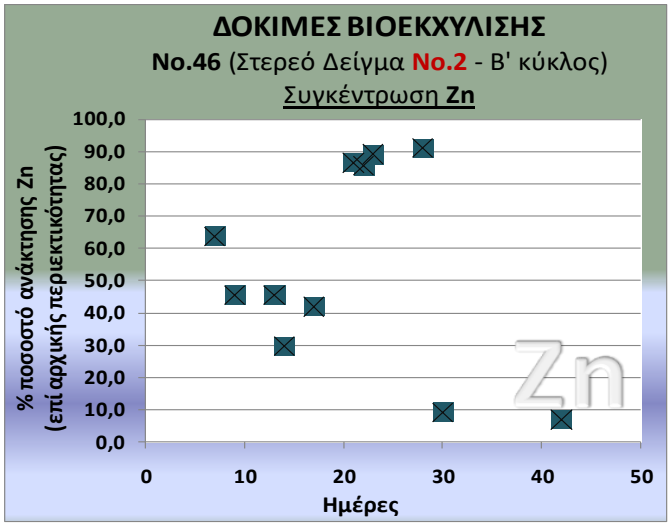








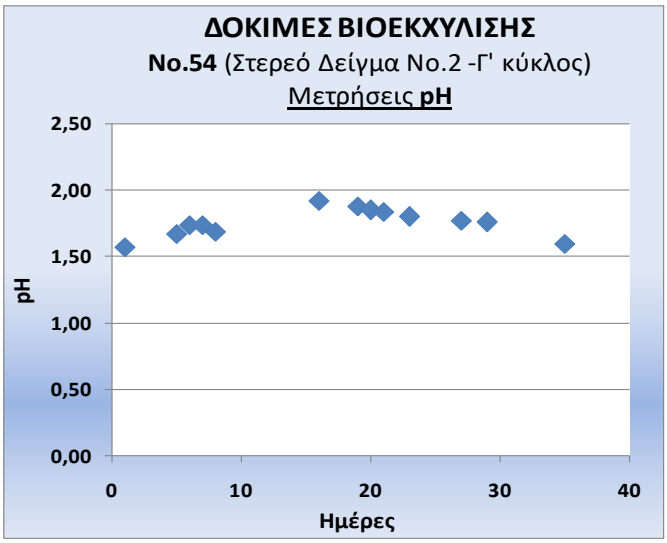


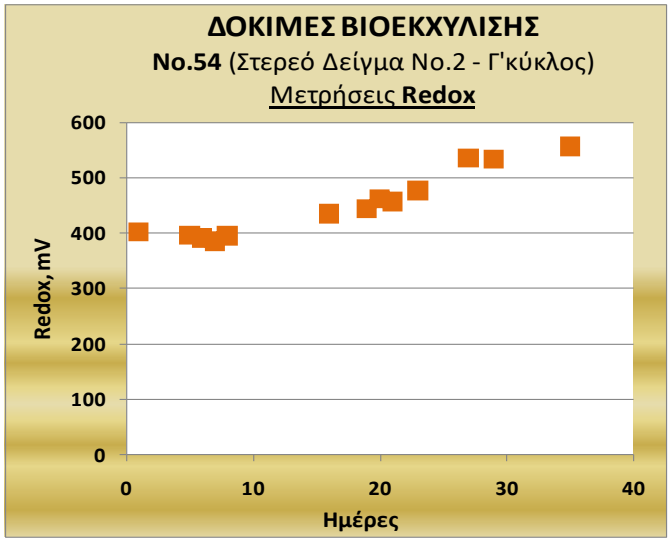


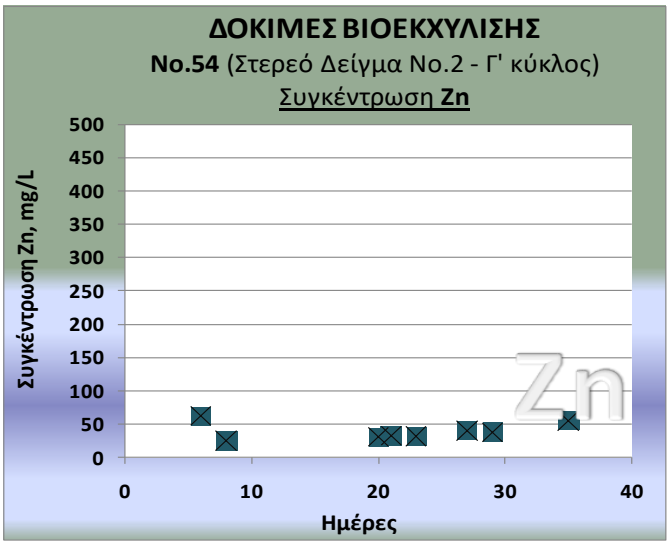
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.2

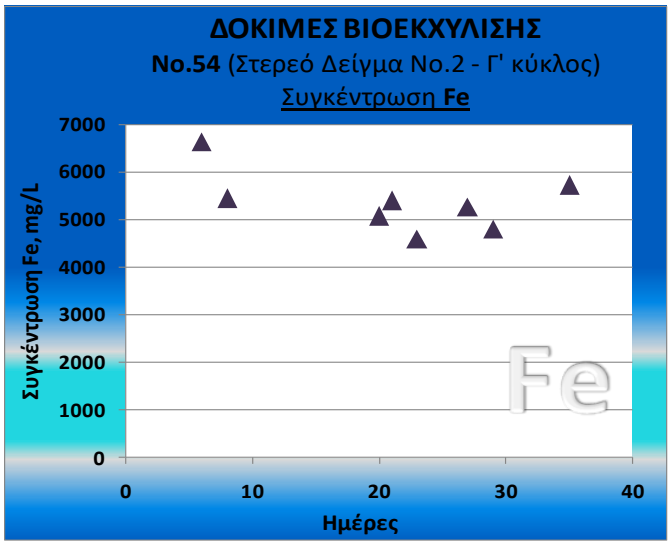
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

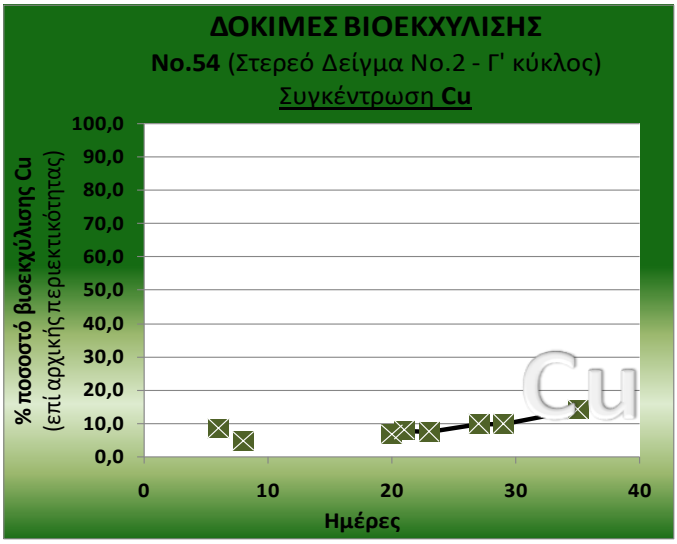
Γ' Μεταφορά

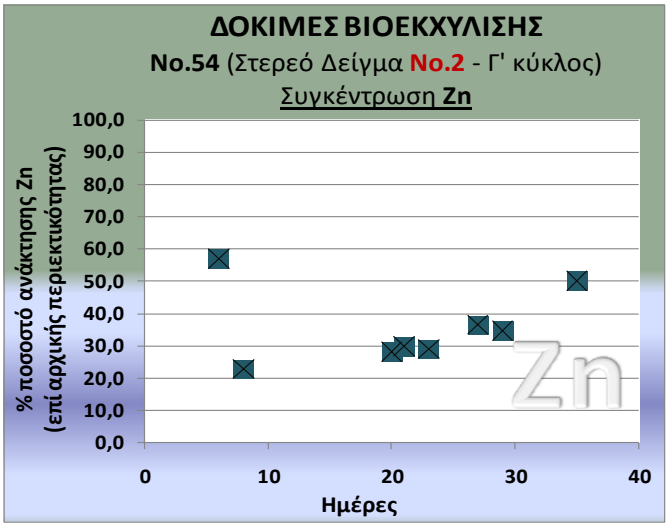








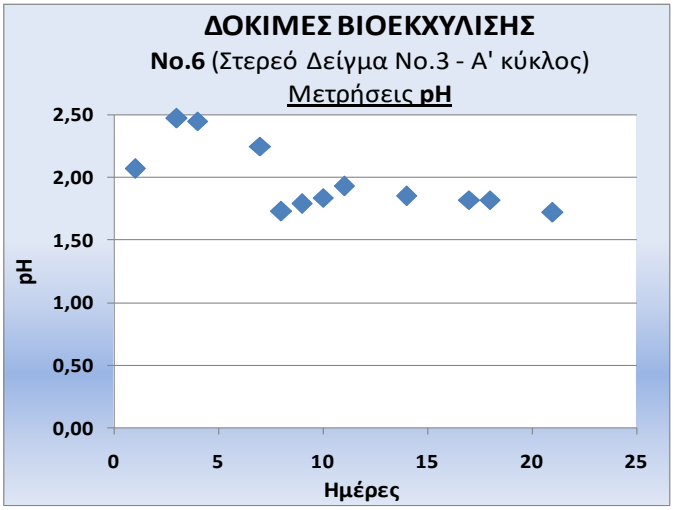


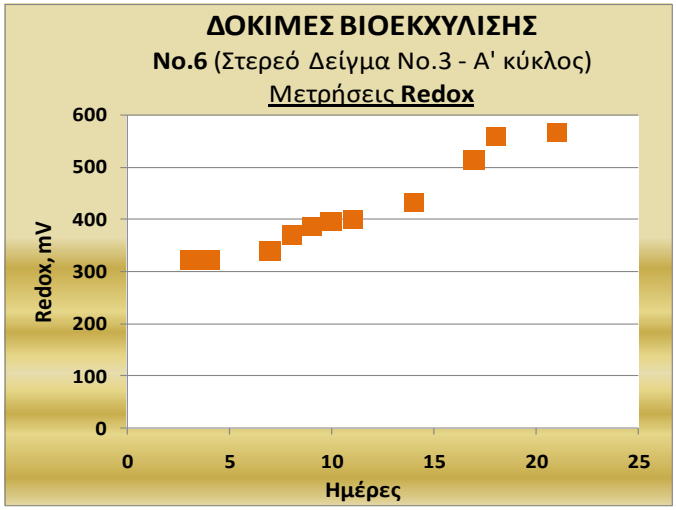


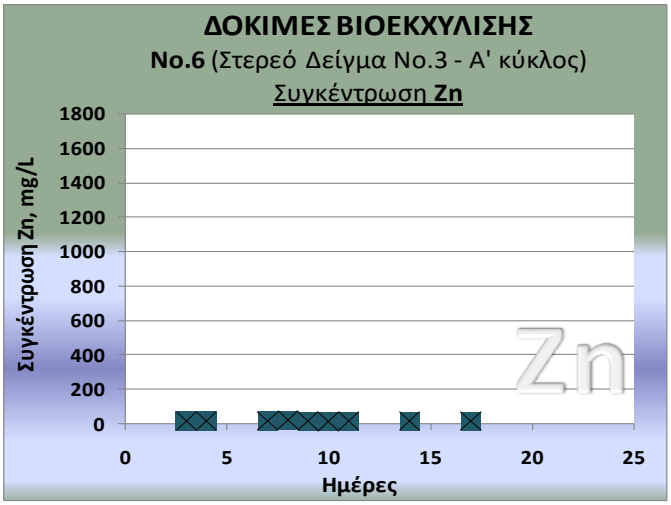
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.3

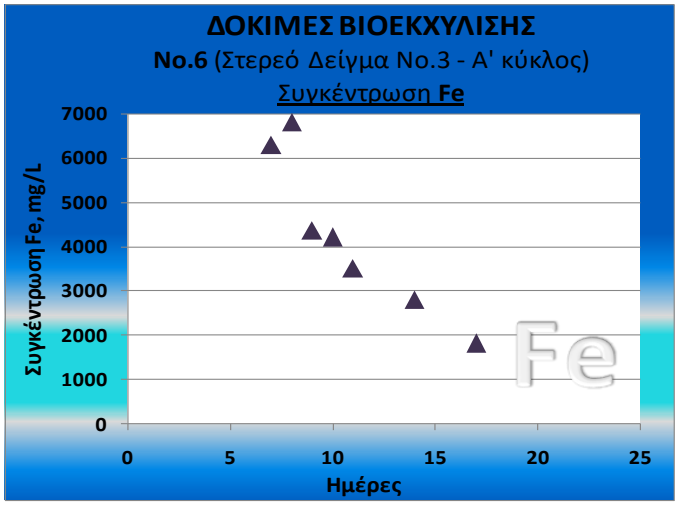
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

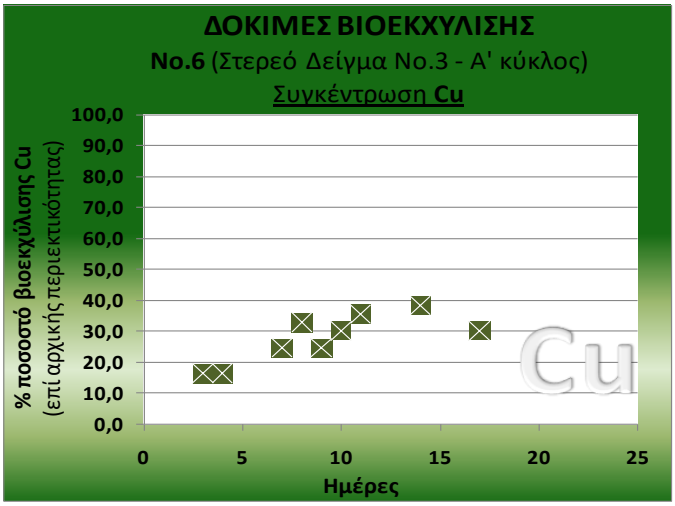
Α' Καλλιέργεια – Α' Μεταφορά

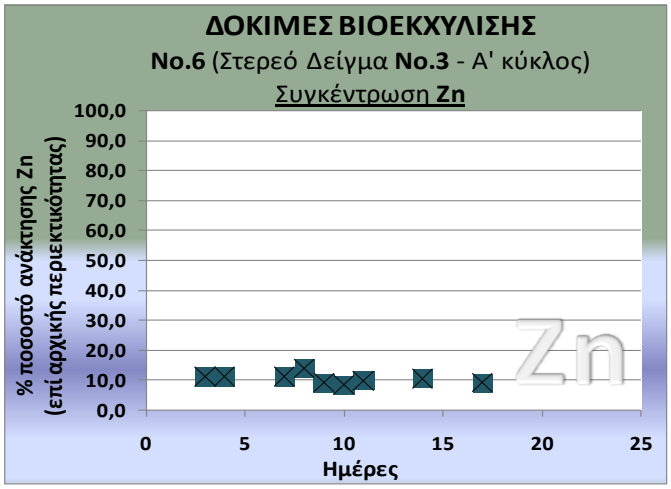






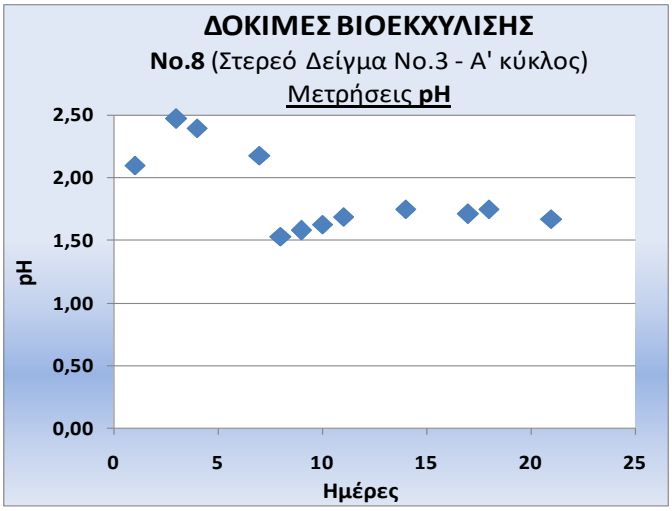


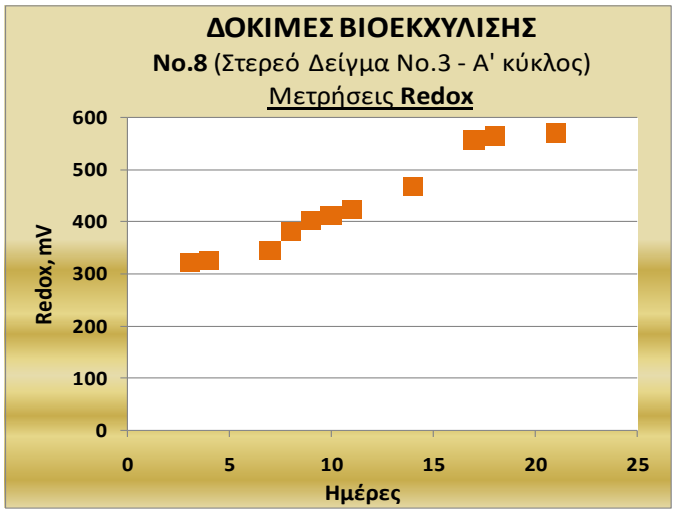


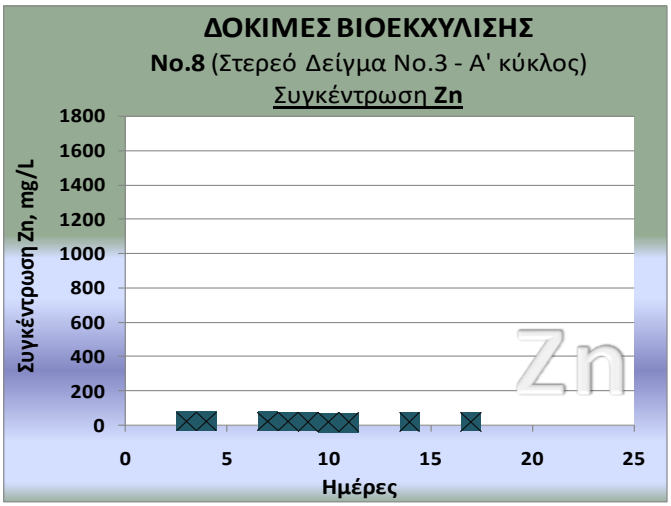


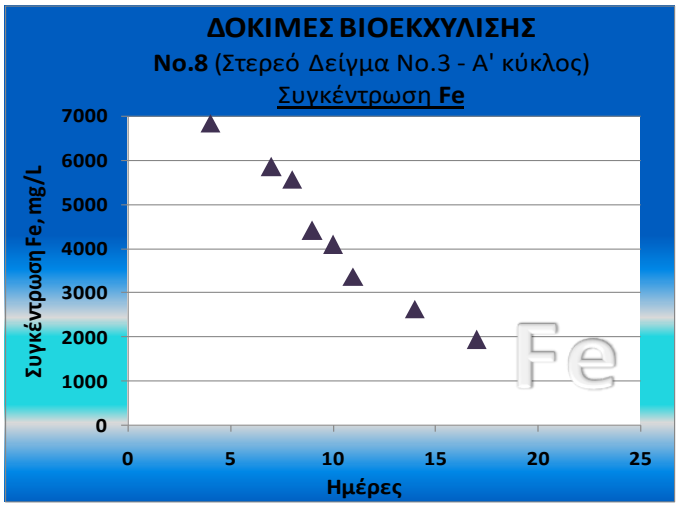
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.3

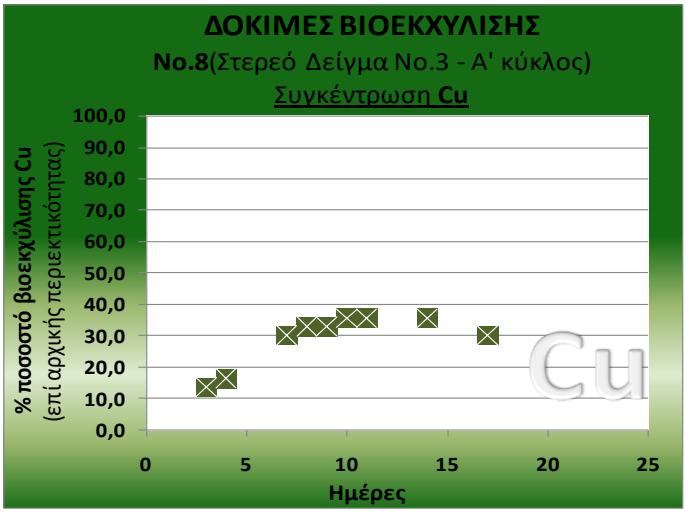
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

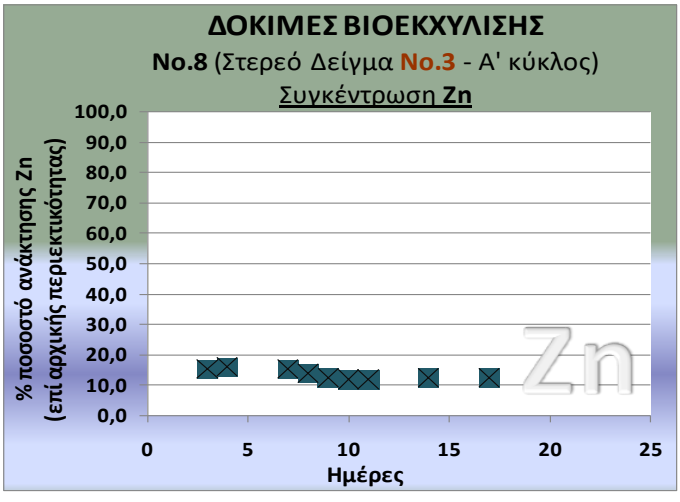






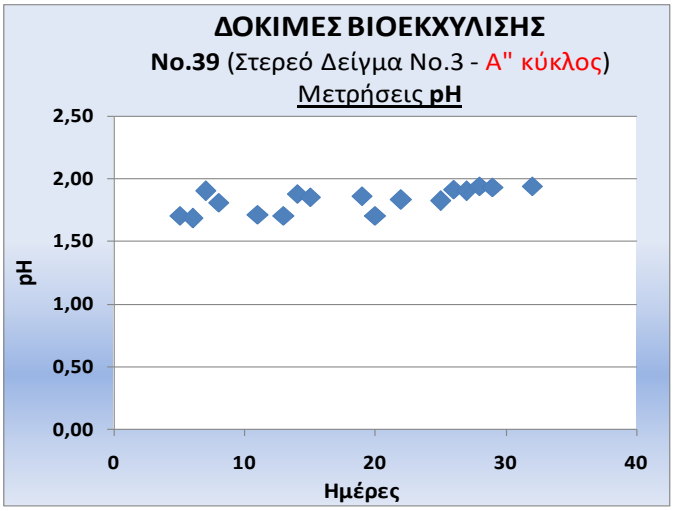


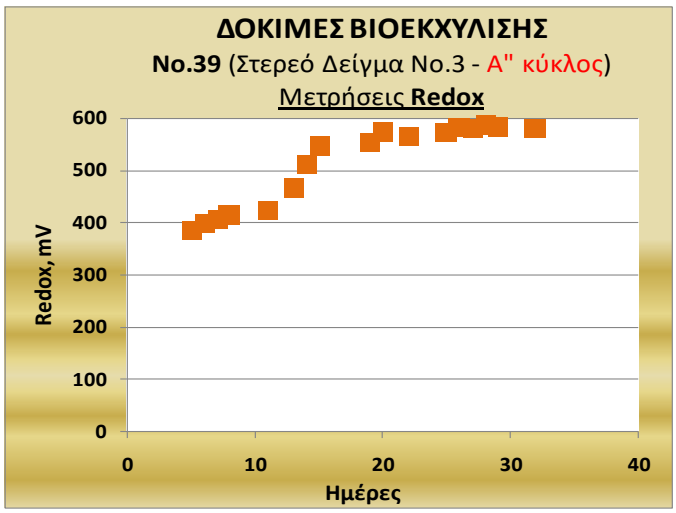


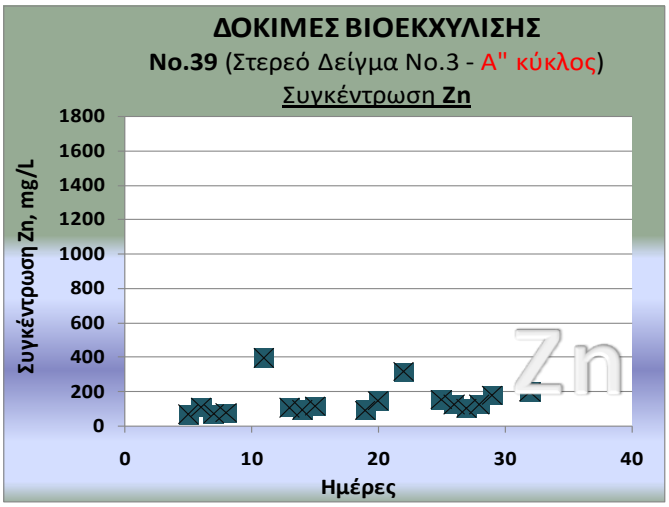


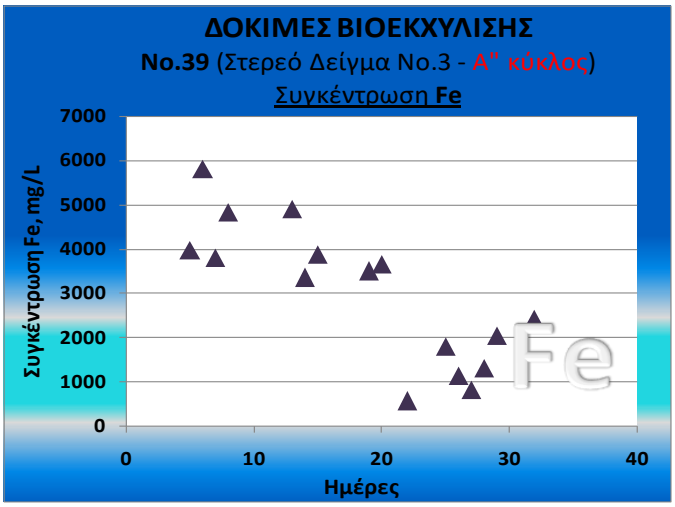
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.3

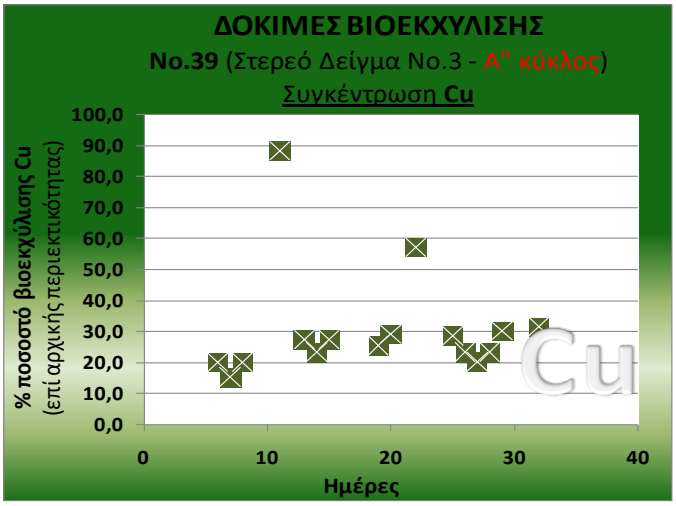
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

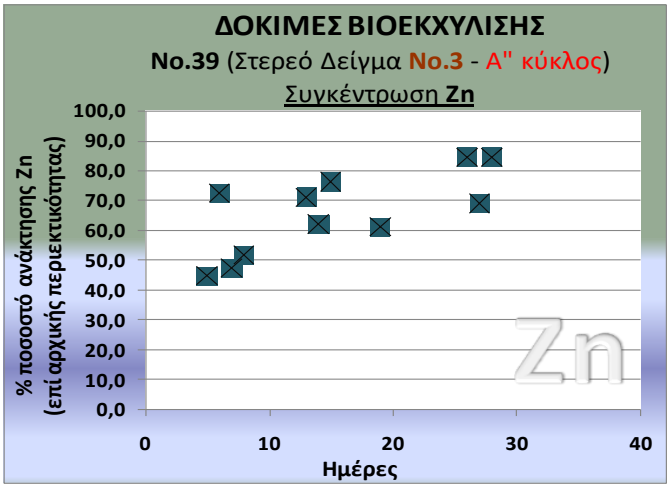








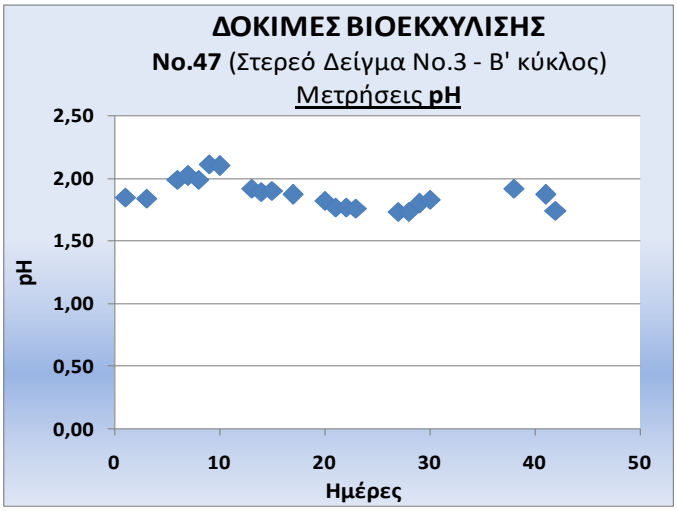


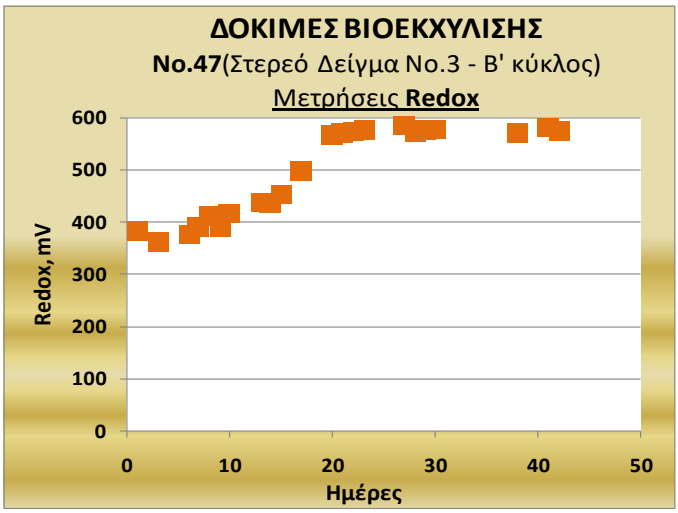


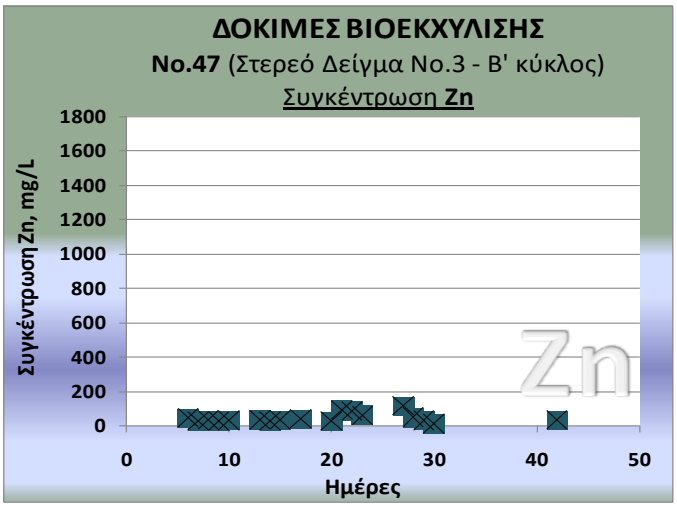
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.3

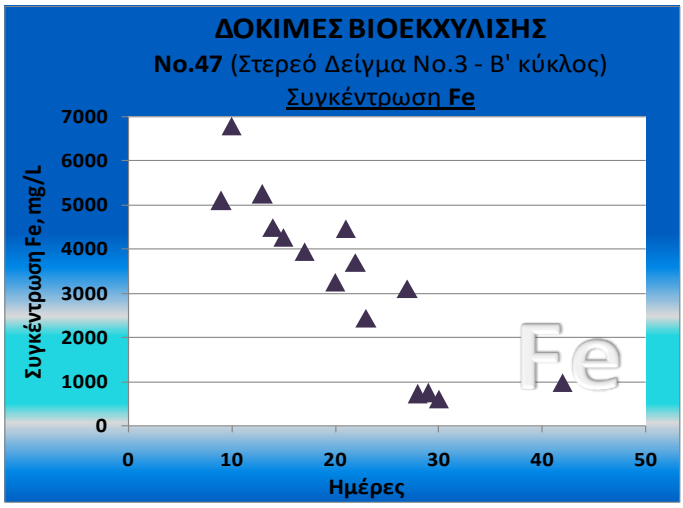
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

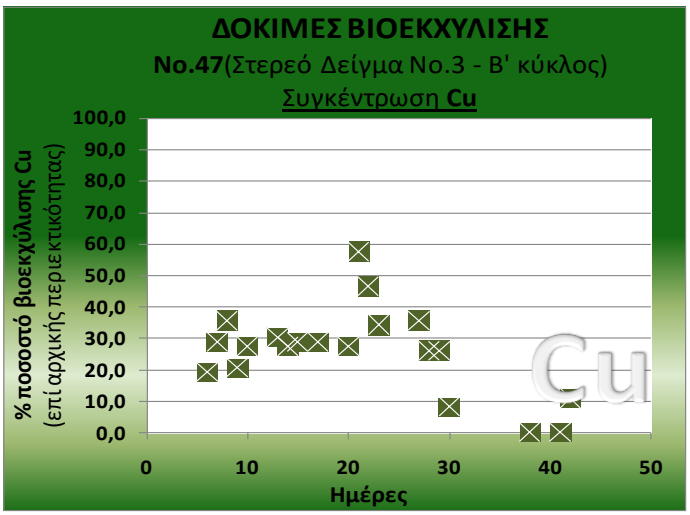
Γ' Καλλιέργεια – Β' Μεταφορά

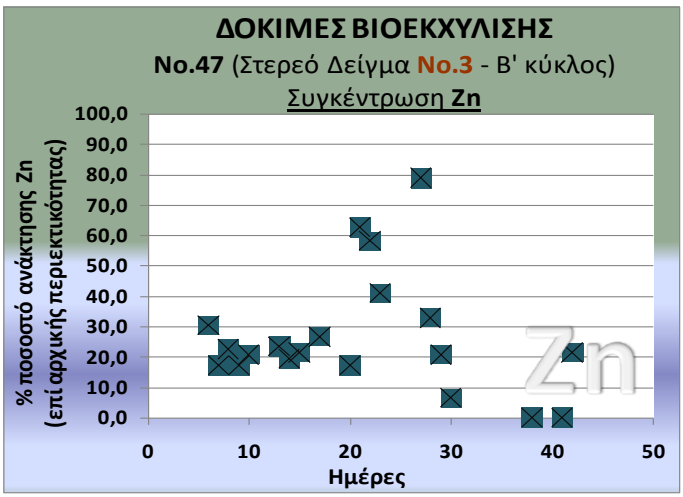








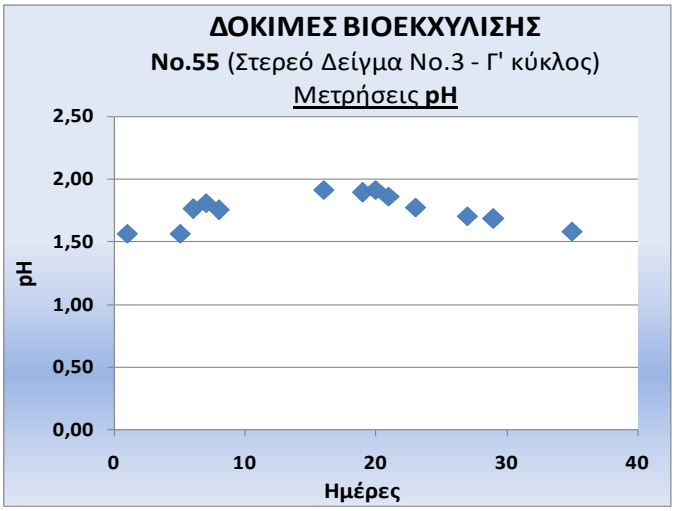


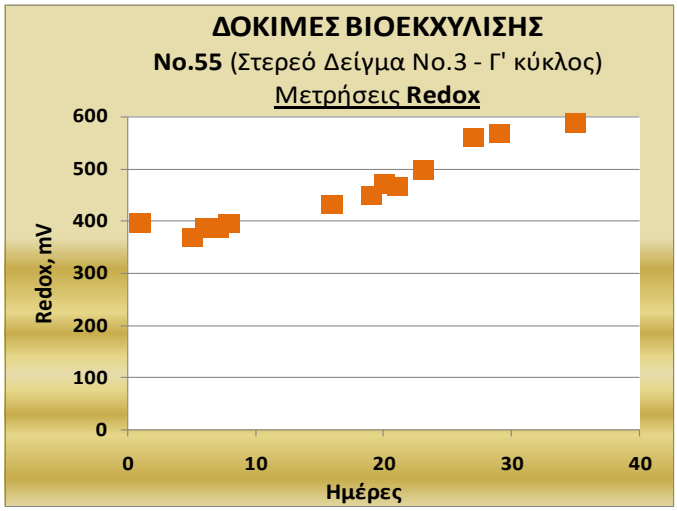


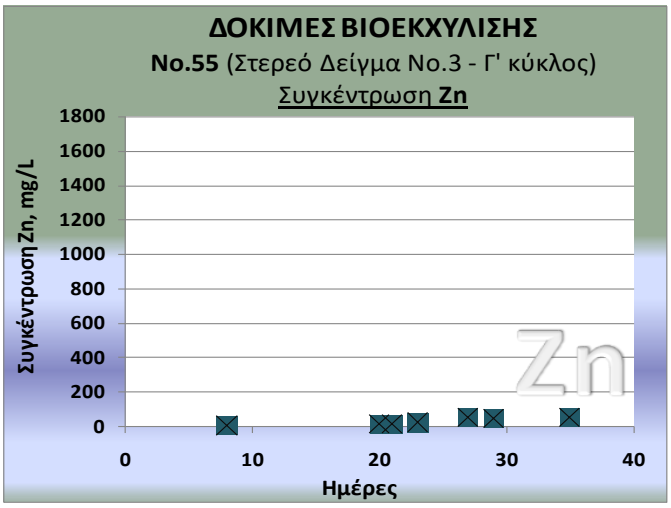
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.3

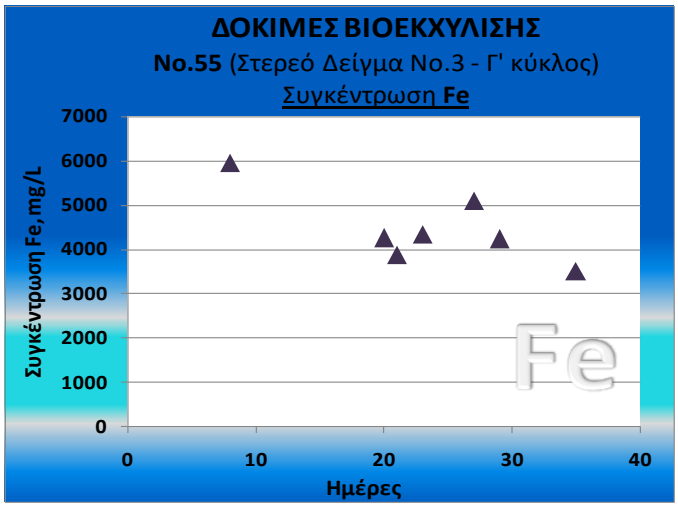
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

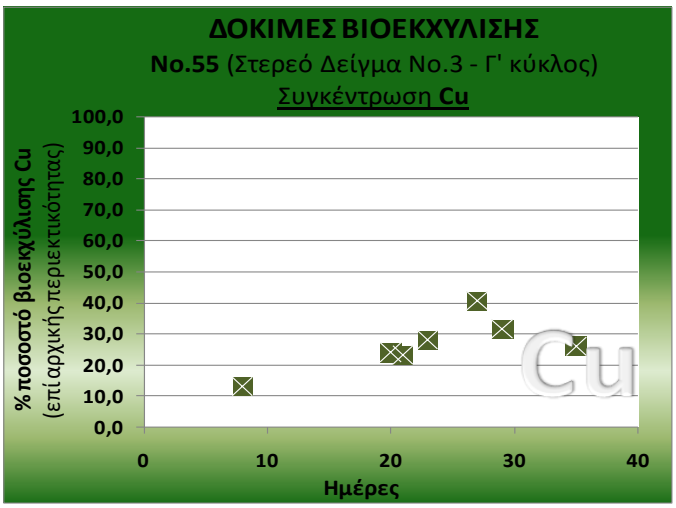
Γ' Καλλιέργεια – Γ' Μεταφορά

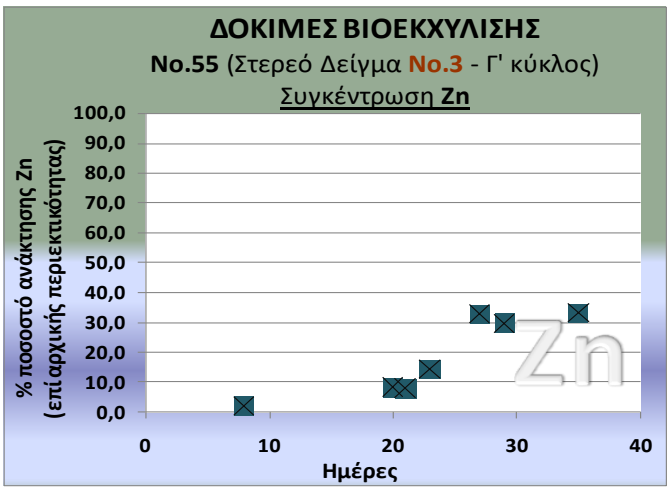








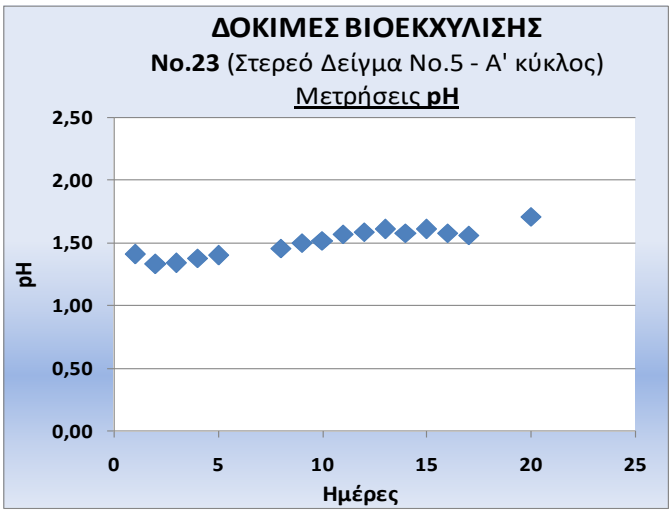


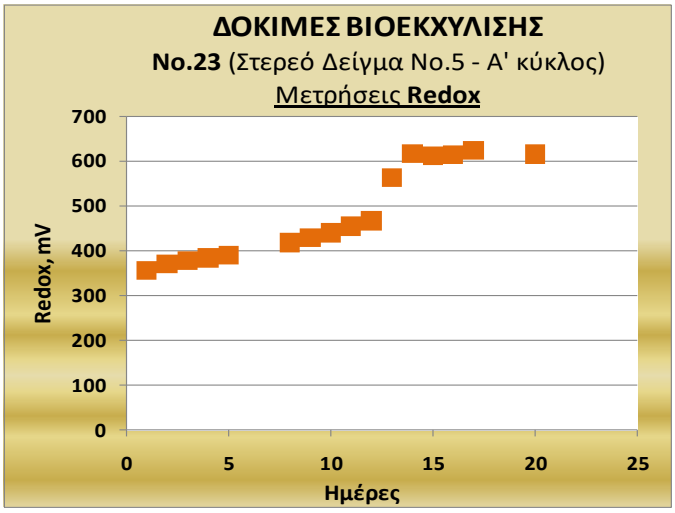


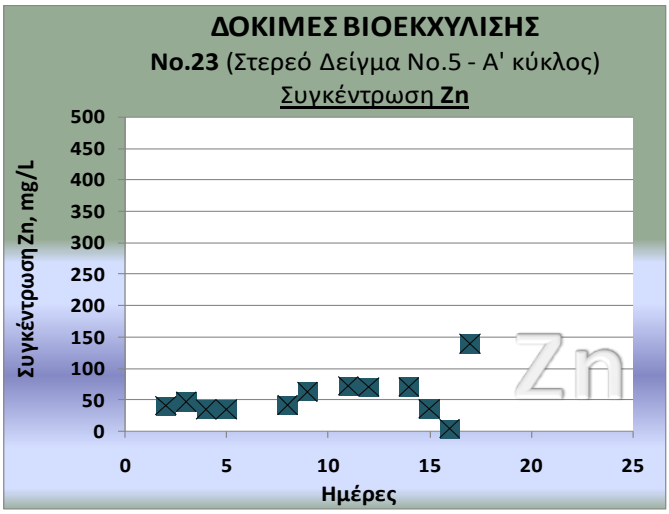
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

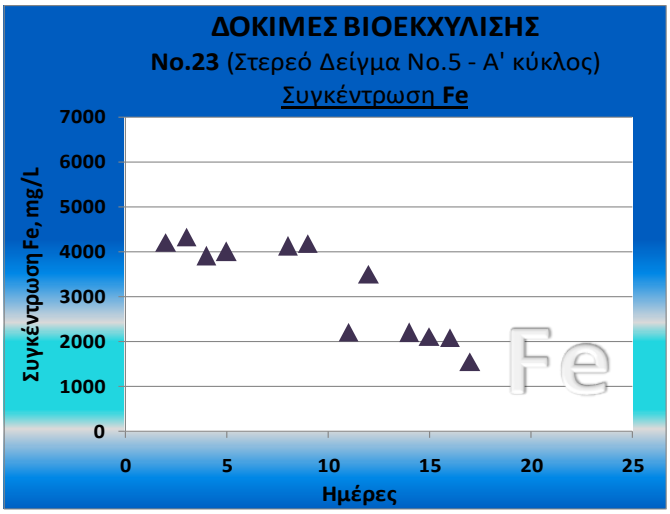
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

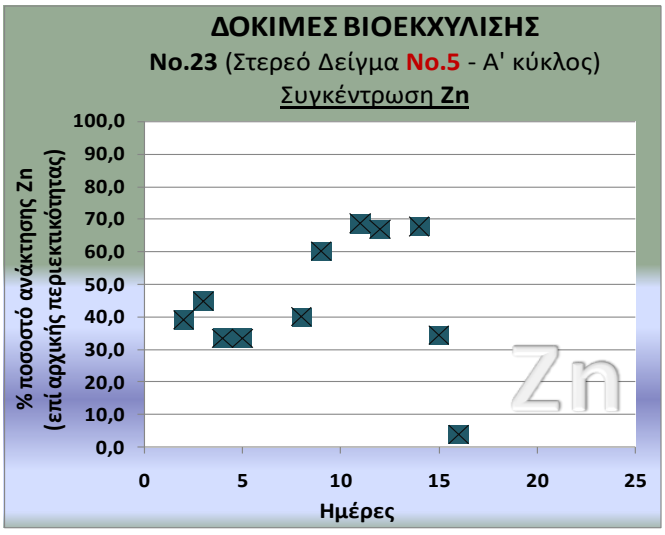
Α' Καλλιέργεια – Α' Μεταφορά







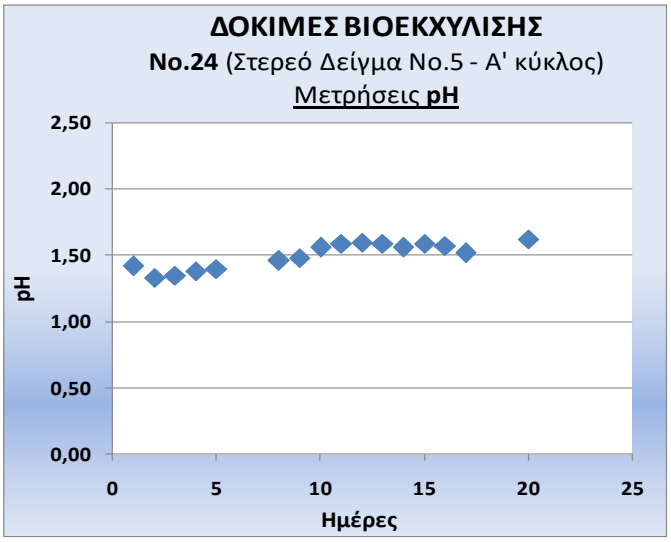


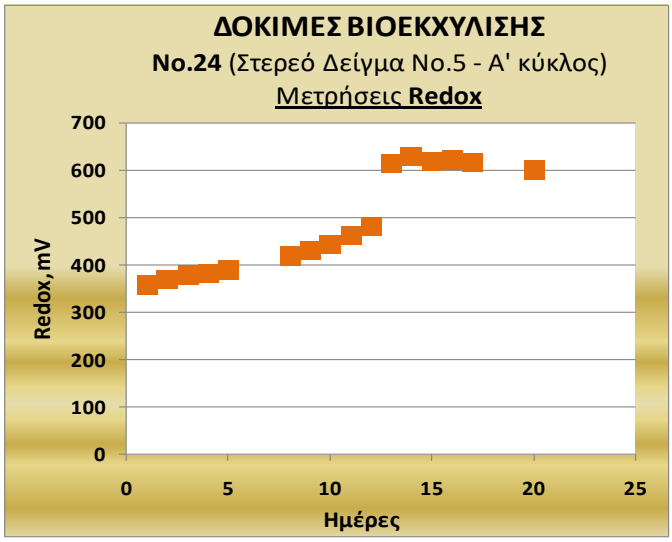


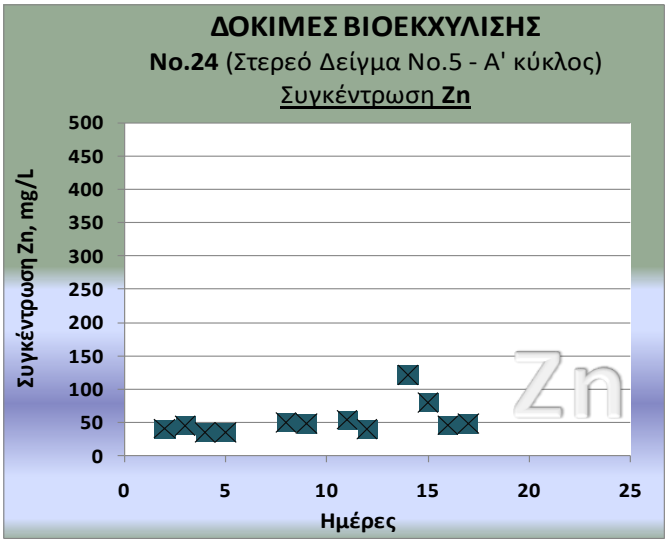
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

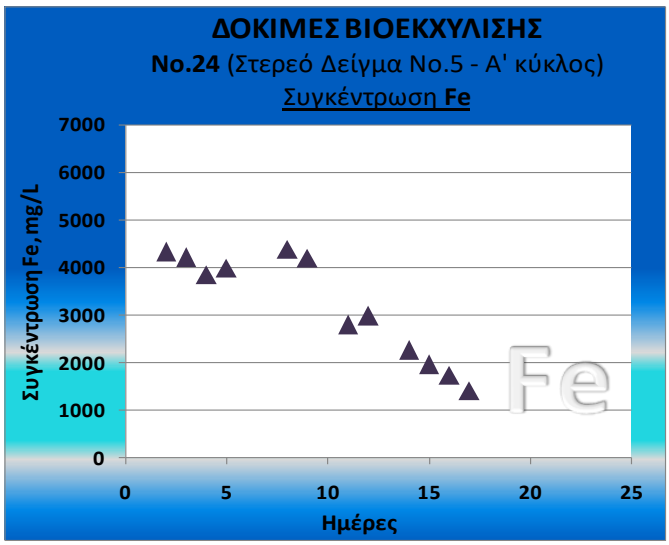
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

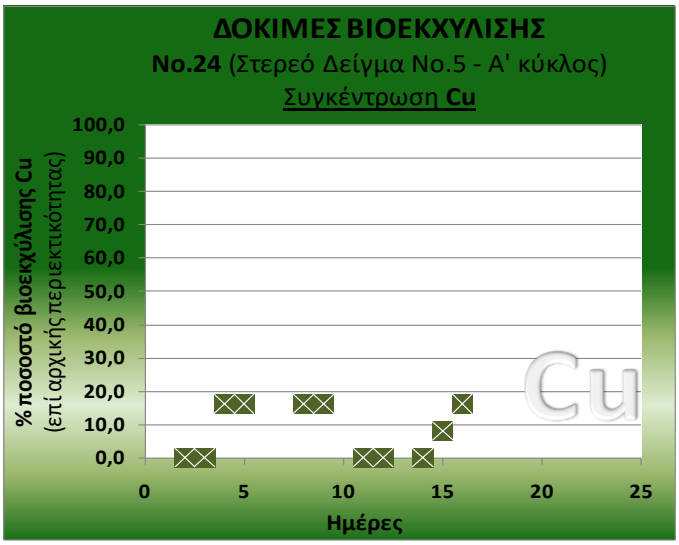
Β' Καλλιέργεια – Α' Μεταφορά

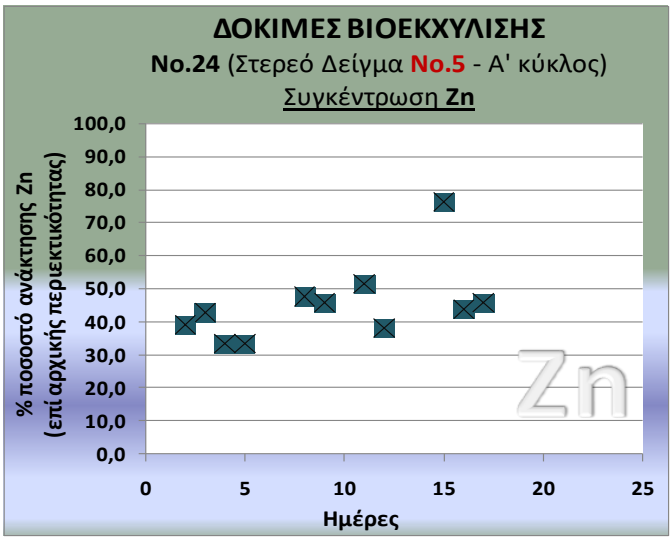








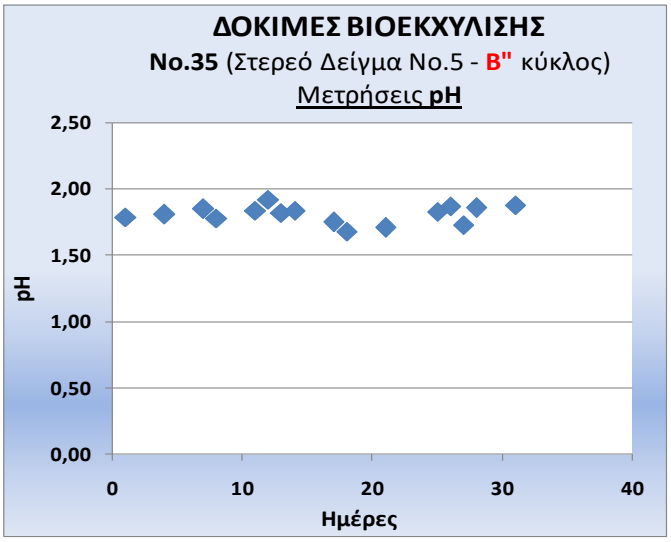


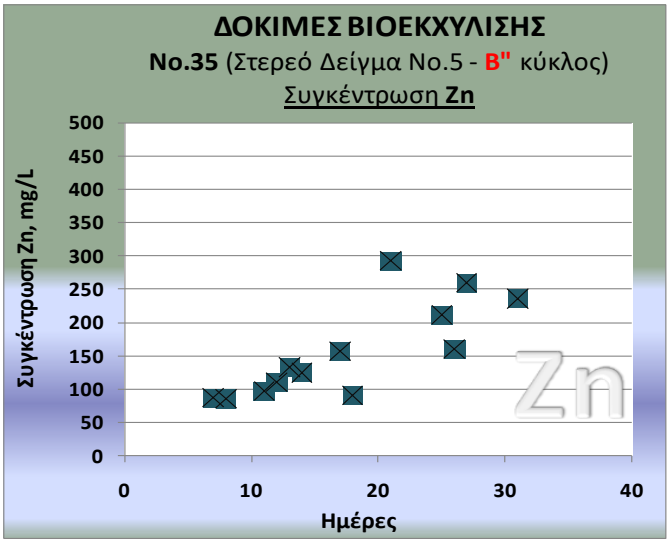


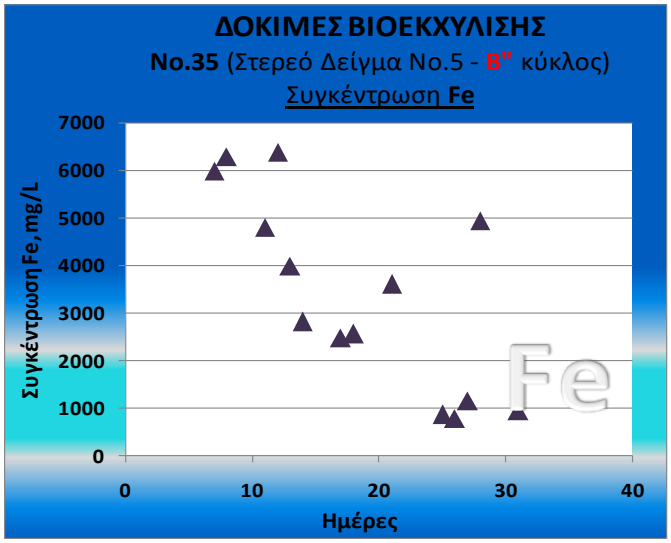
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

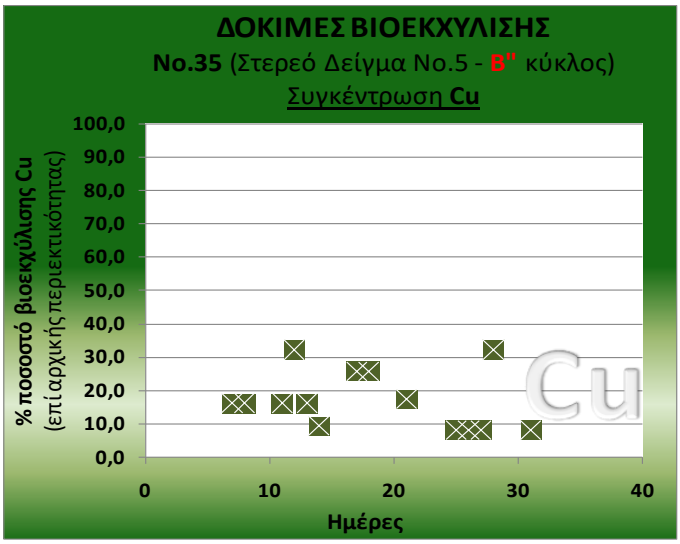
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

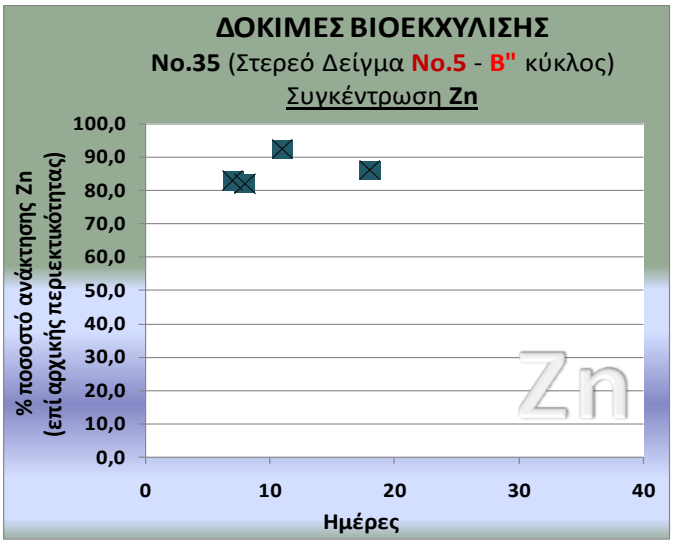
Α' Καλλιέργεια – Β' Μεταφορά







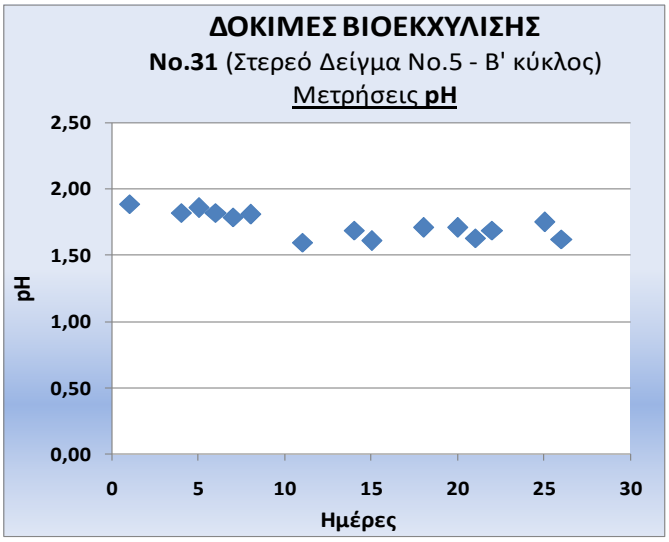


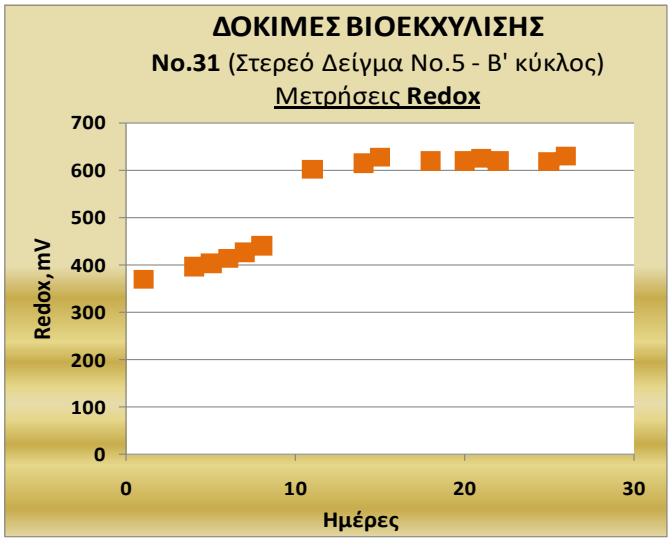


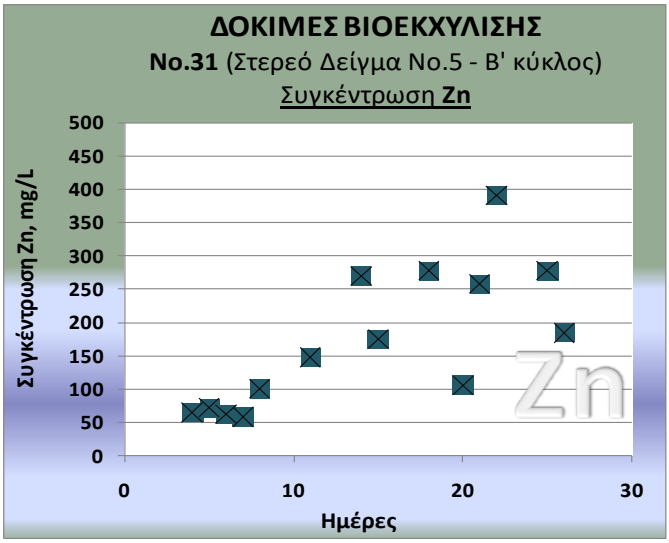
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

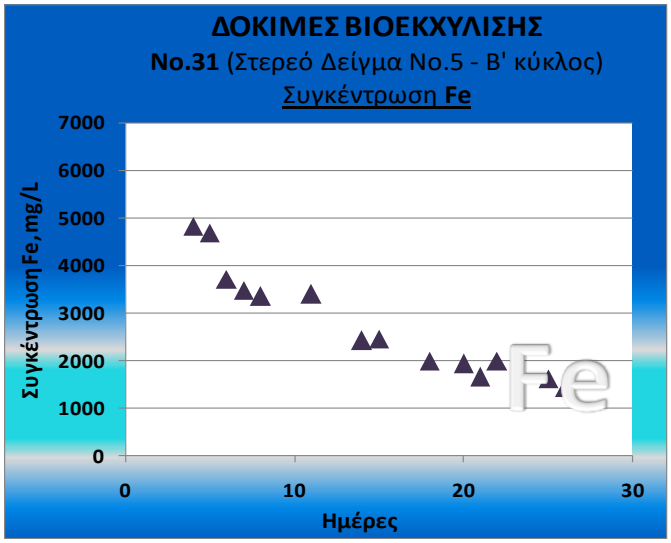
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

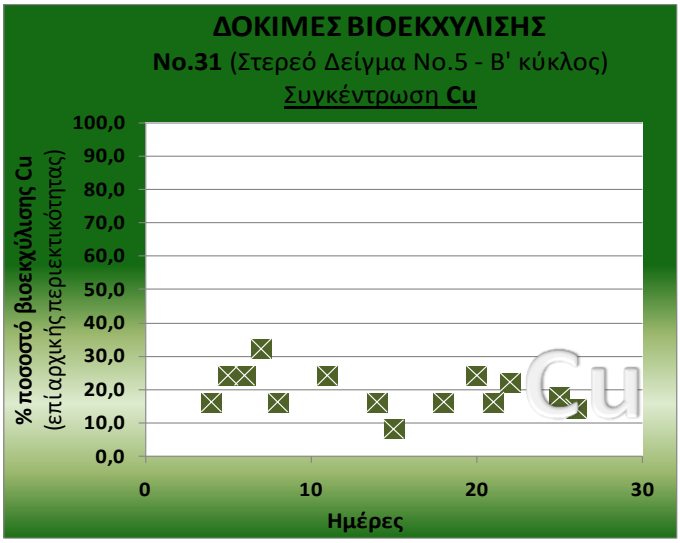
Β' Καλλιέργεια – Β' Μεταφορά

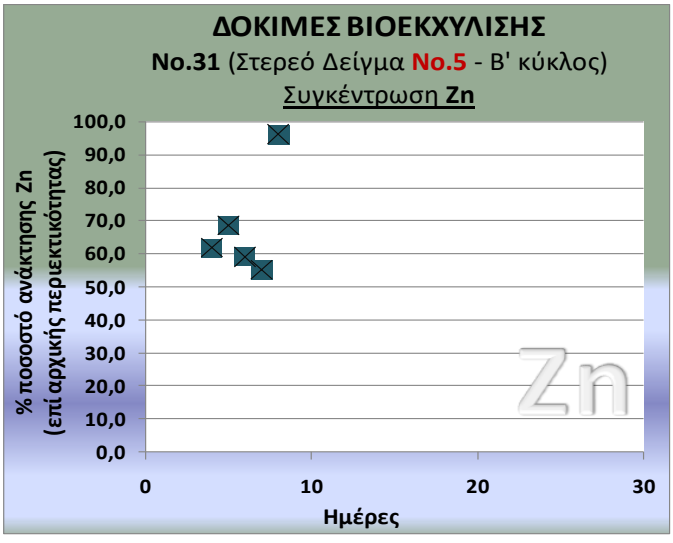








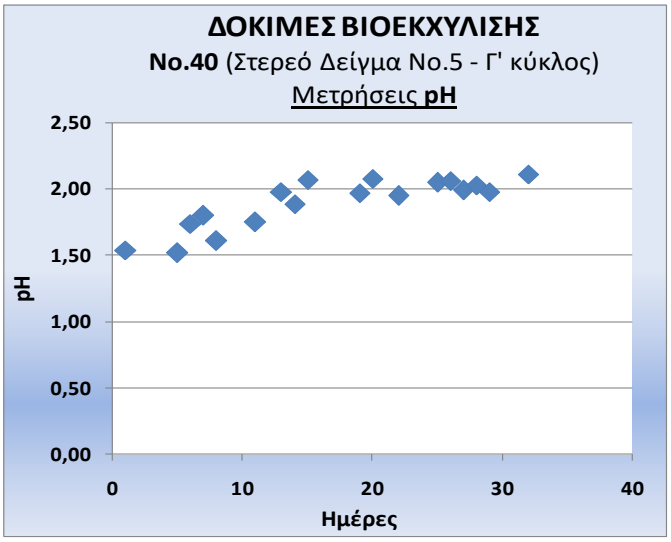


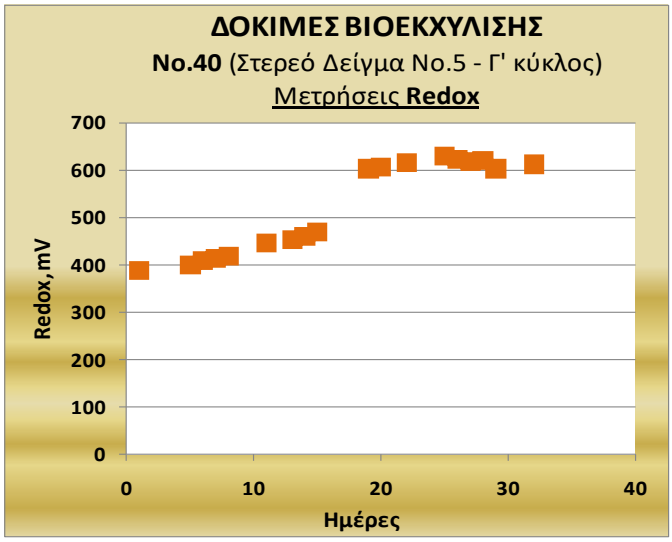


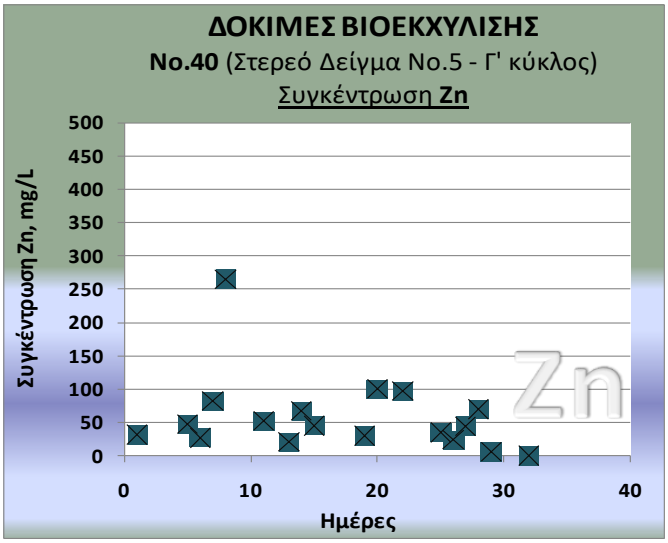
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

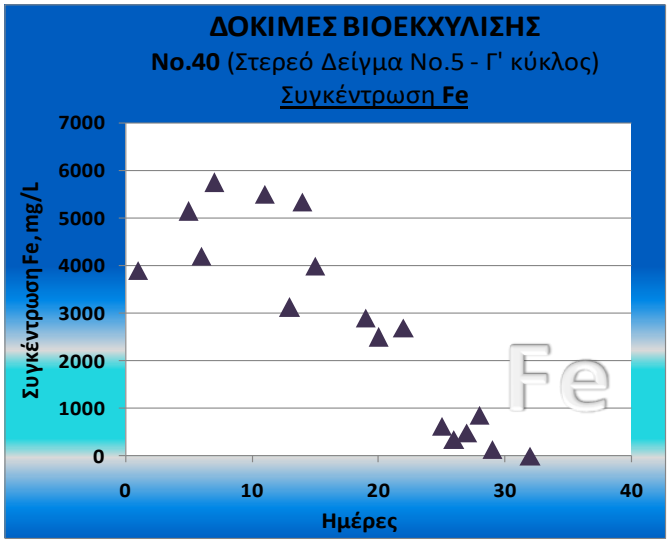
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

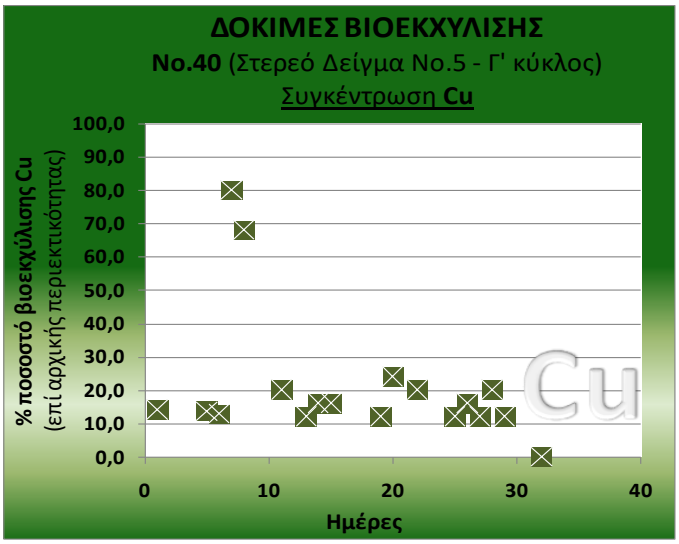
Α' Καλλιέργεια – Γ' Μεταφορά

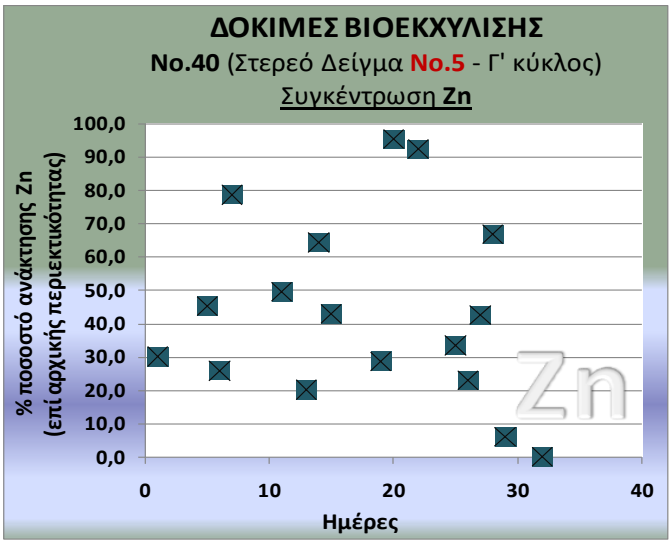








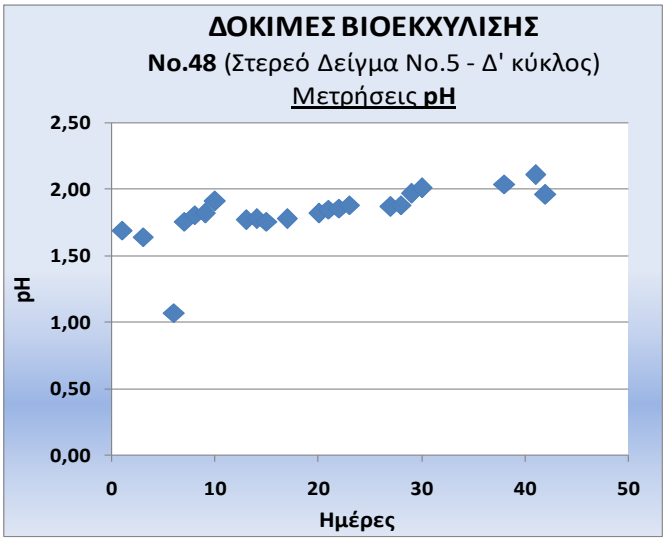


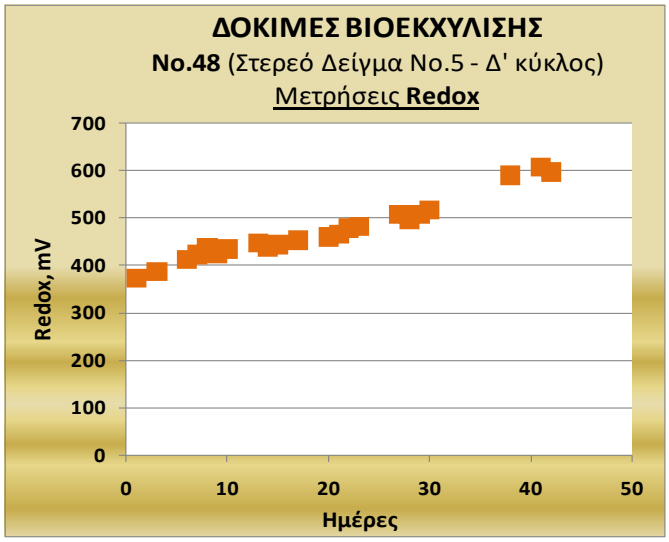


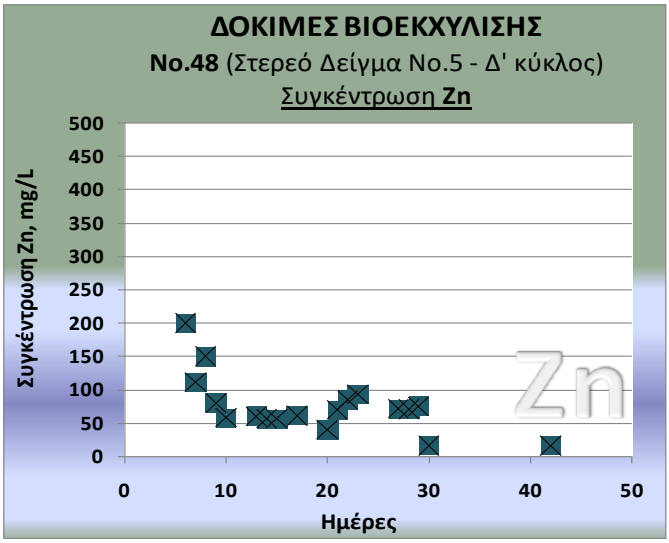
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

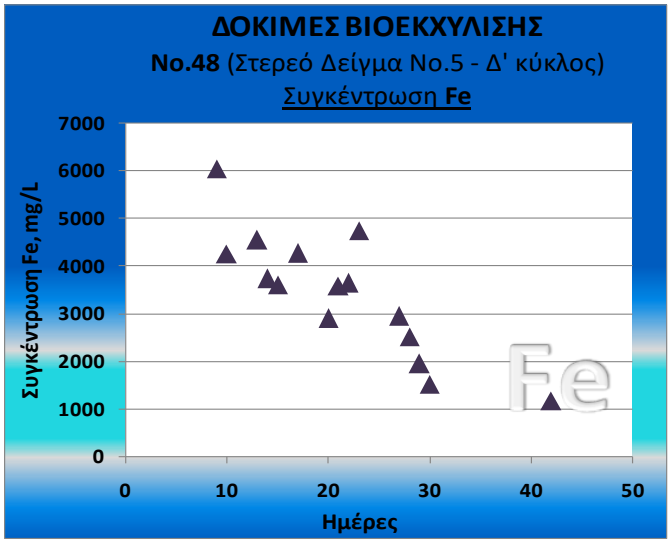
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

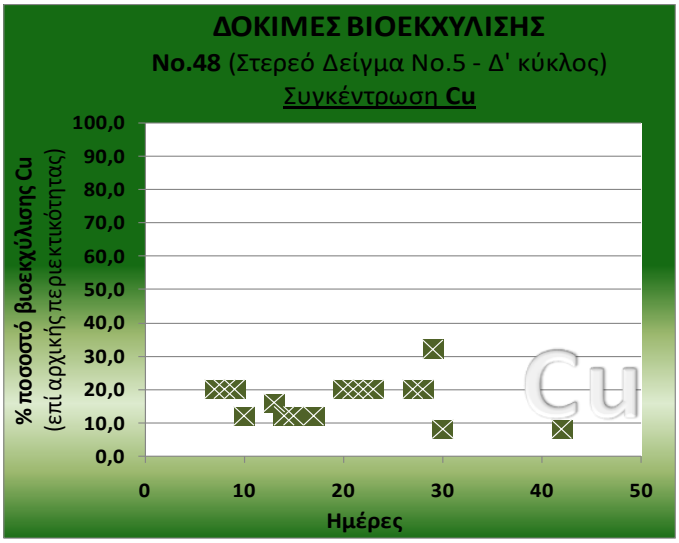
Α' Καλλιέργεια – Δ' Μεταφορά

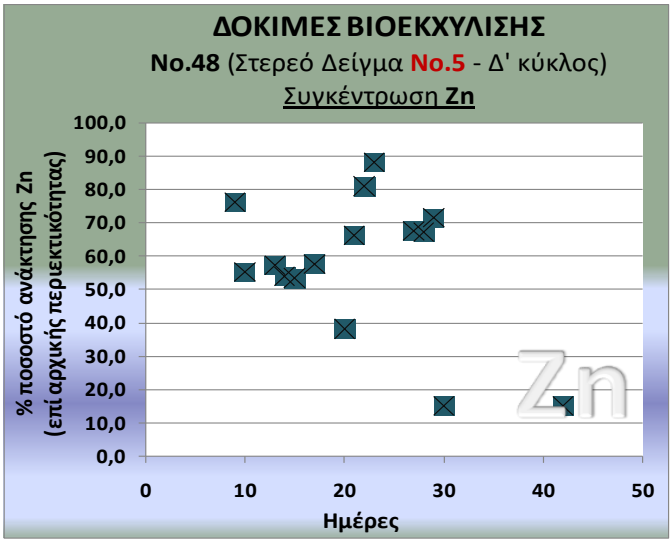








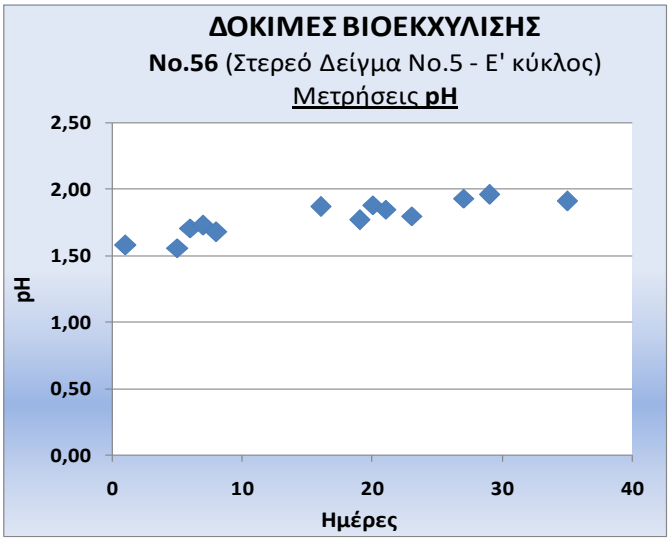


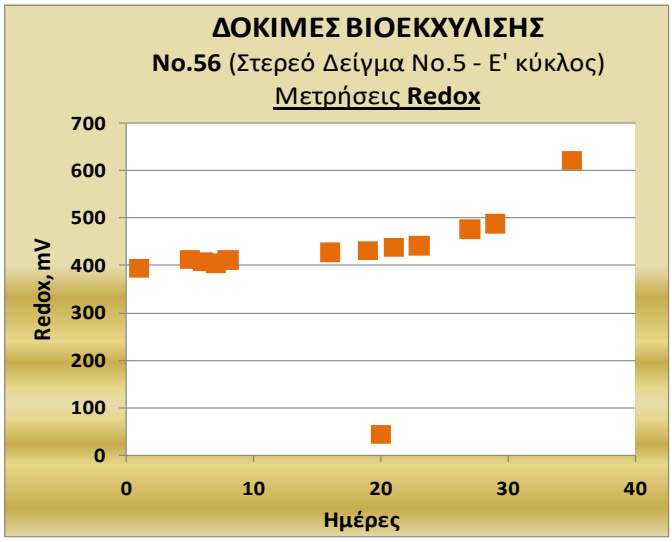


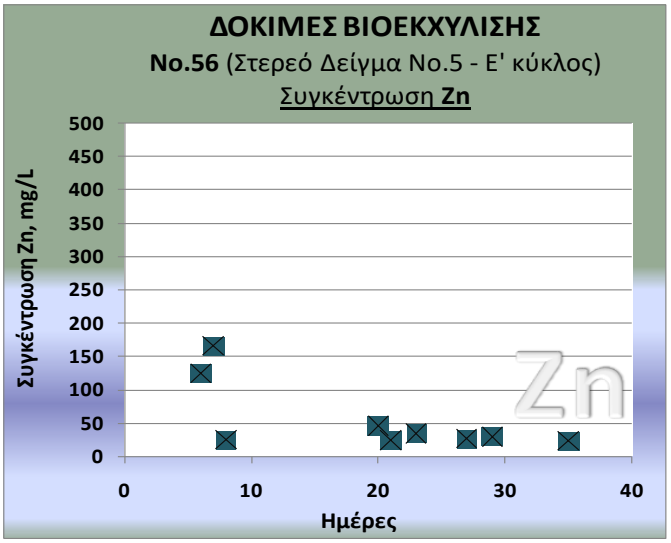
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.5

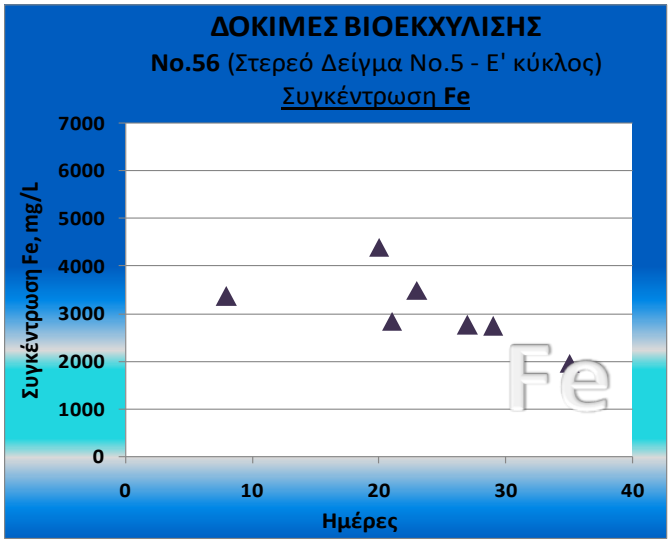
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

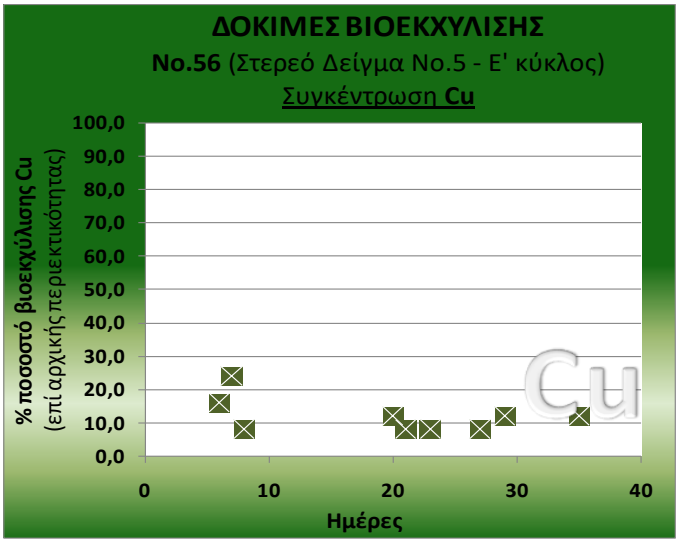
Α' Καλλιέργεια – Ε' Μεταφορά

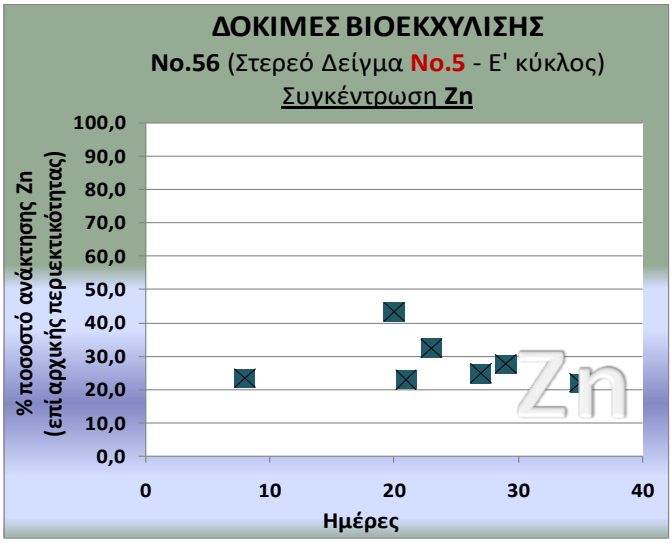








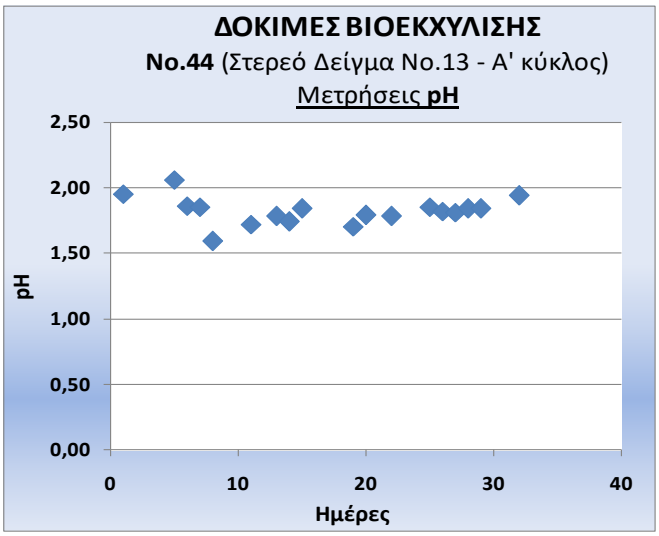


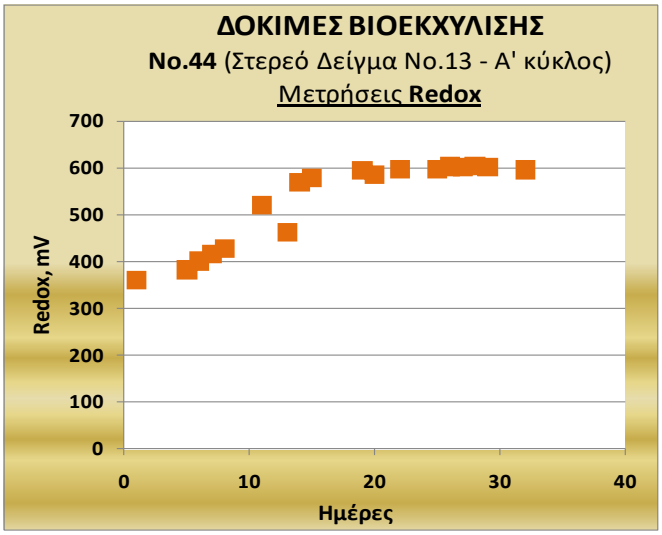


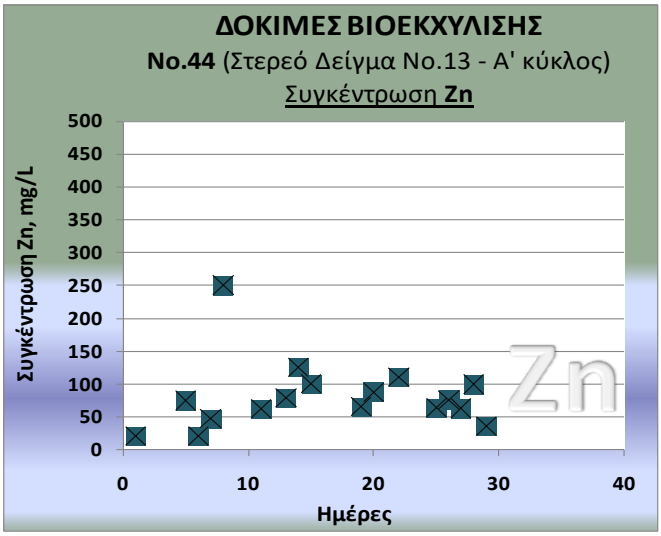
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.6

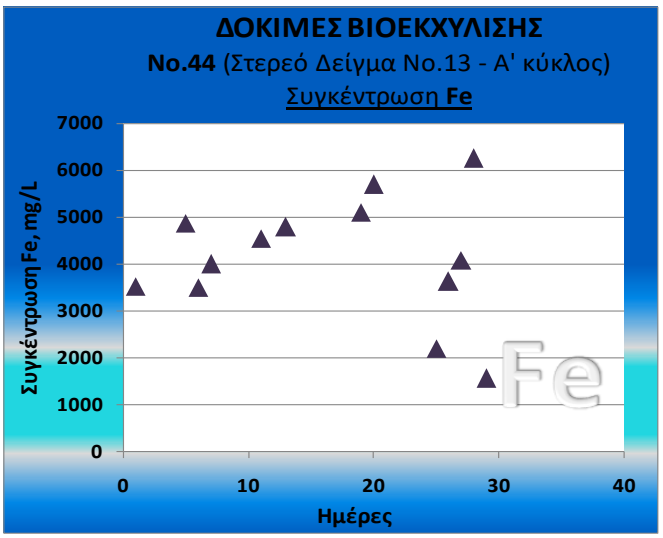
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

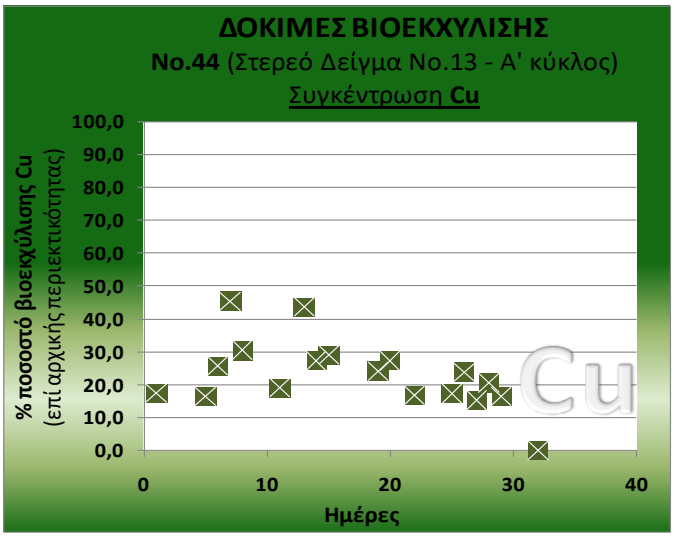
Α' Μεταφορά

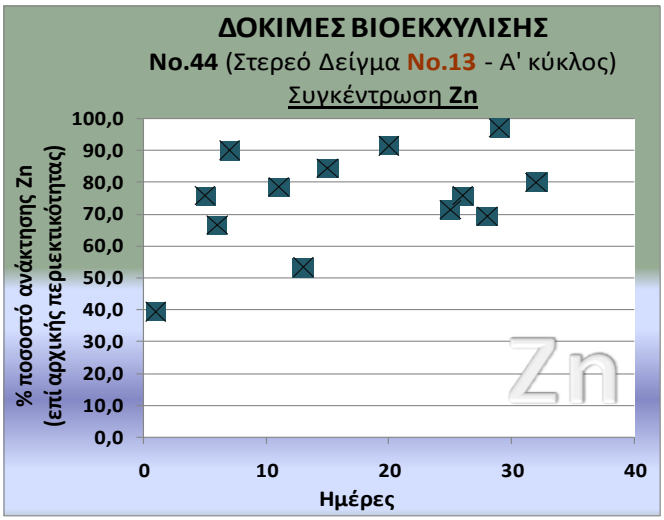








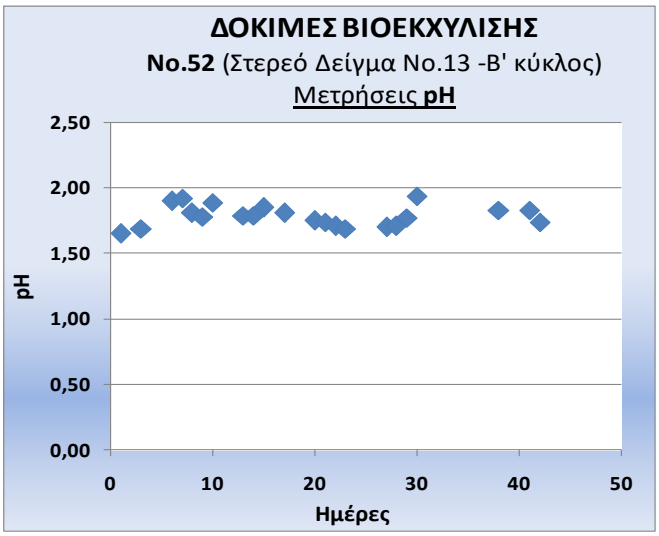


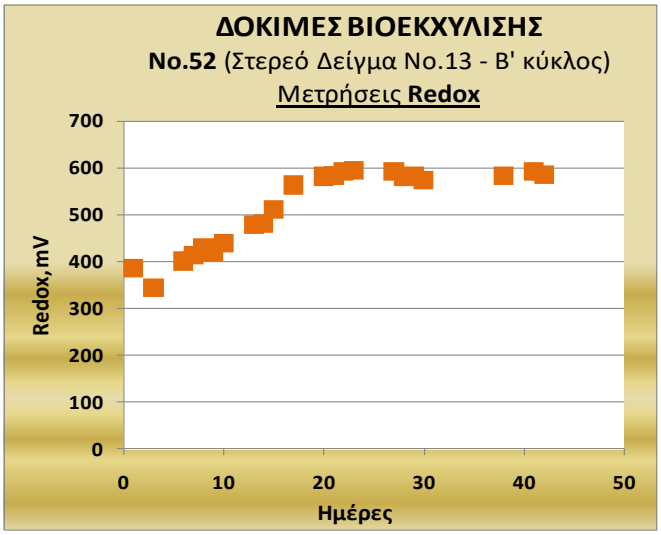


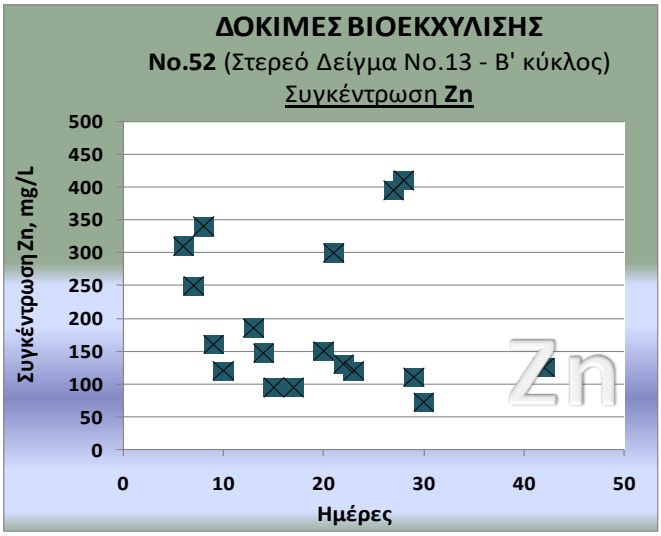
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.6

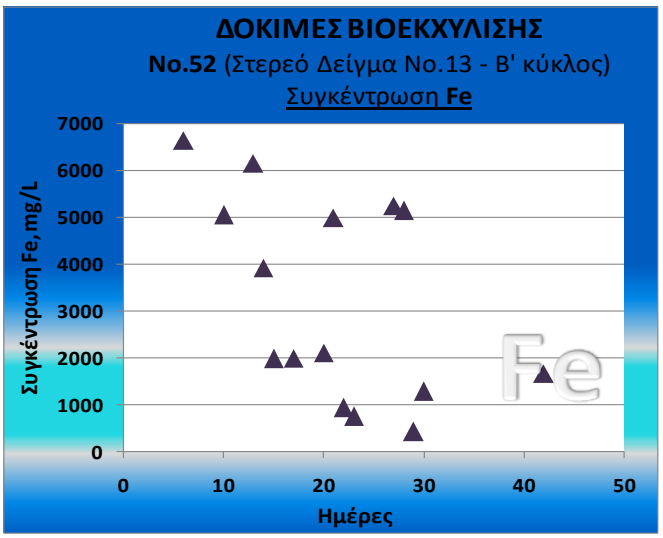
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

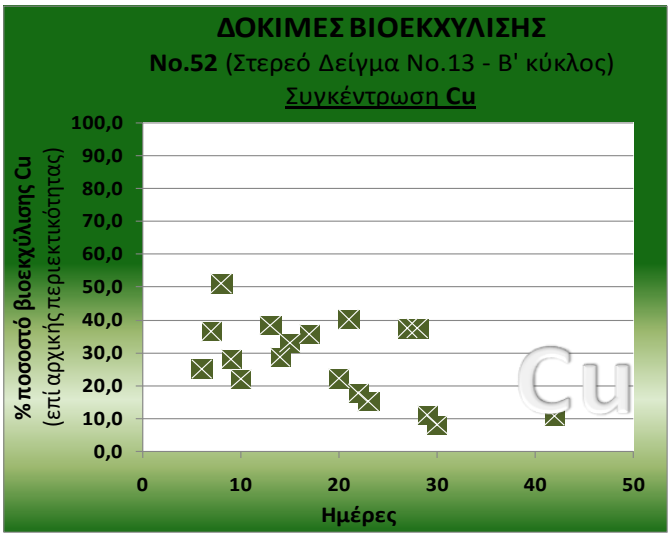
Β' Μεταφορά

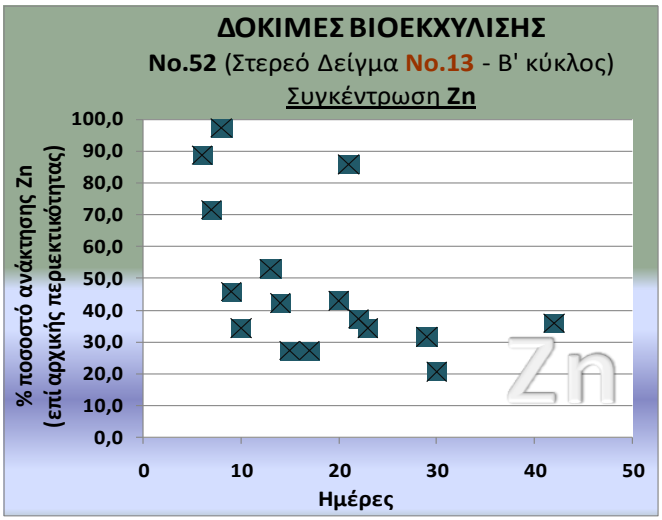








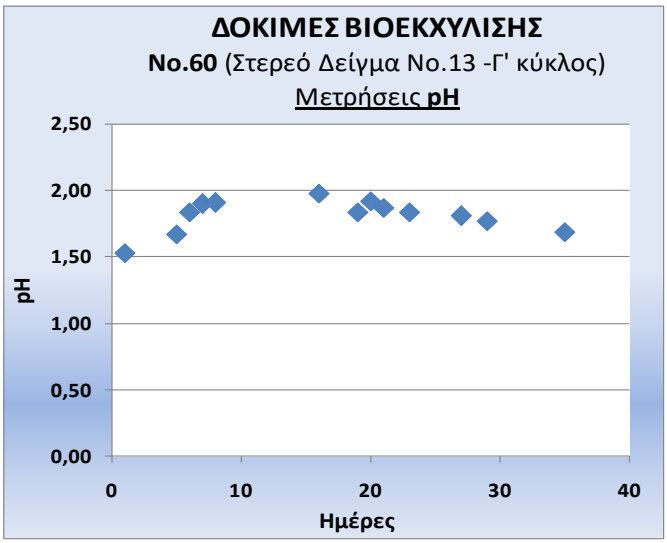


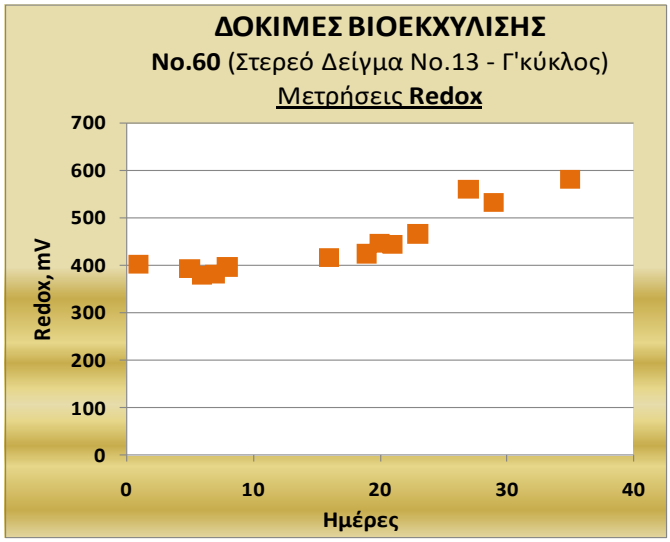


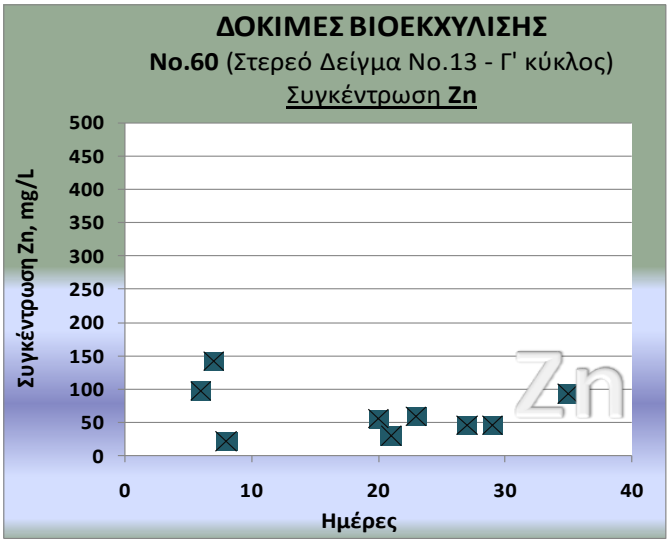
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.6

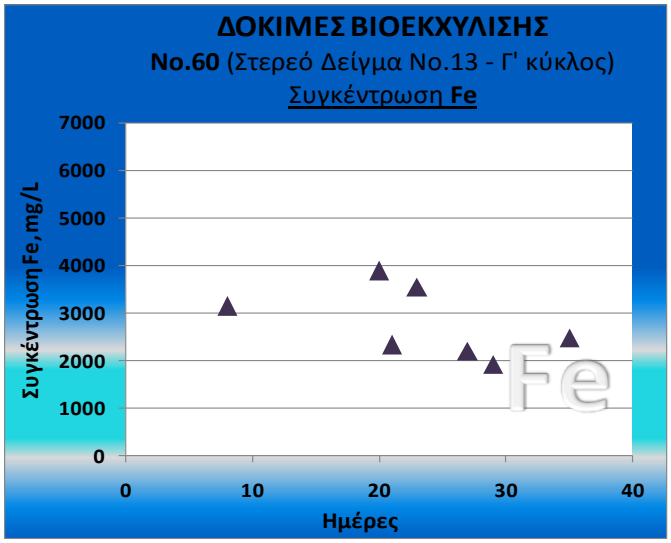
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

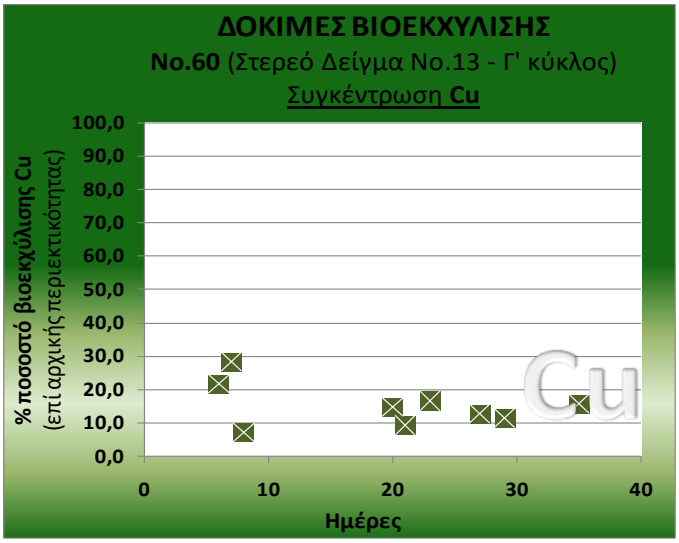
Γ' Μεταφορά

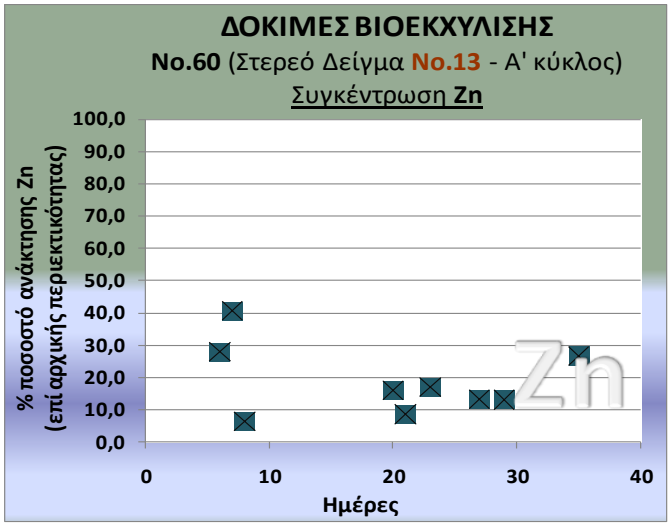








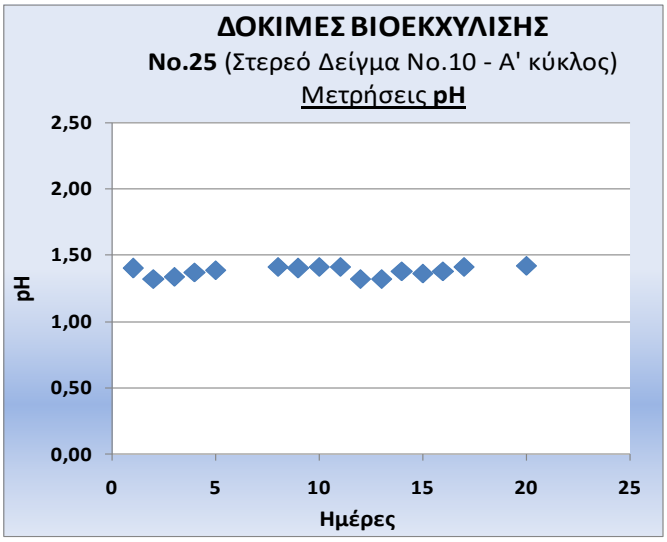


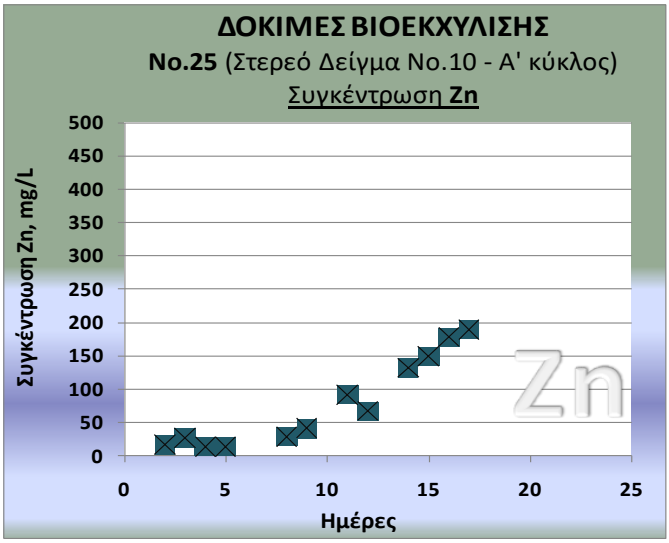


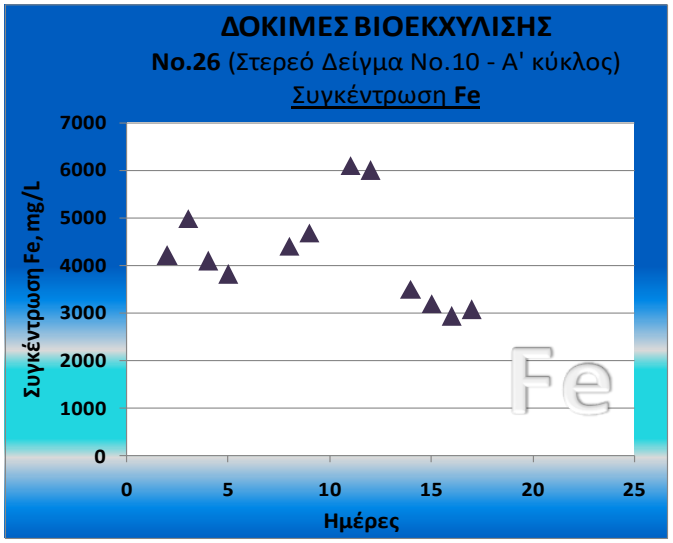
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

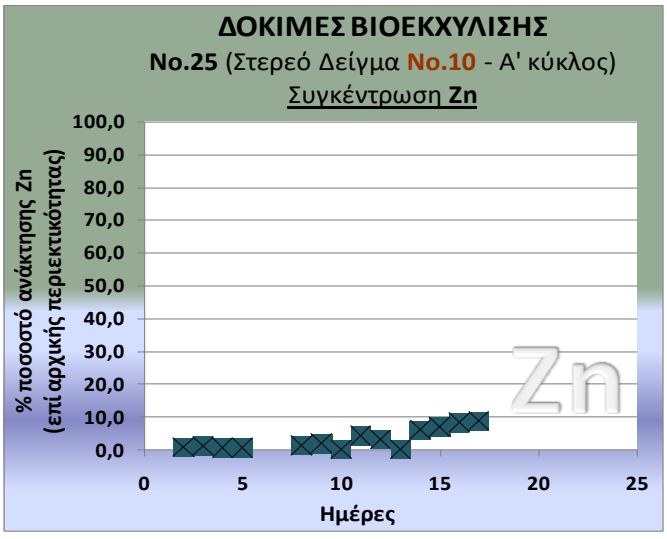
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

Α' Καλλιέργεια – Α' Μεταφορά





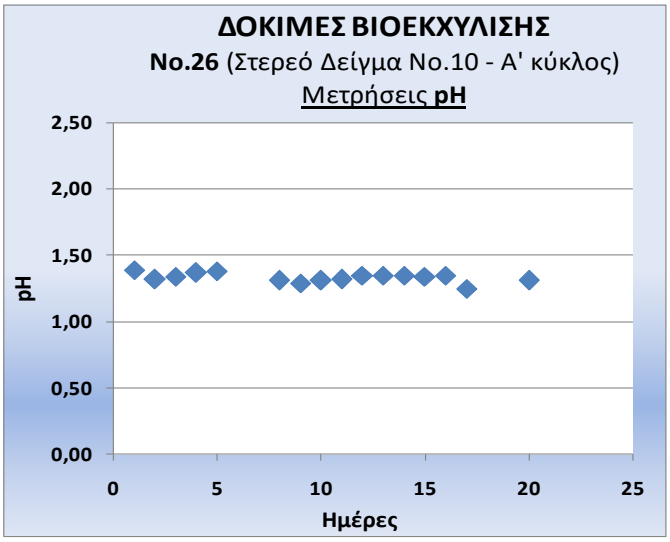


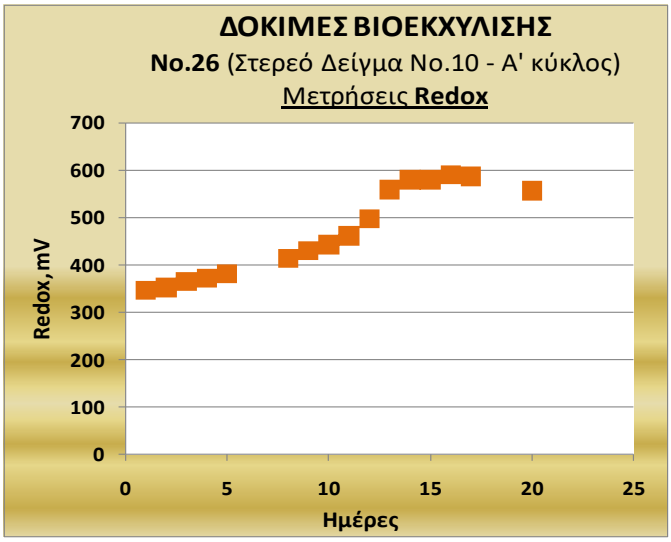


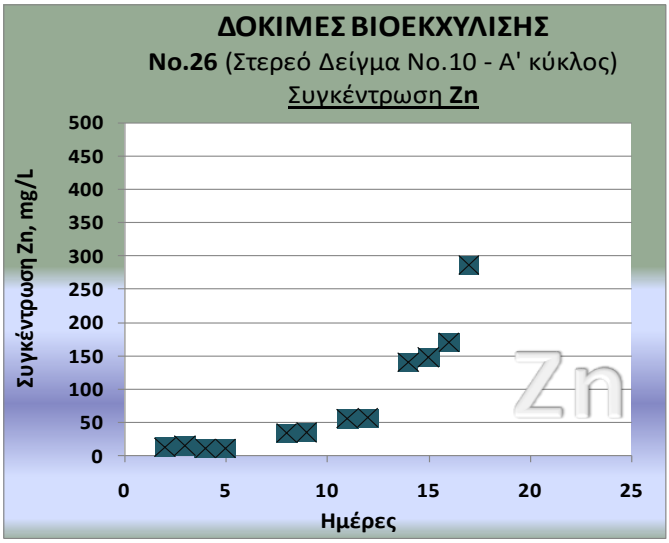
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

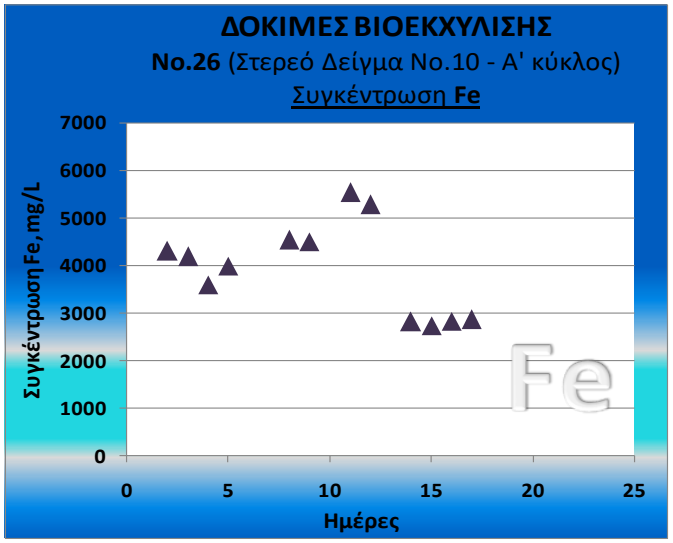
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

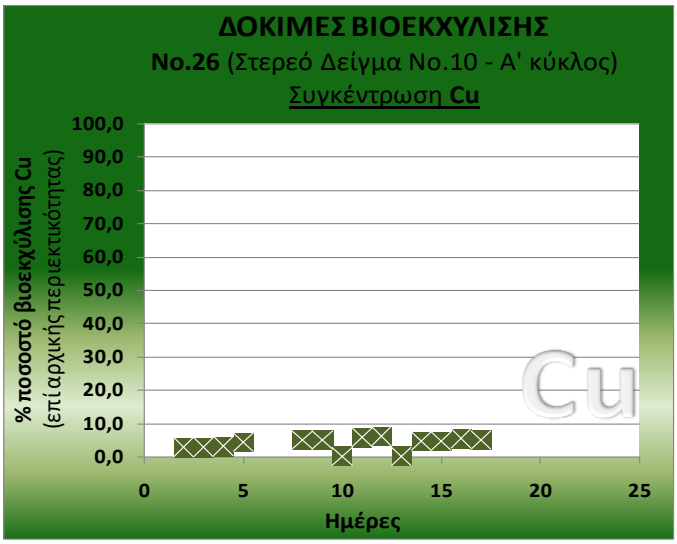
Β' Καλλιέργεια – Α' Μεταφορά

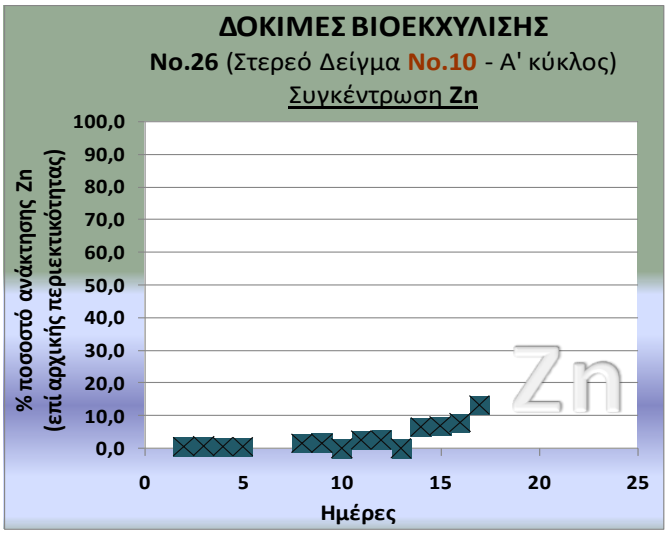








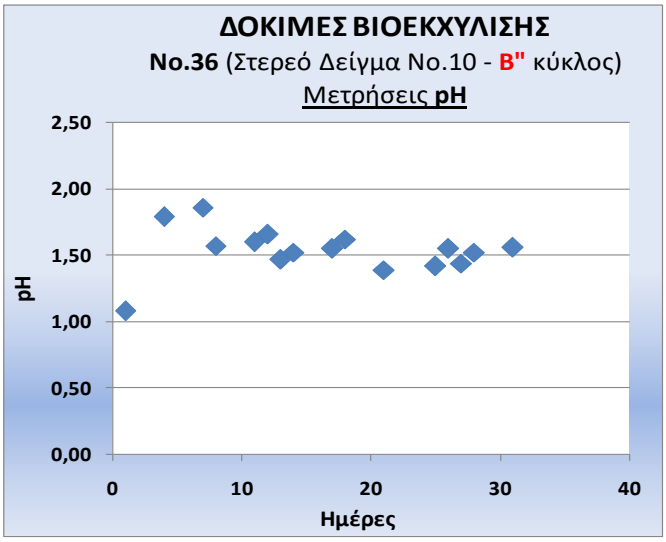


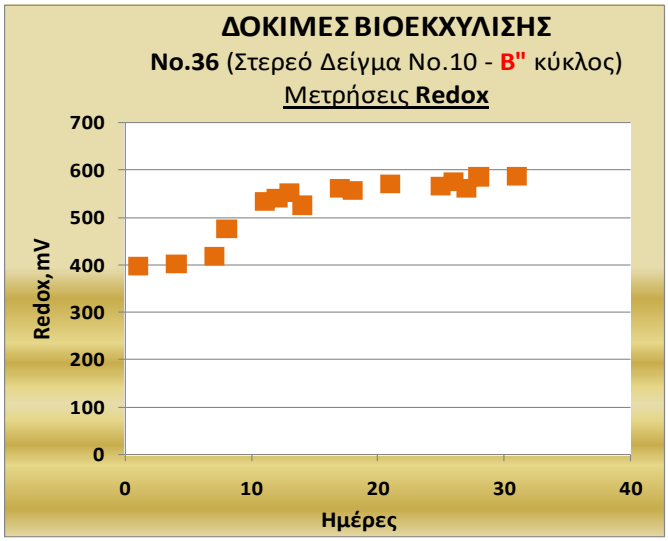


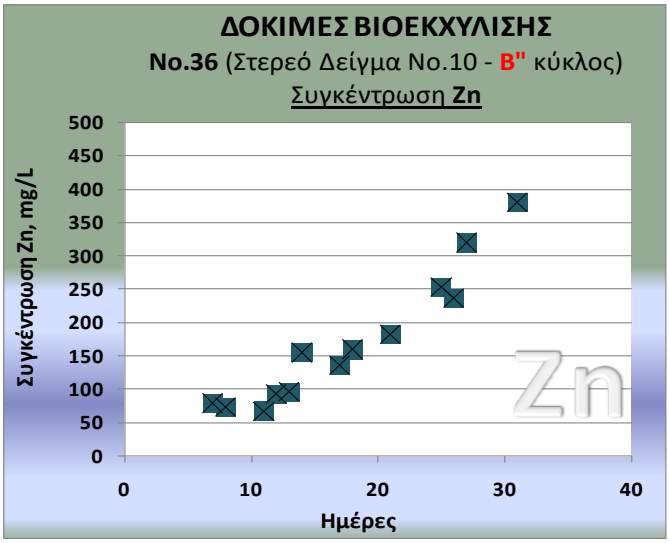
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

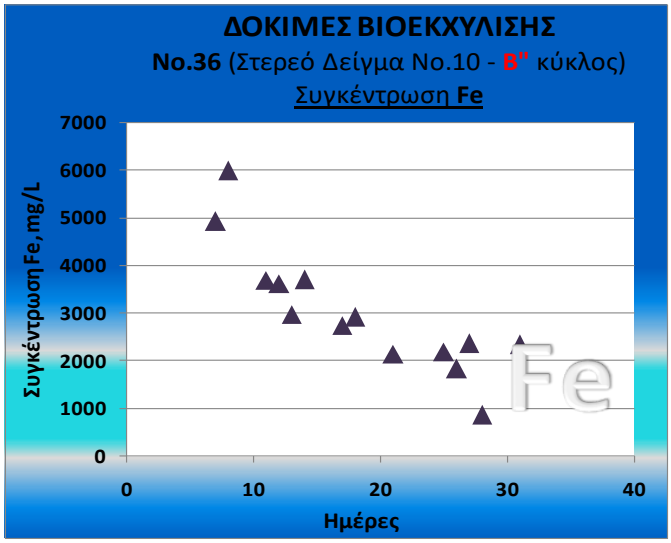
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

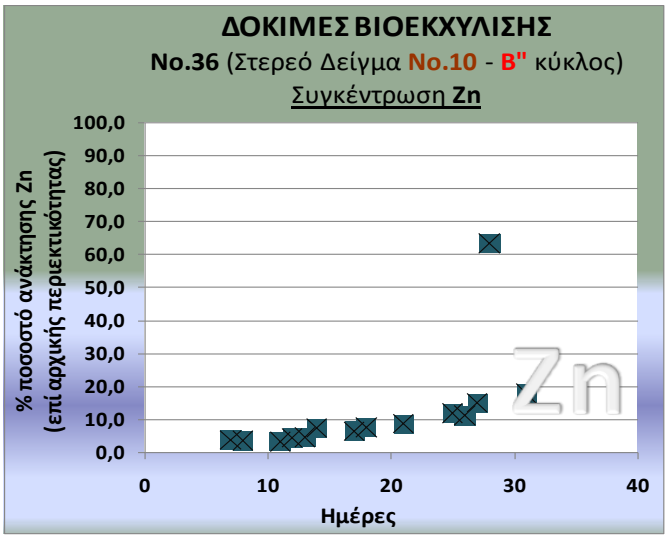
Α' Καλλιέργεια – Β' Μεταφορά







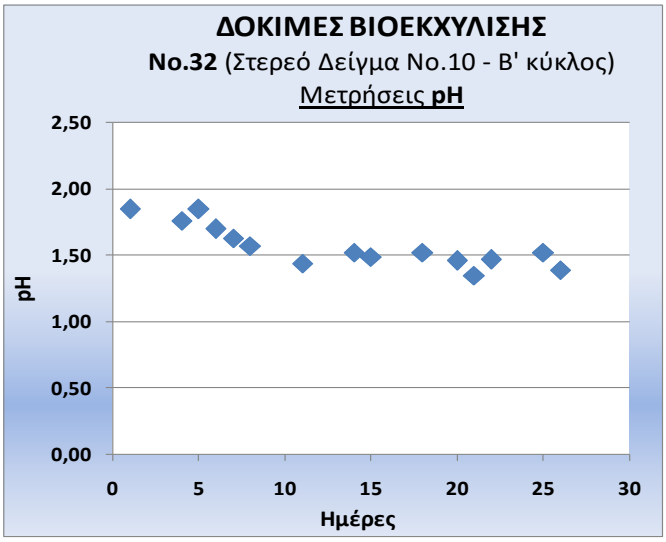


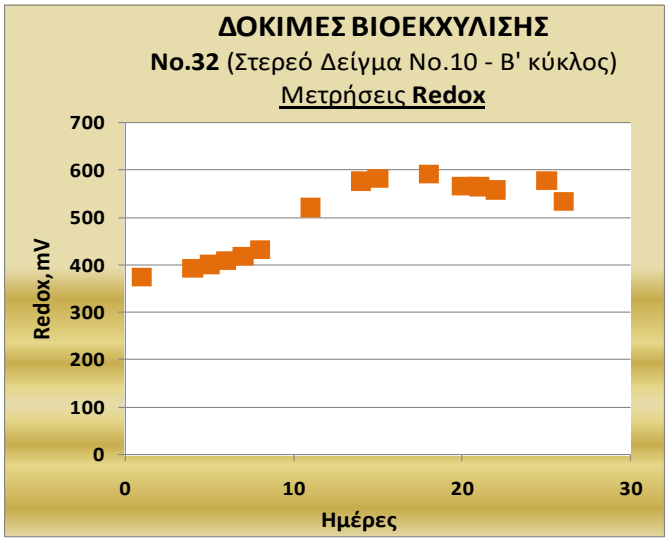


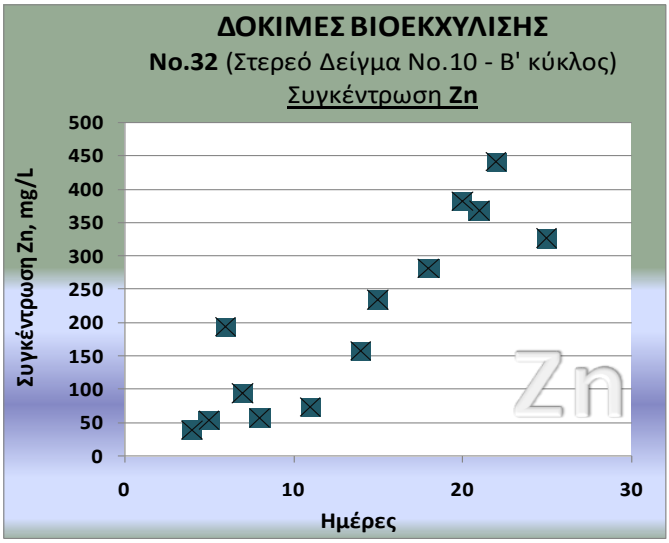
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

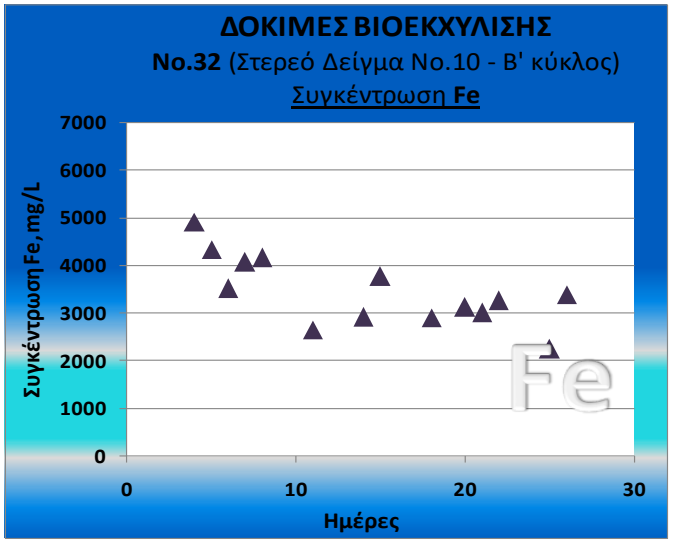
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

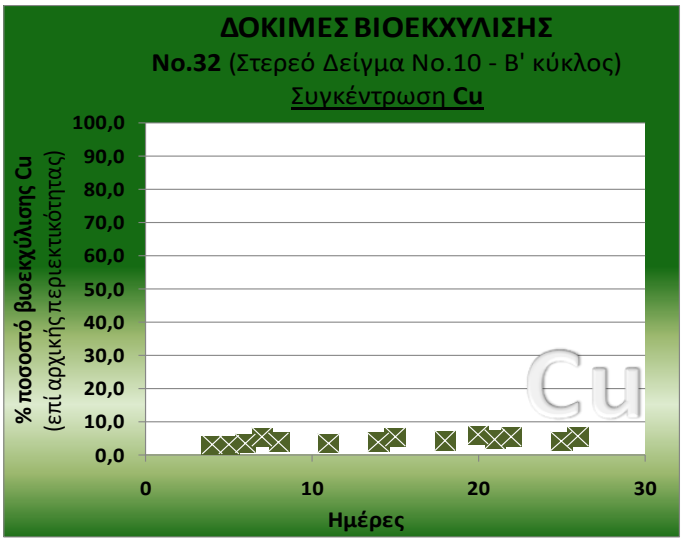
Β' Καλλιέργεια – Β' Μεταφορά







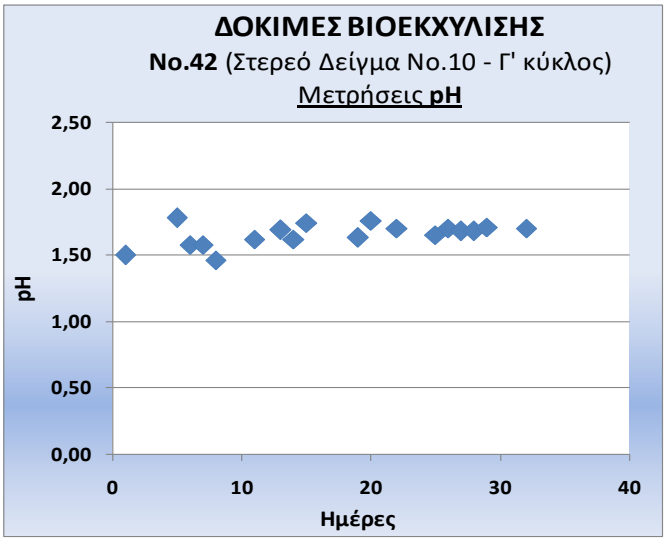


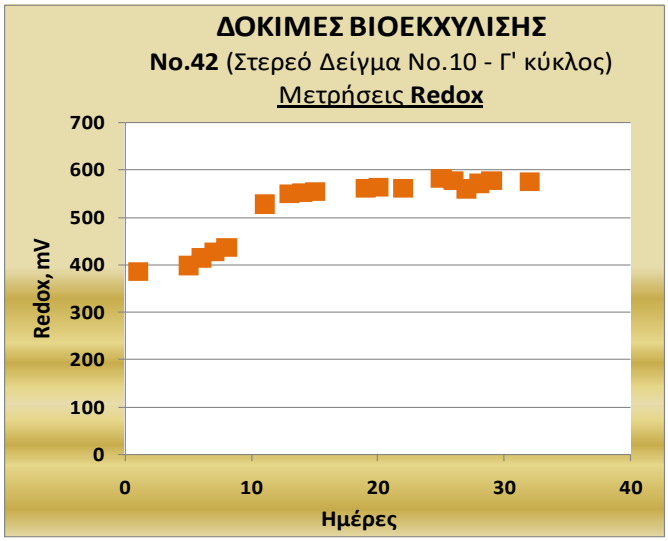


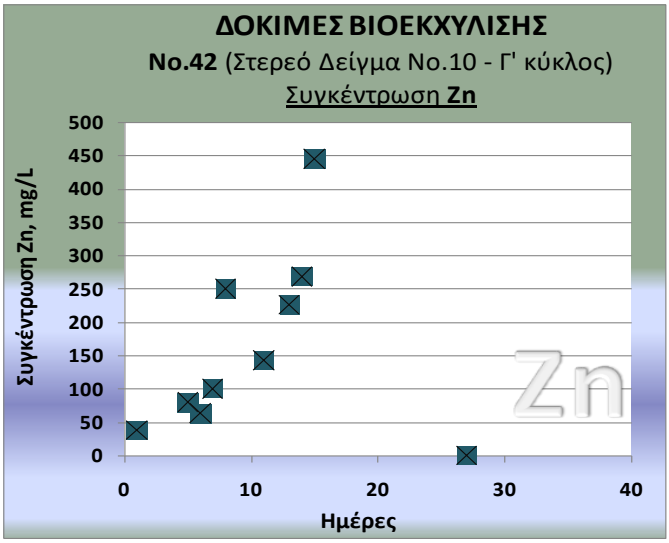
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

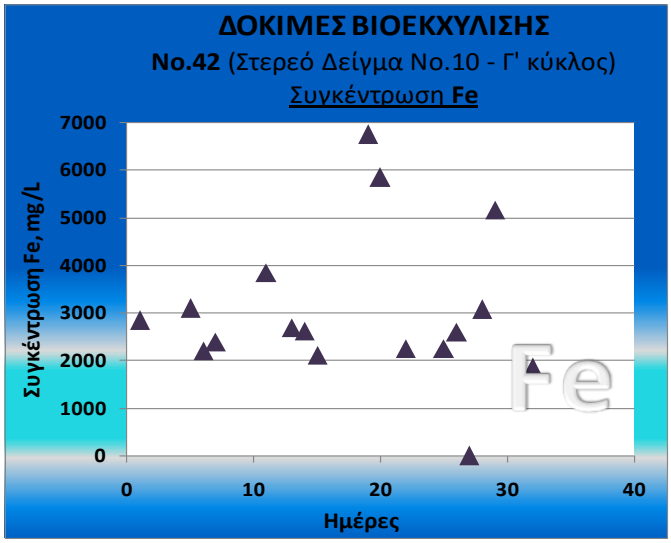
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

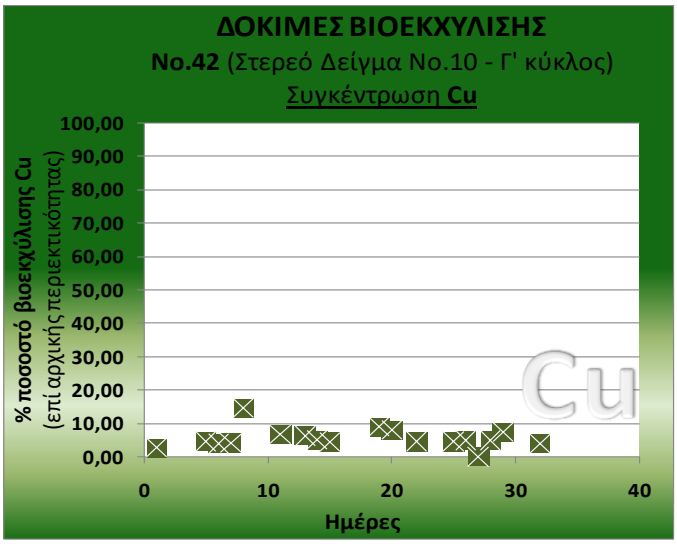
Α' Καλλιέργεια – Γ' Μεταφορά







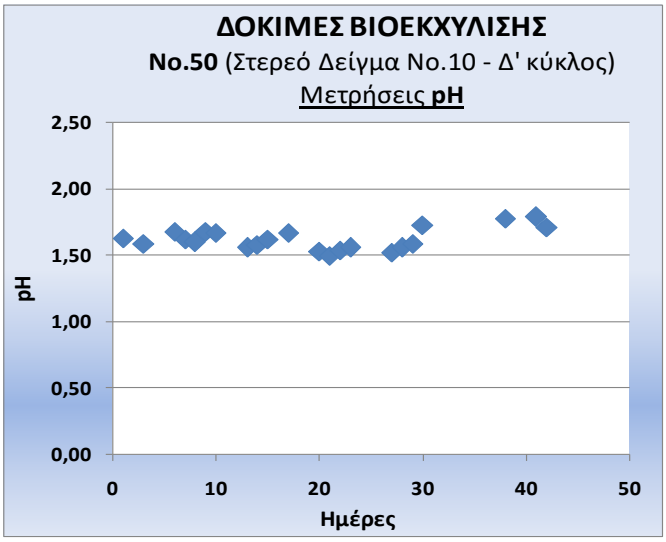


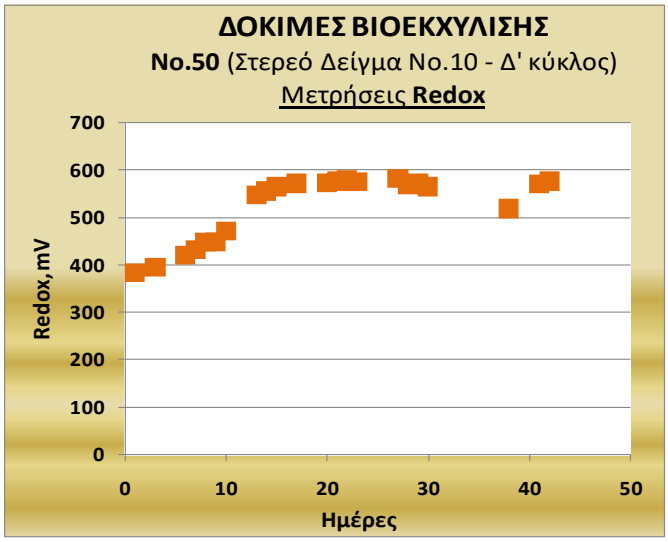


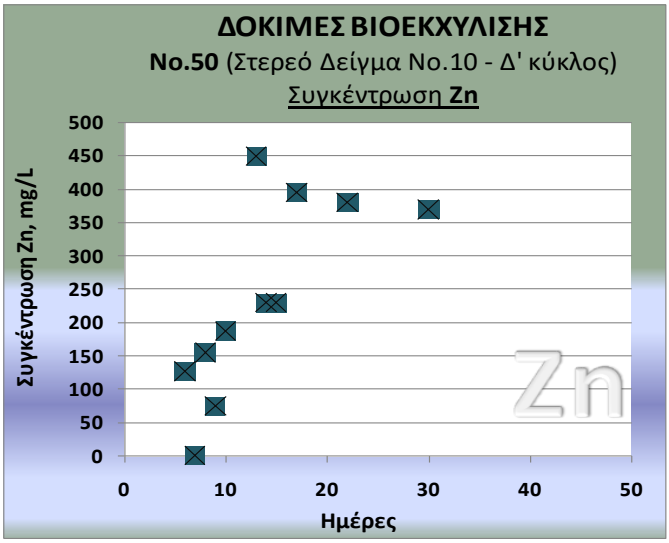
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

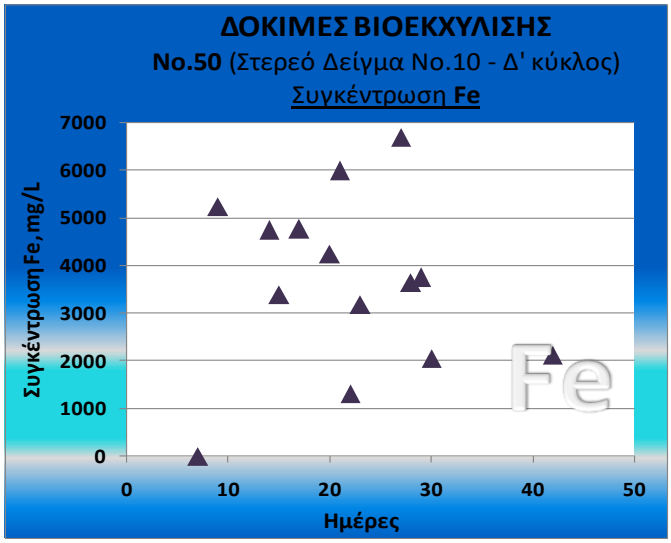
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

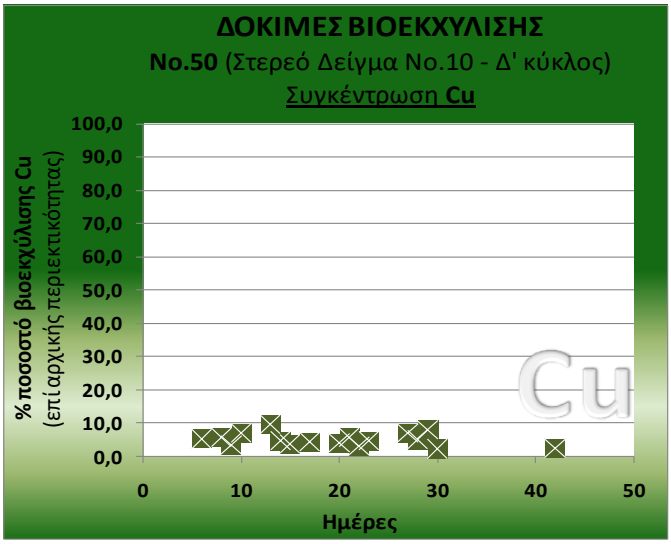
Α' Καλλιέργεια – Δ' Μεταφορά

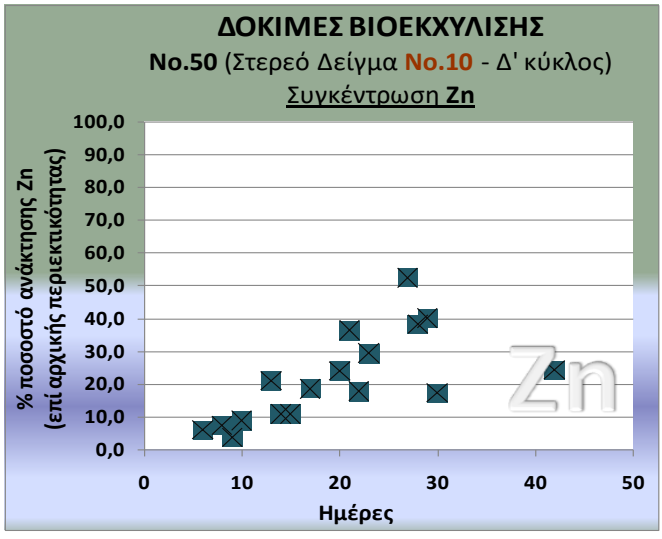








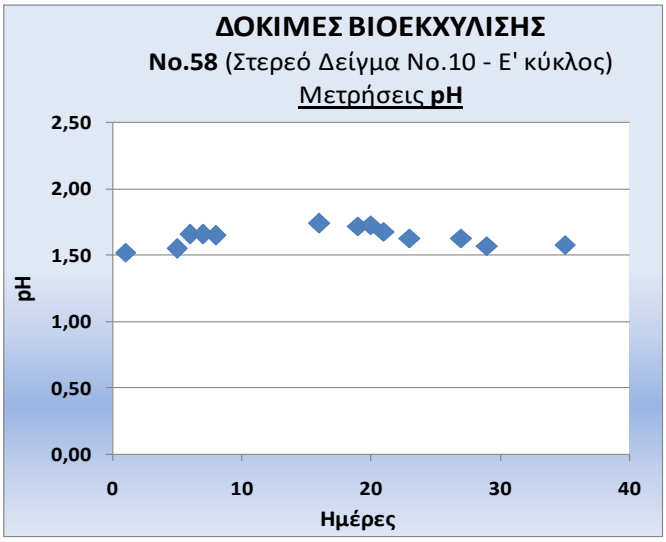


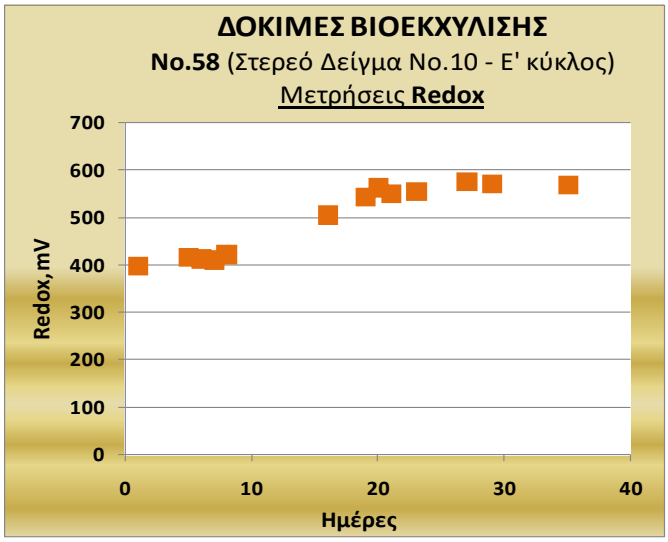


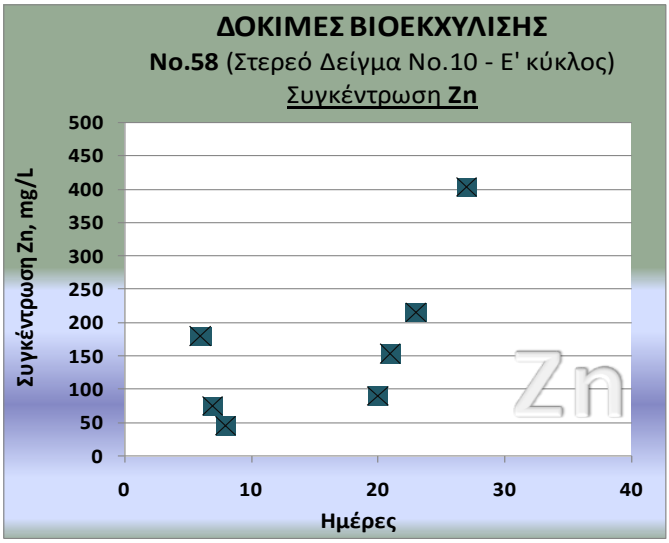
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.10

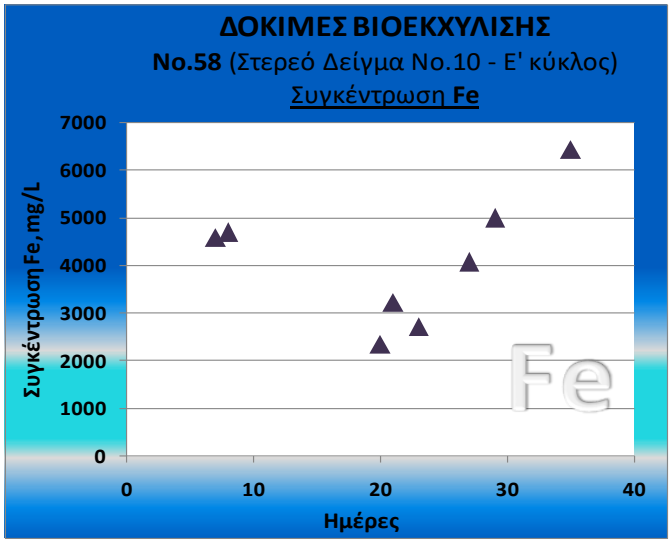
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

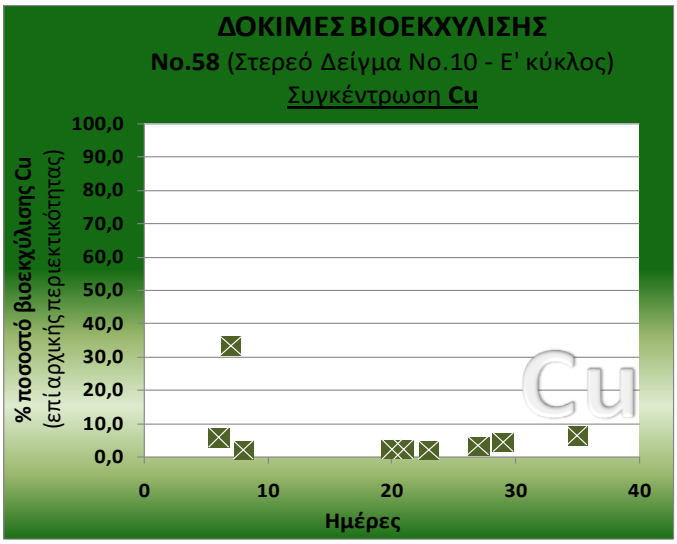
Α' Καλλιέργεια – Ε' Μεταφορά

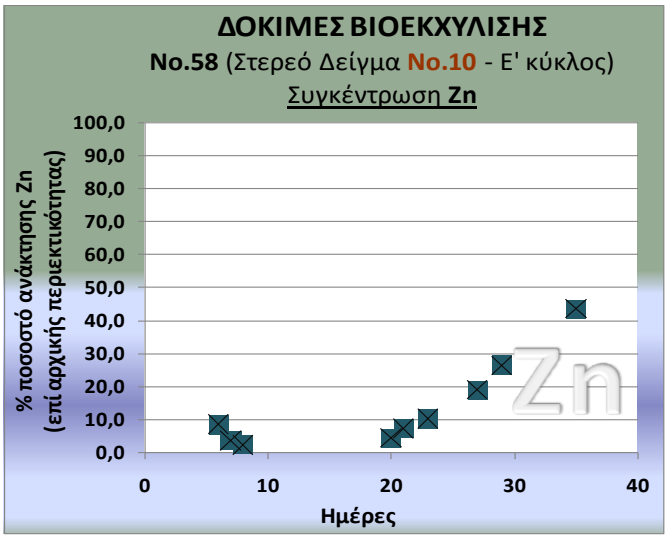








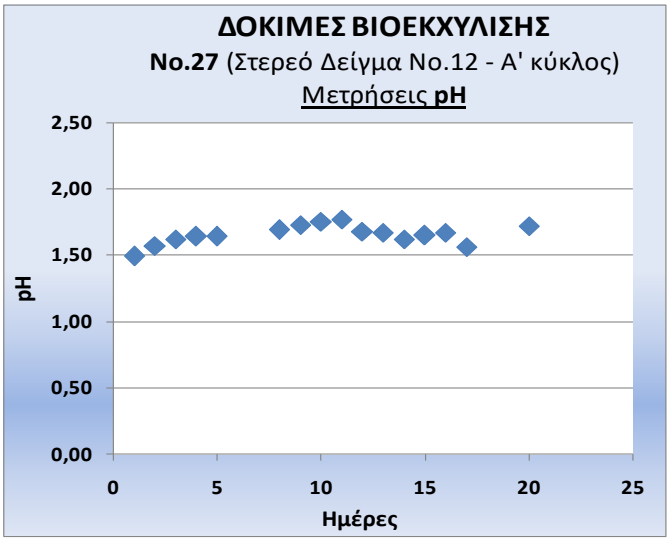


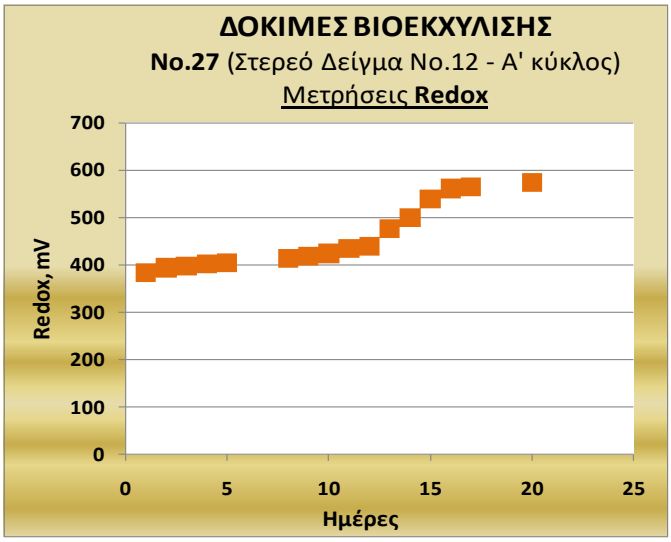


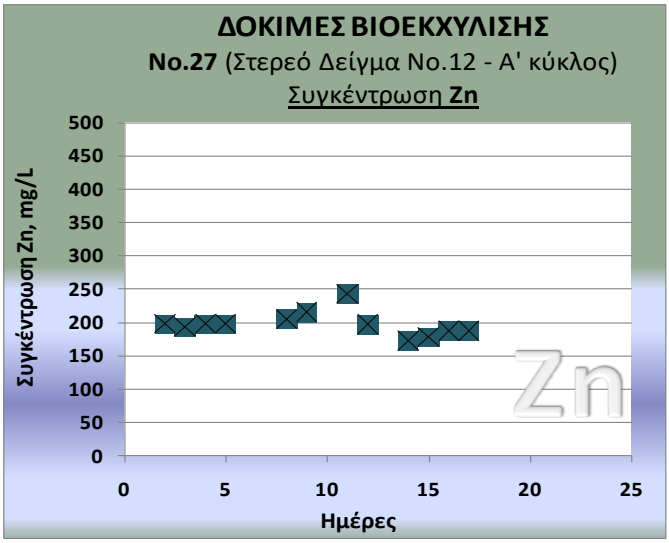
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

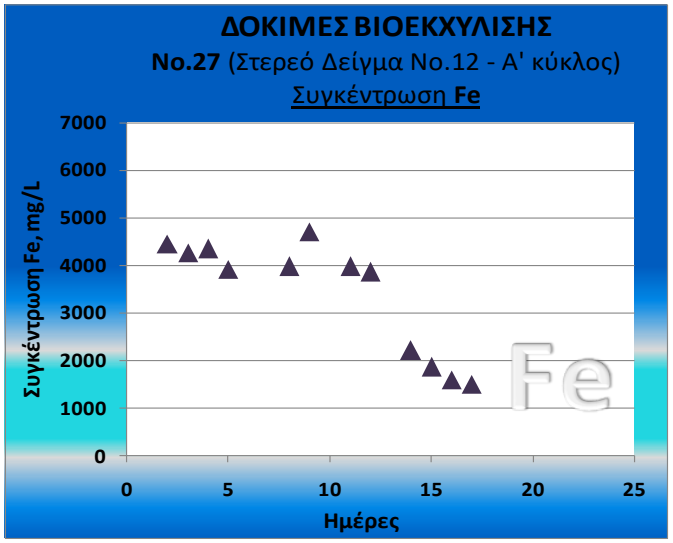
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

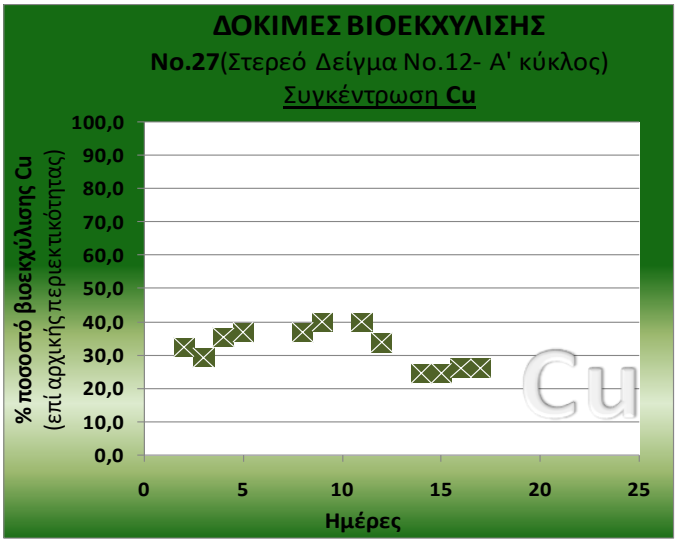
Α' Καλλιέργεια – Α' Μεταφορά

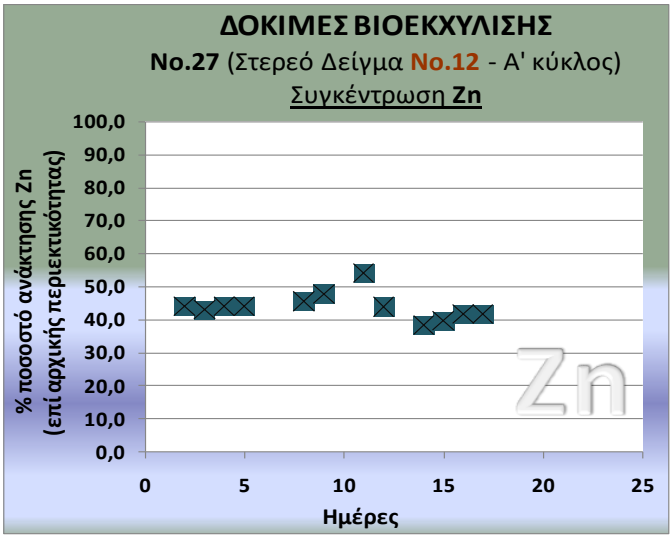








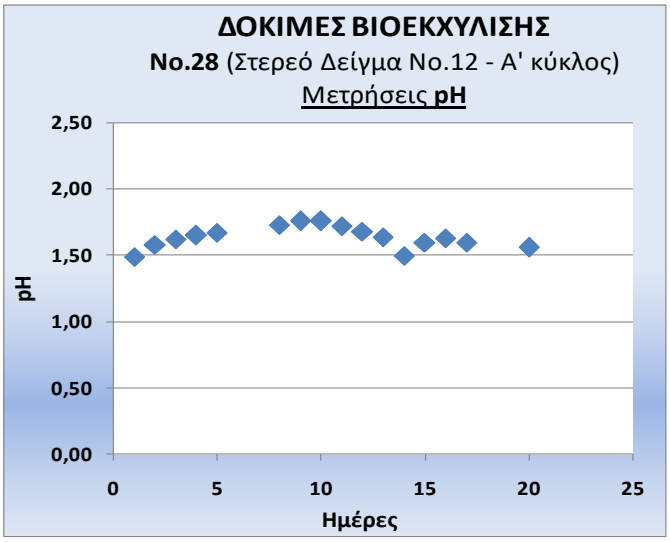


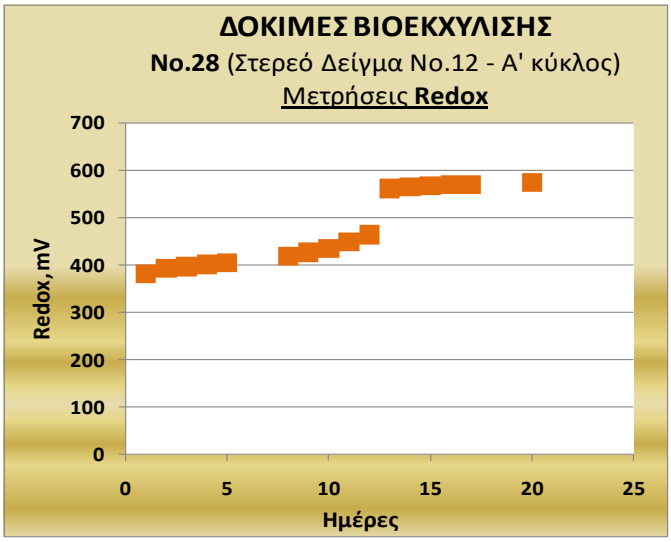


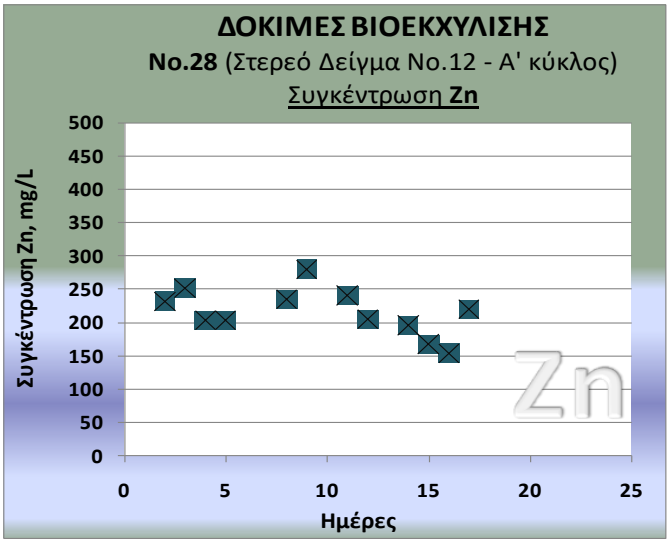
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

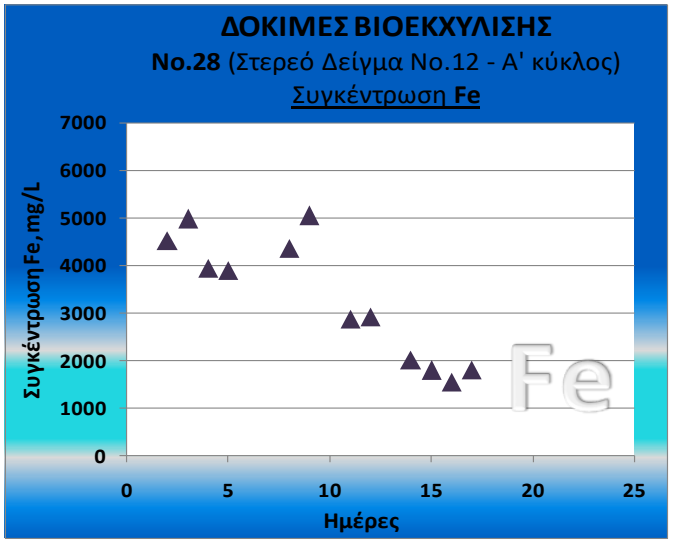
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

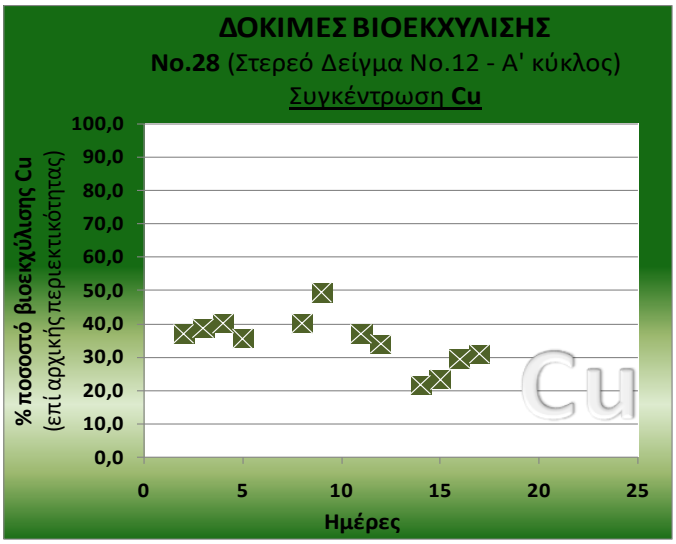
Β' Καλλιέργεια – Α' Μεταφορά

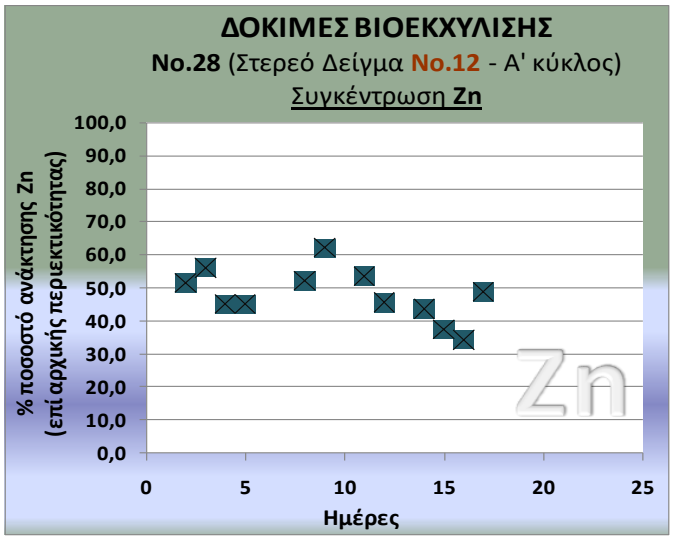








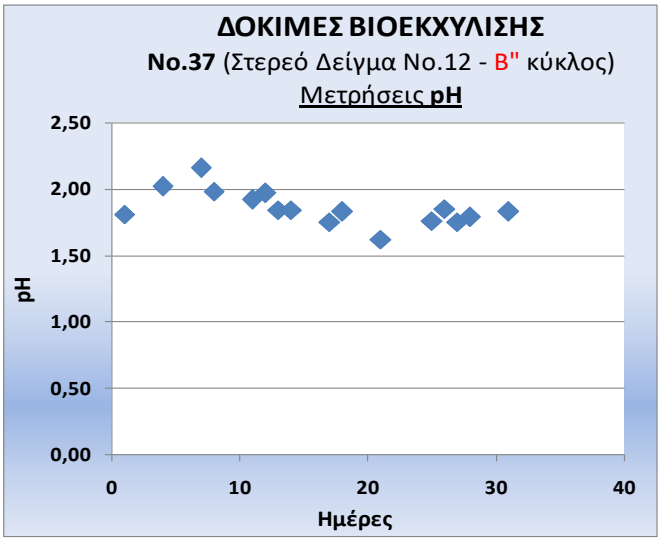


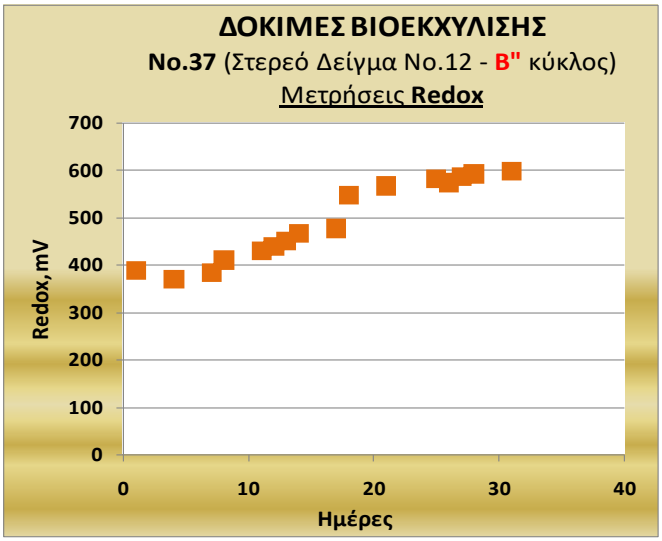


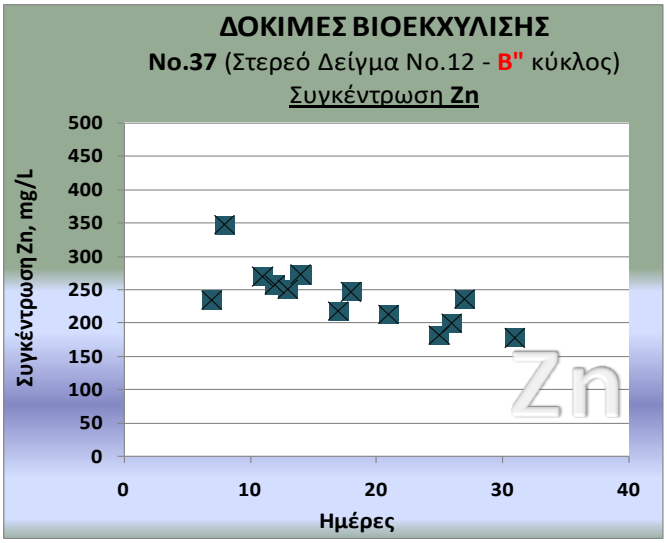
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

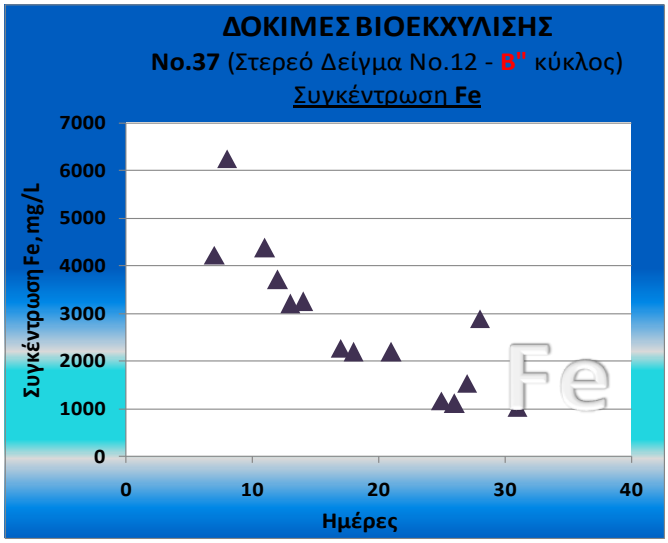
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

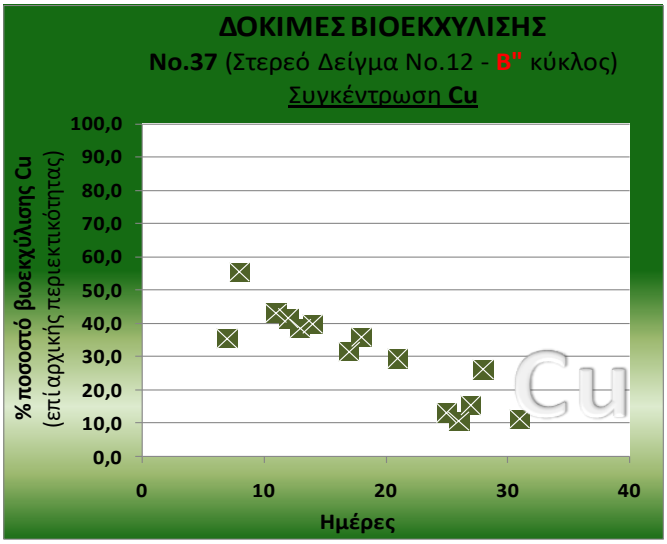
Α' Καλλιέργεια – Β' Μεταφορά

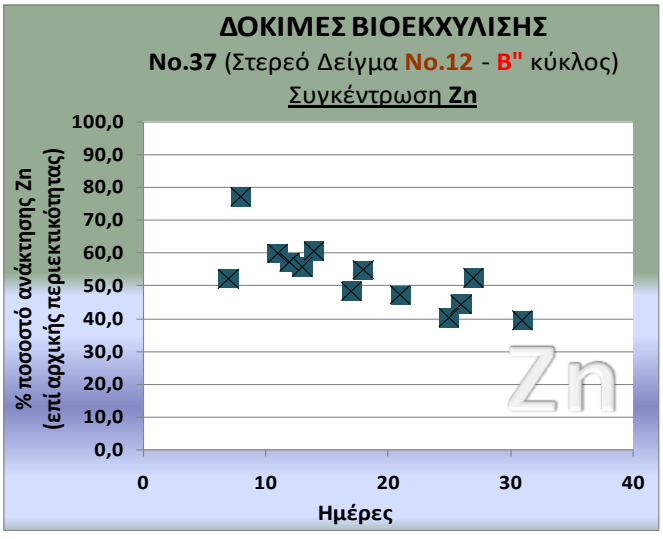








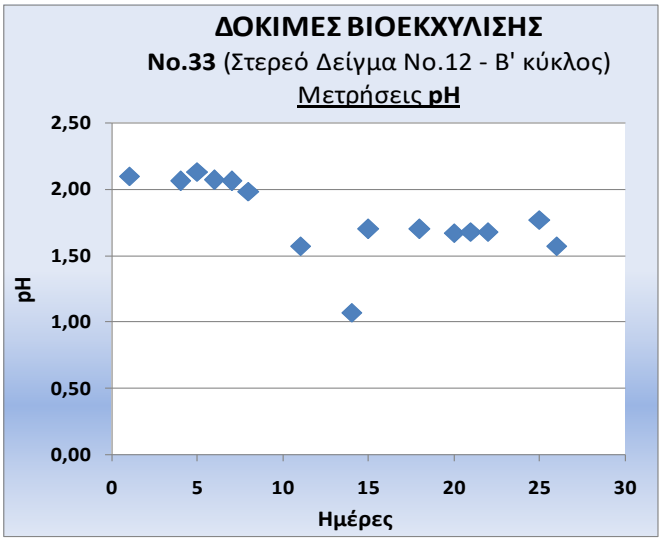


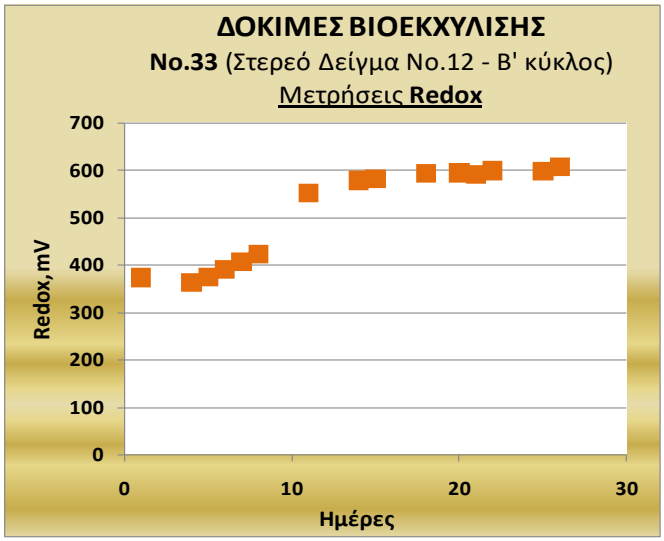


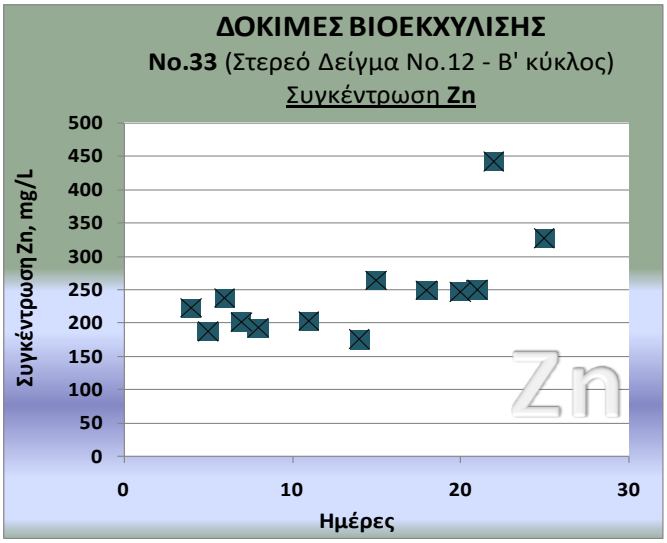
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

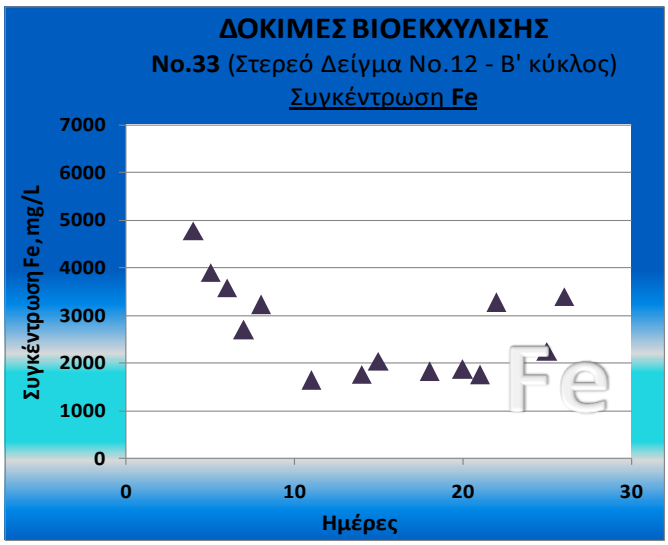
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

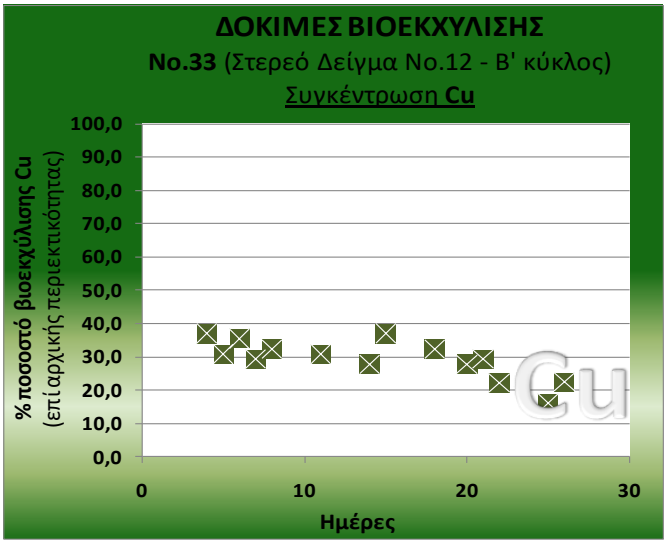
Β' Καλλιέργεια – Β' Μεταφορά

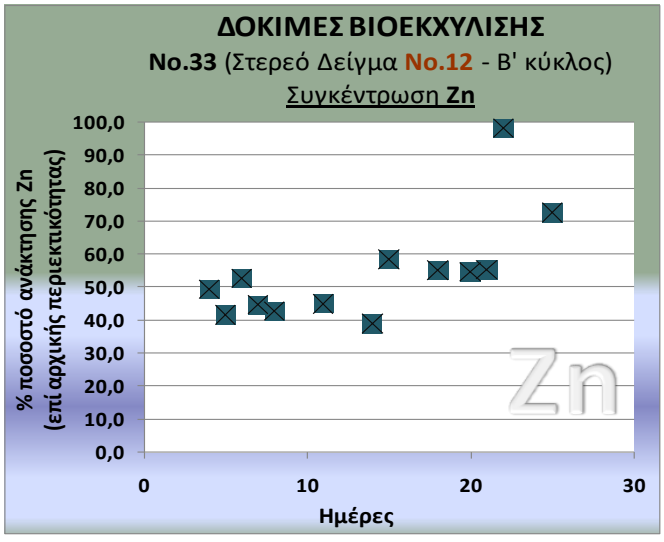








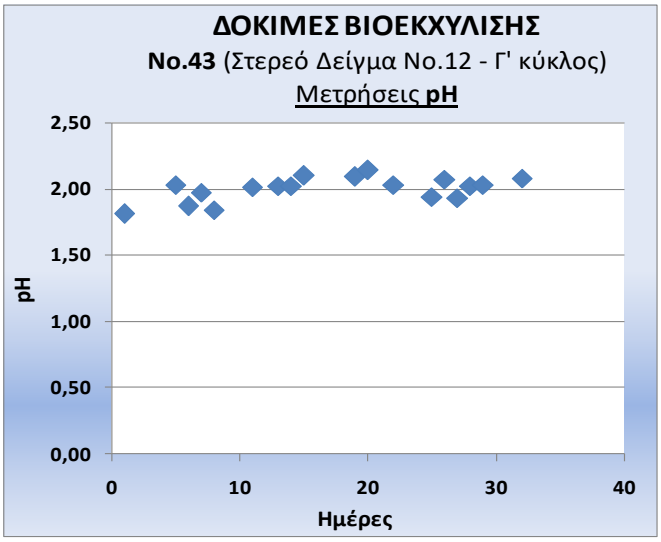


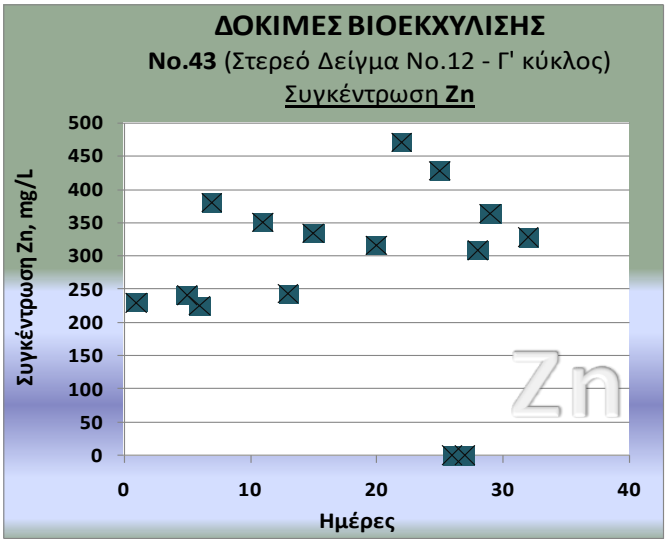


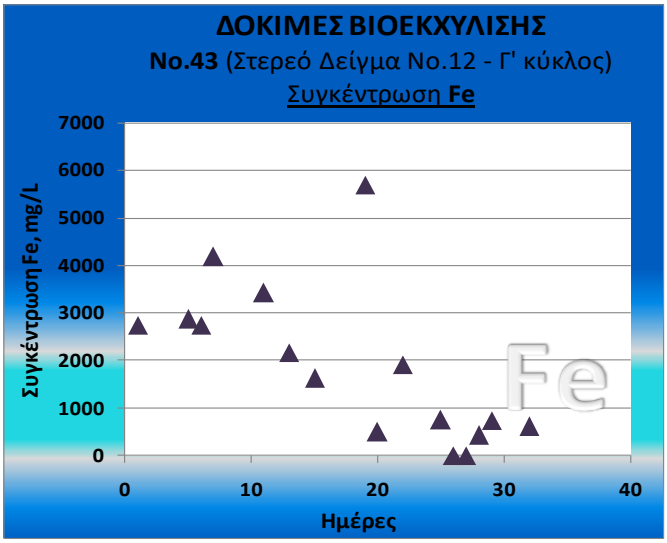
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

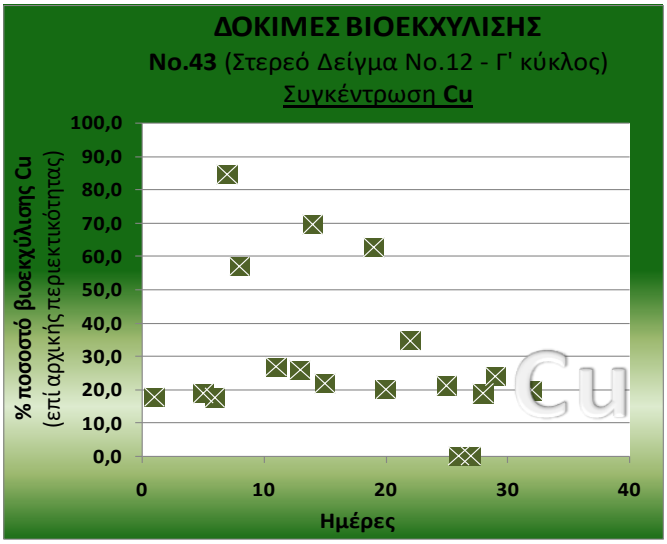
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

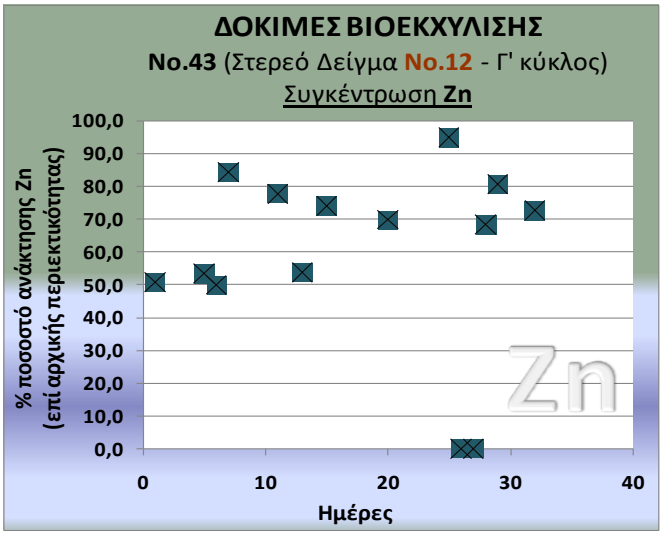
Α' Καλλιέργεια – Γ' Μεταφορά







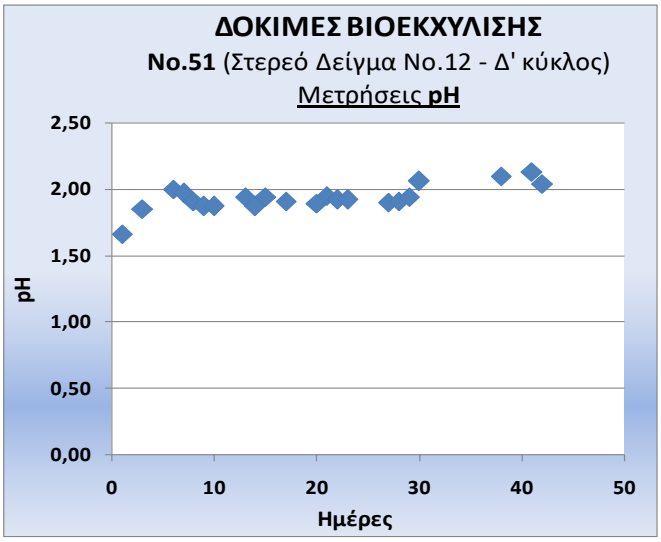


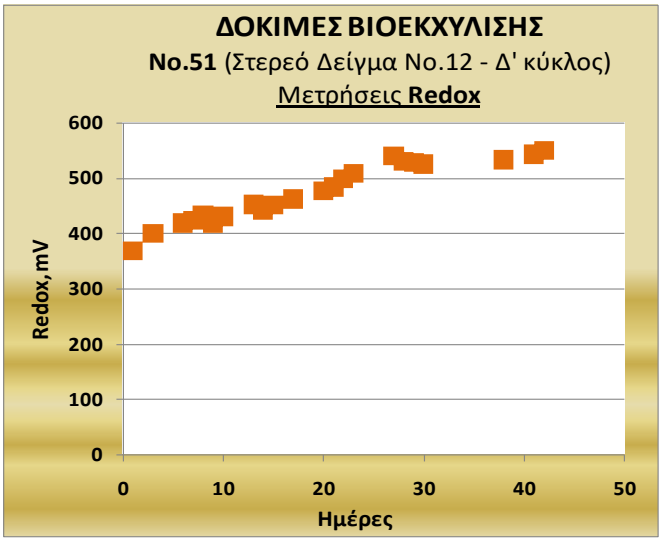


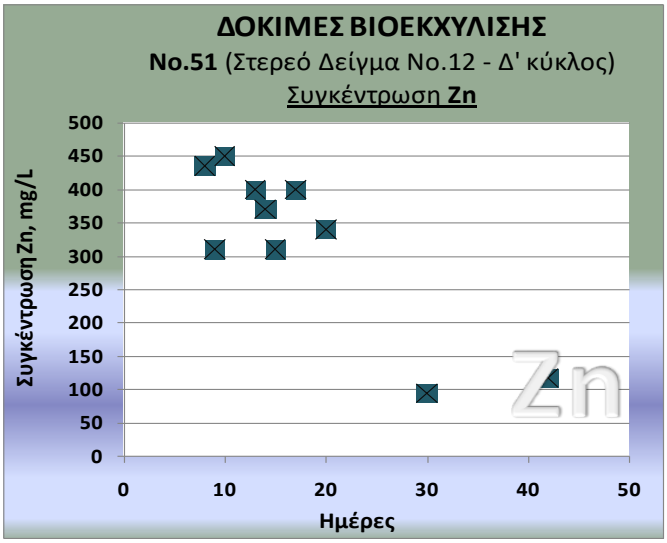
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

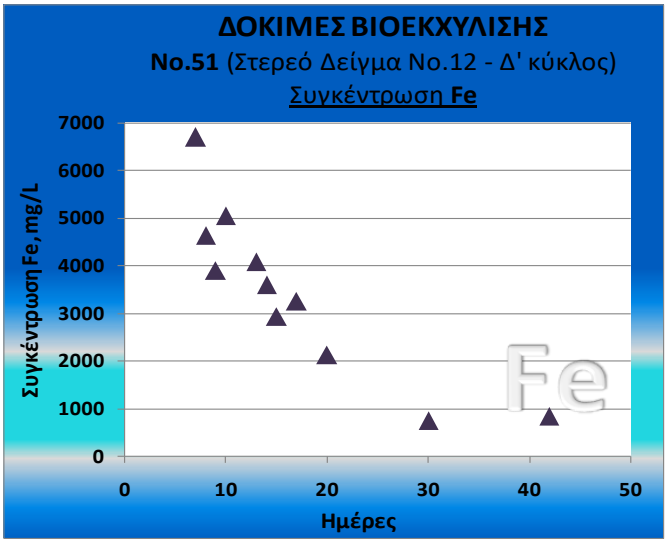
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

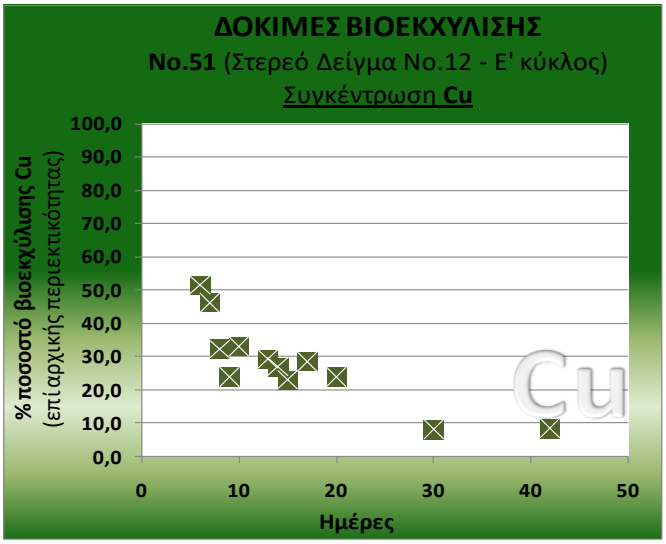
Α' Καλλιέργεια – Δ' Μεταφορά

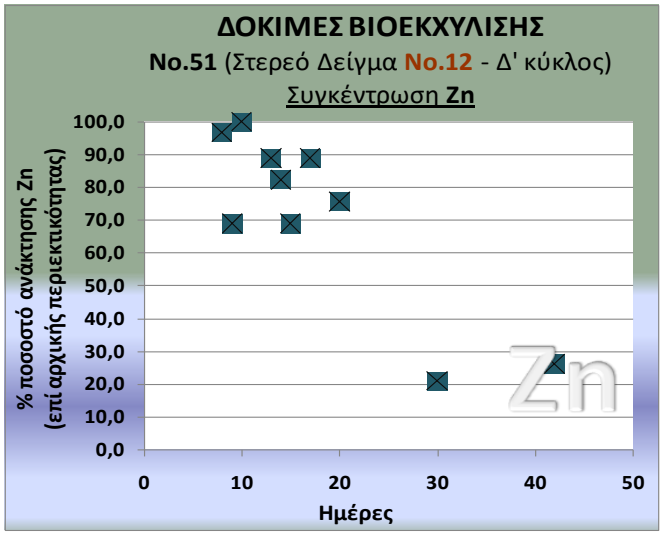








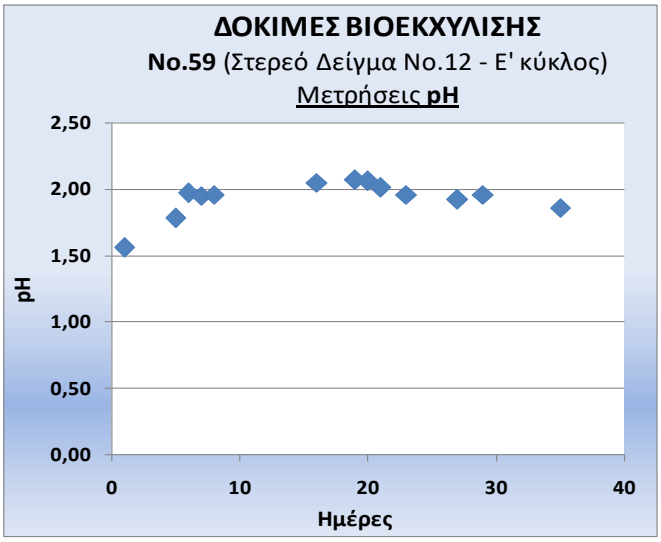


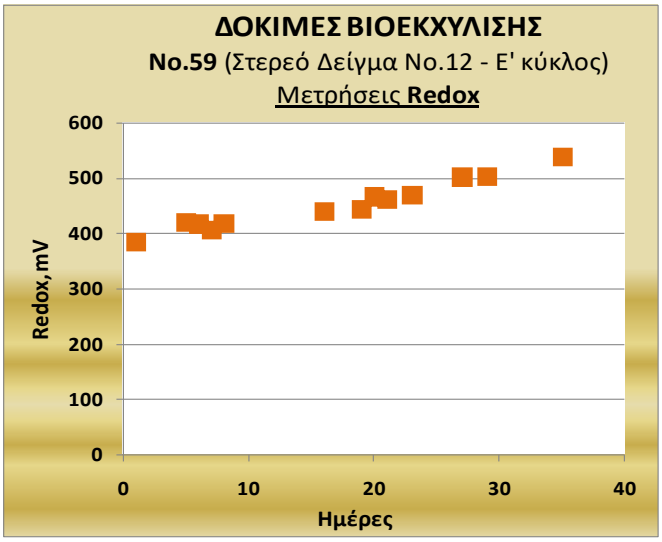


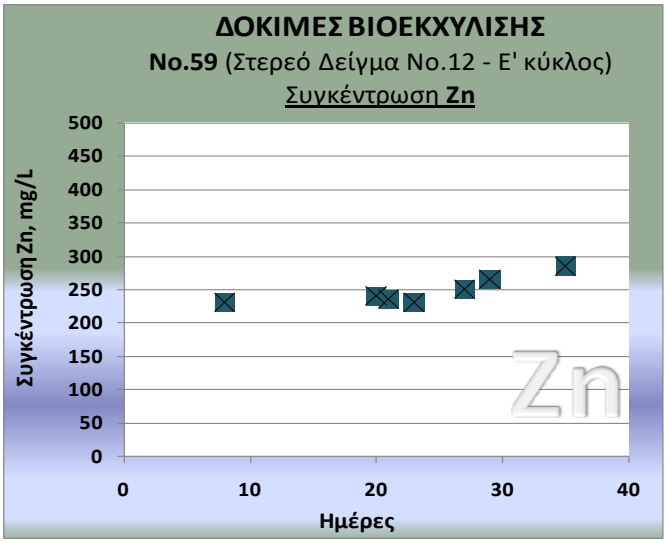
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.12

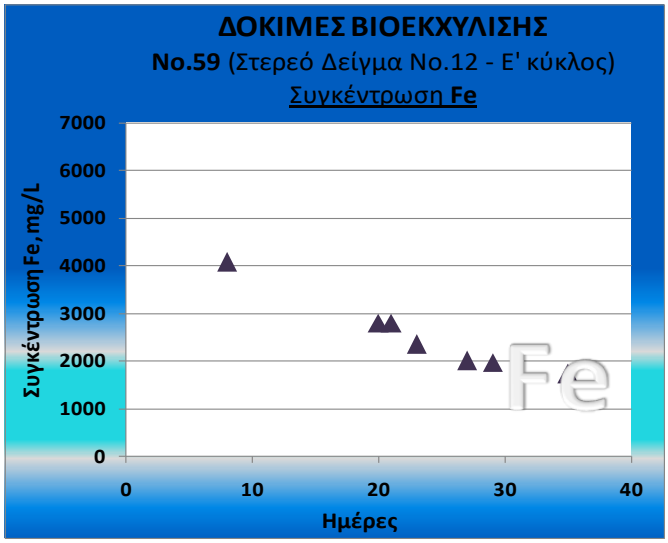
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

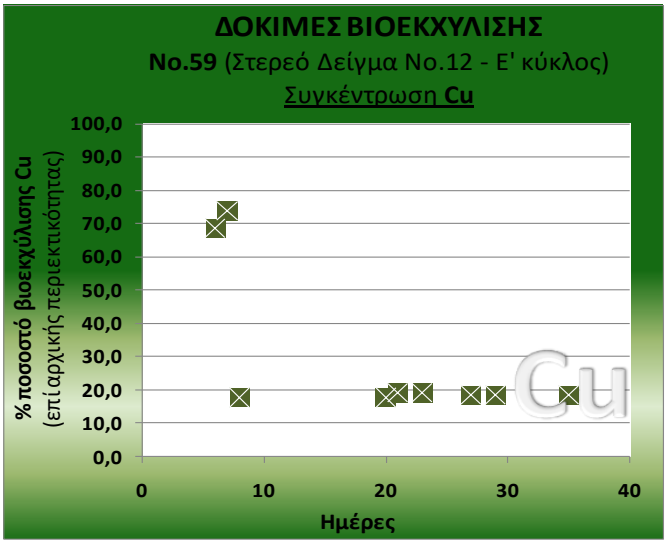
Α' Καλλιέργεια – Ε' Μεταφορά

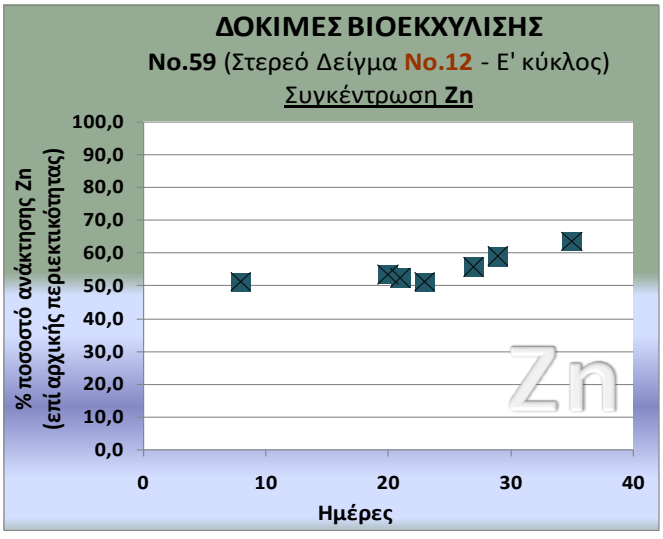








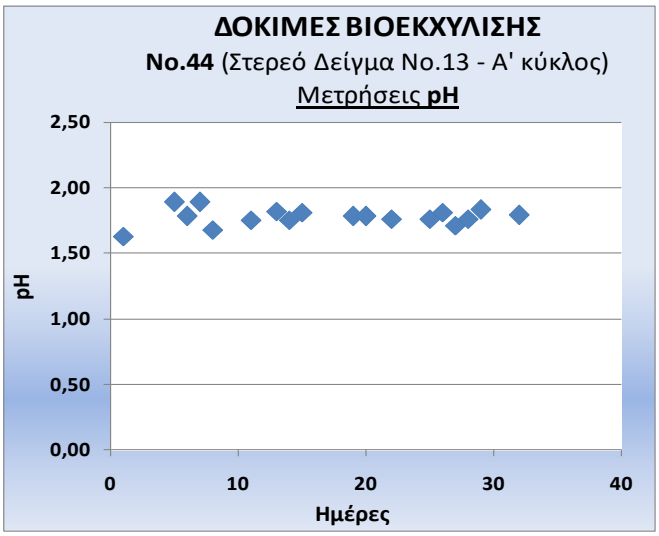


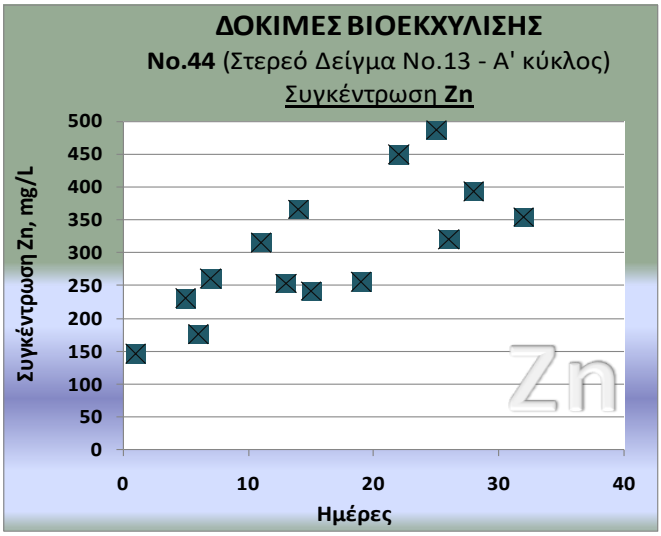


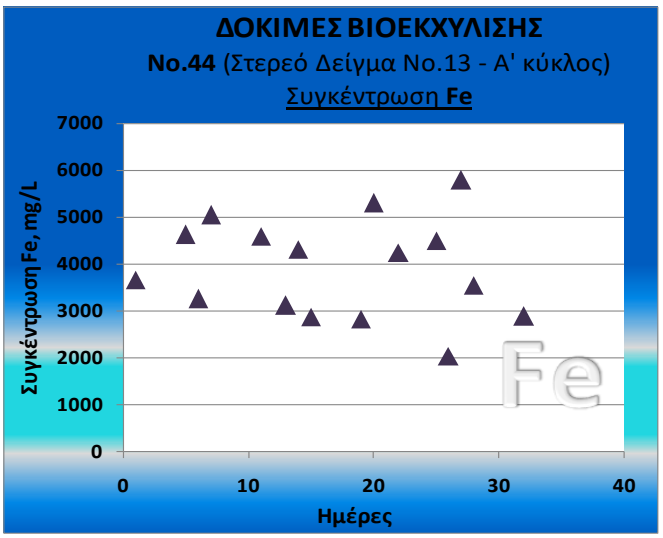
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.13

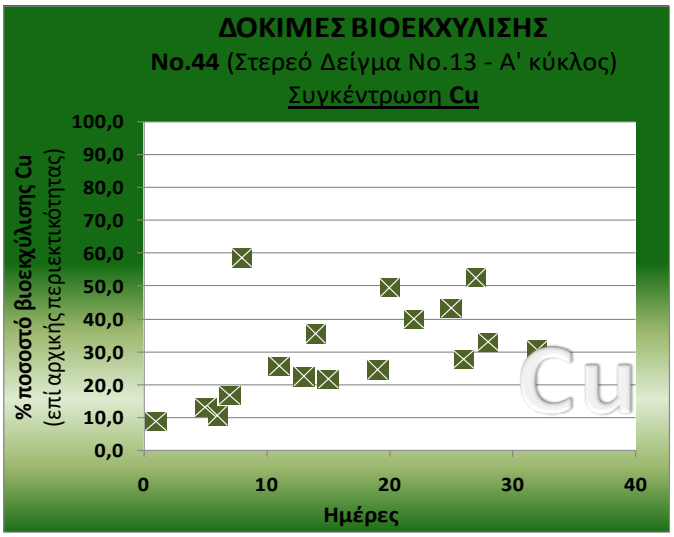
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

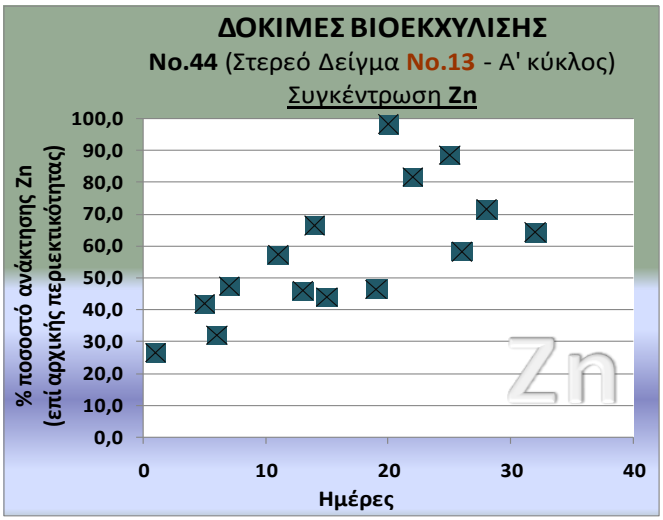
Α' Μεταφορά







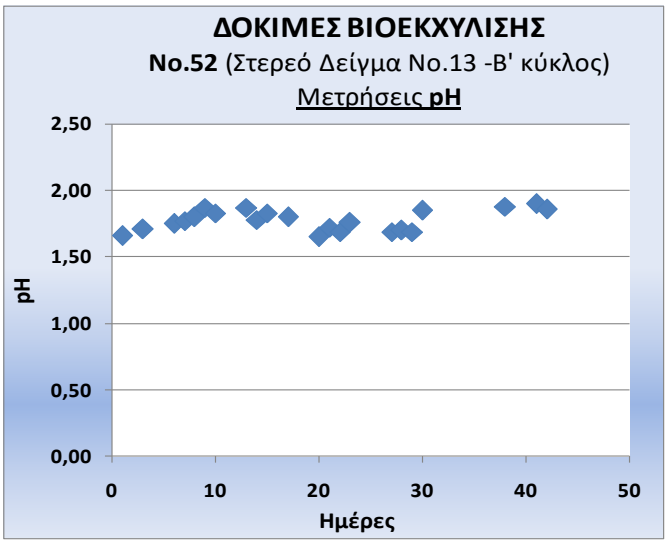


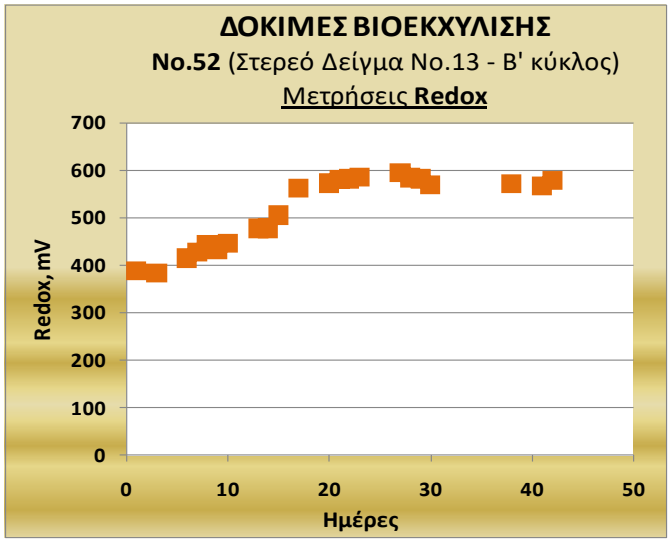


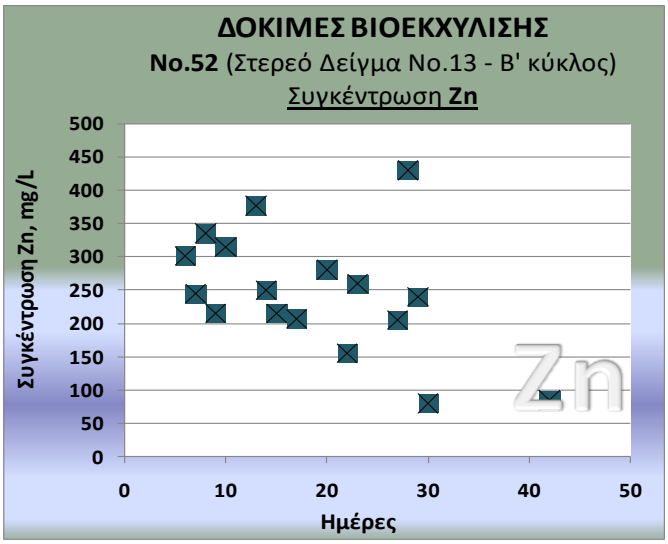
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.13

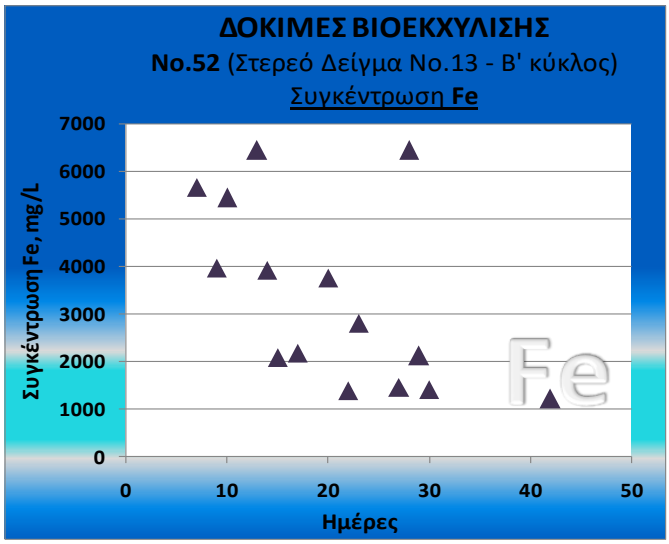
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

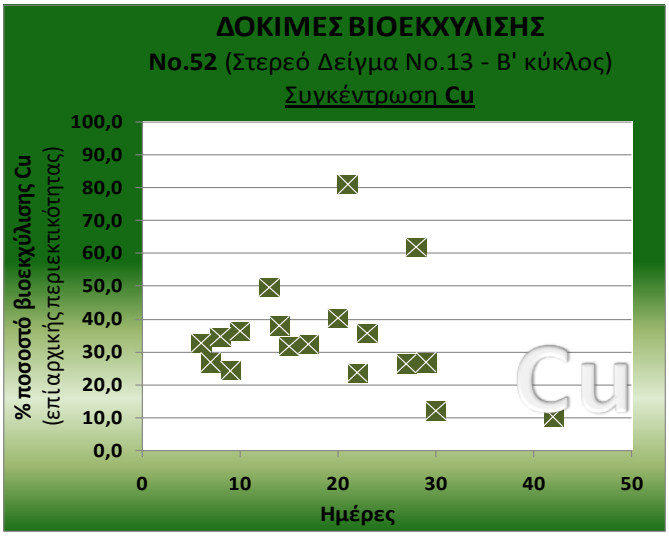
Β' Μεταφορά

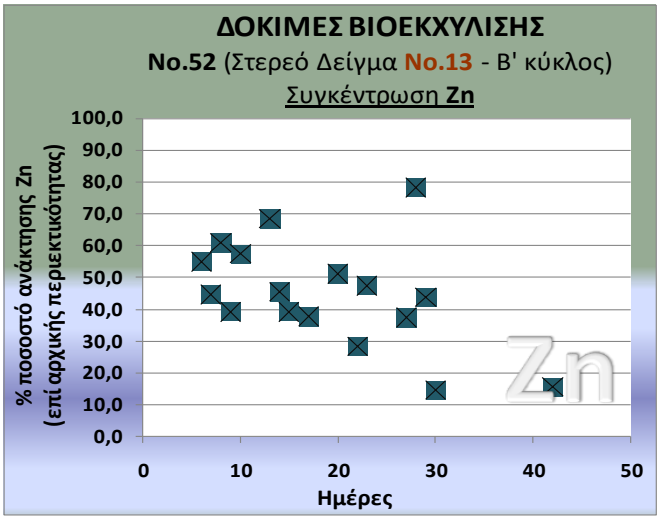






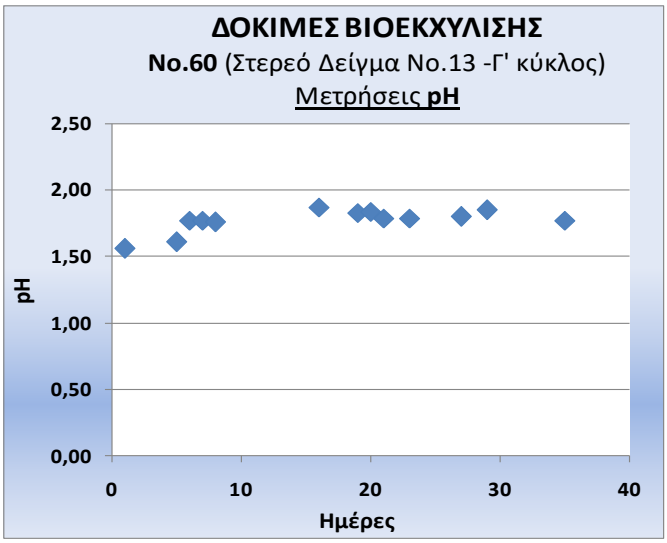


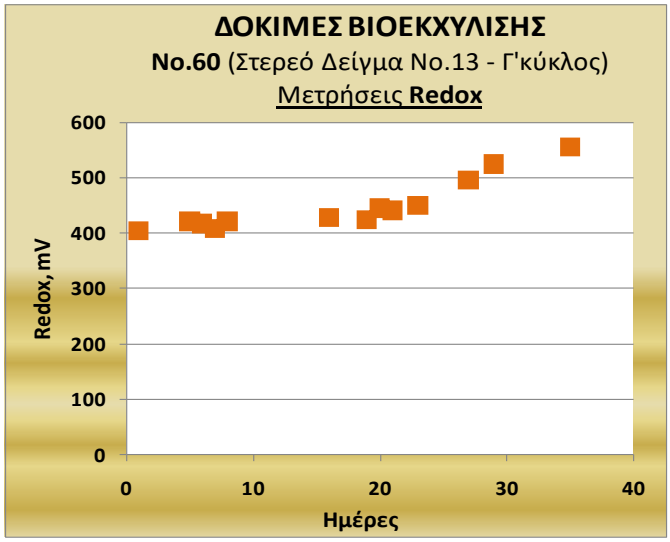


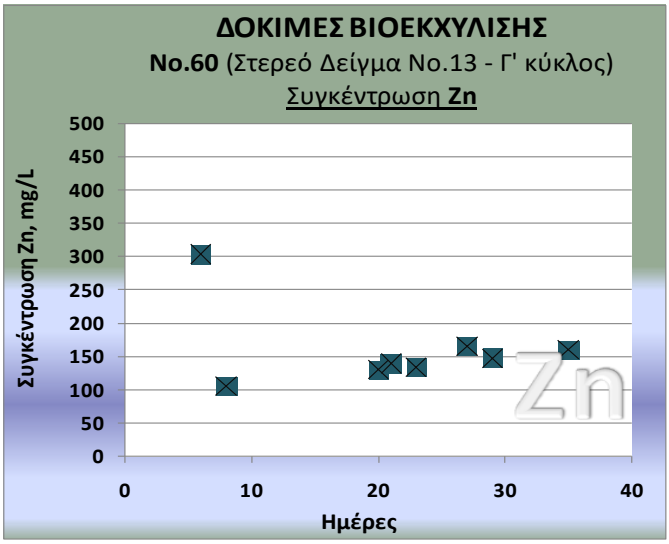


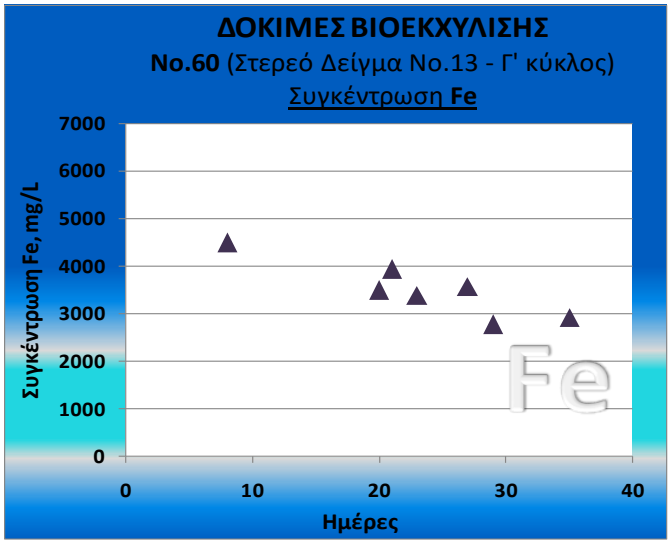
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.13

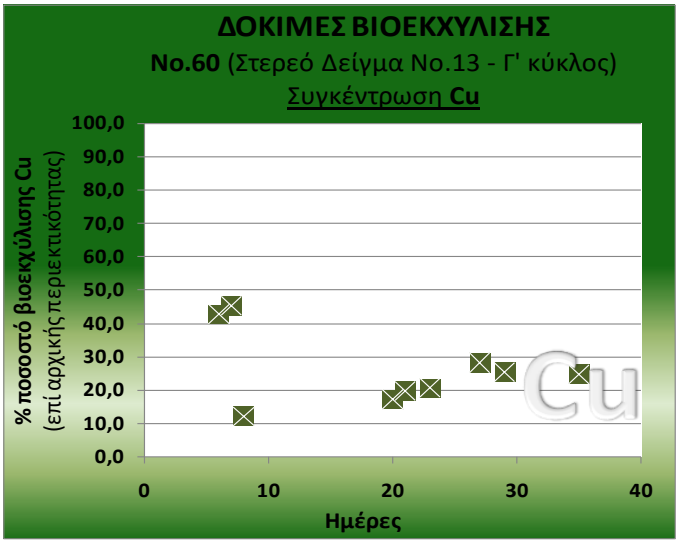
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

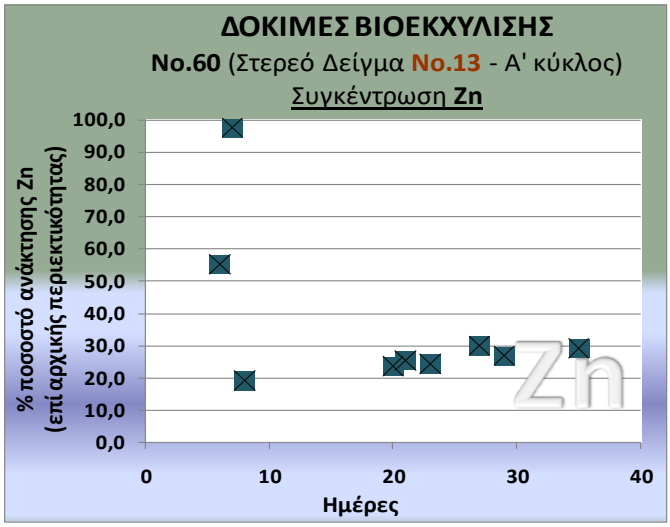






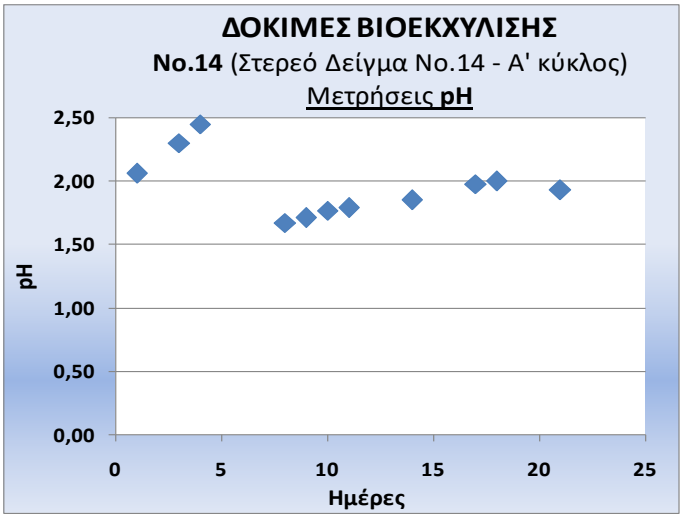


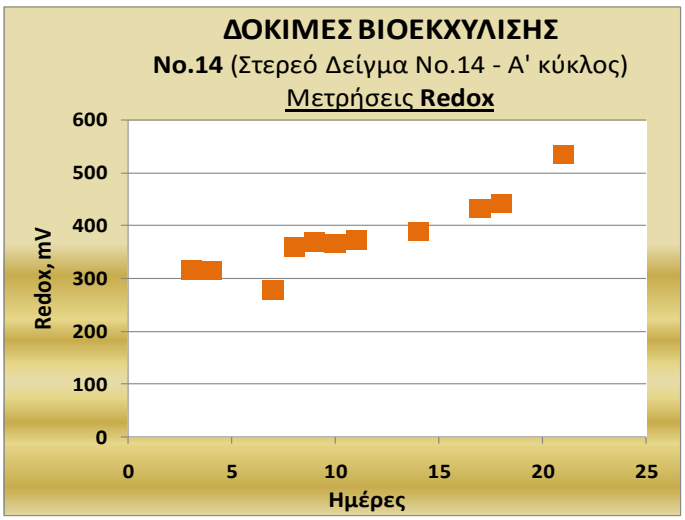


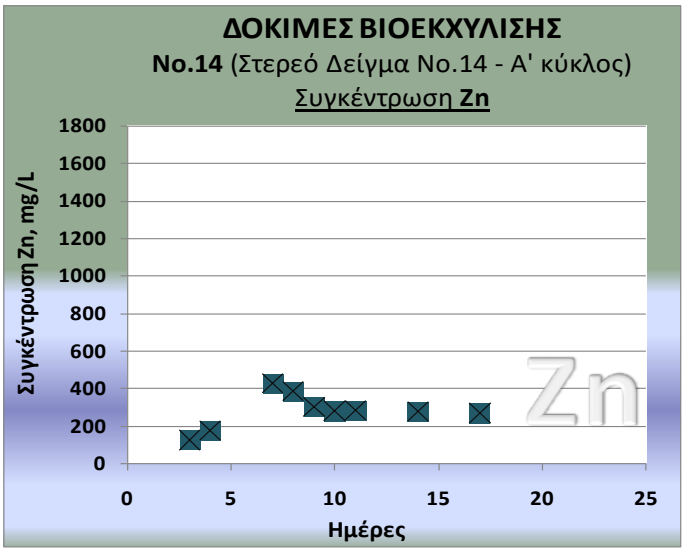


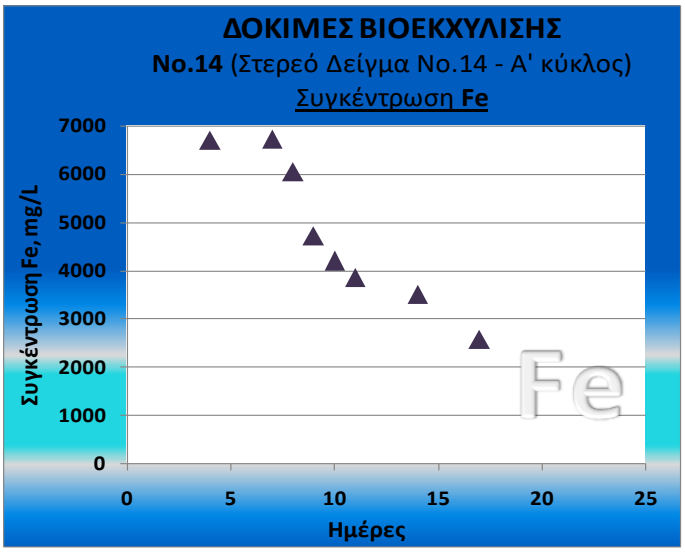
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

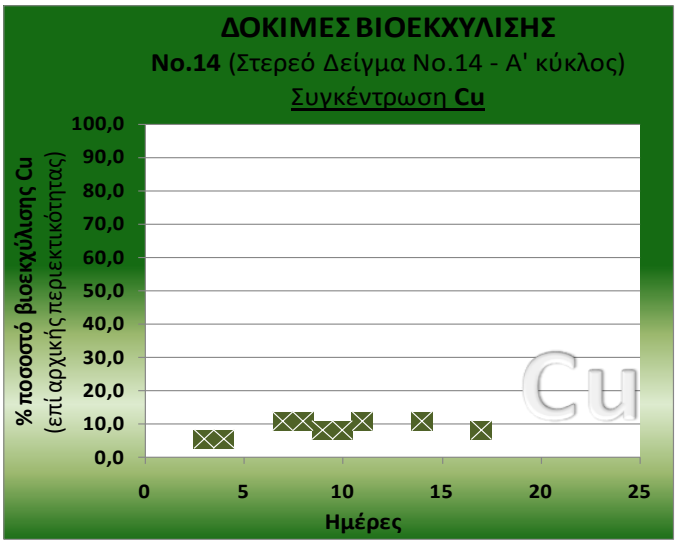
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

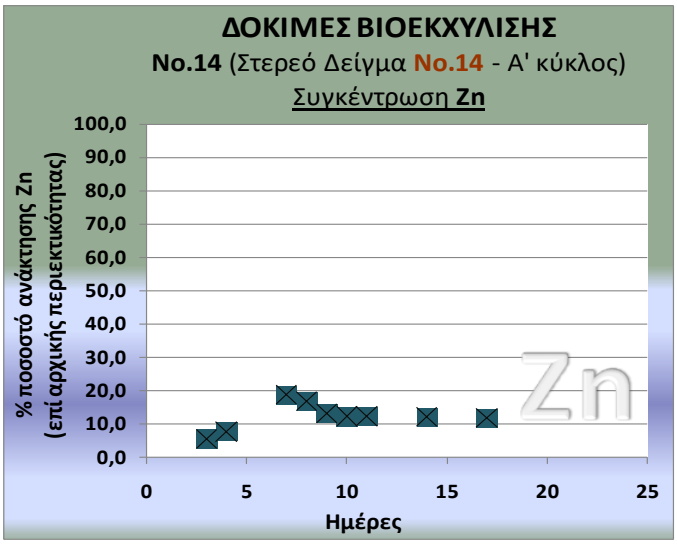








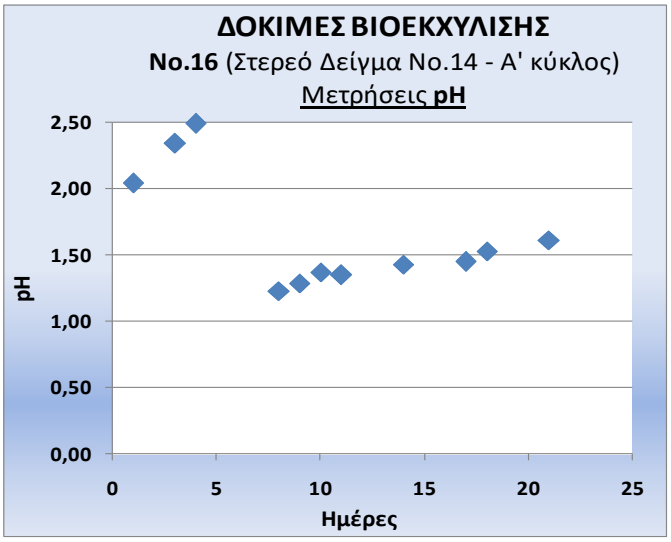


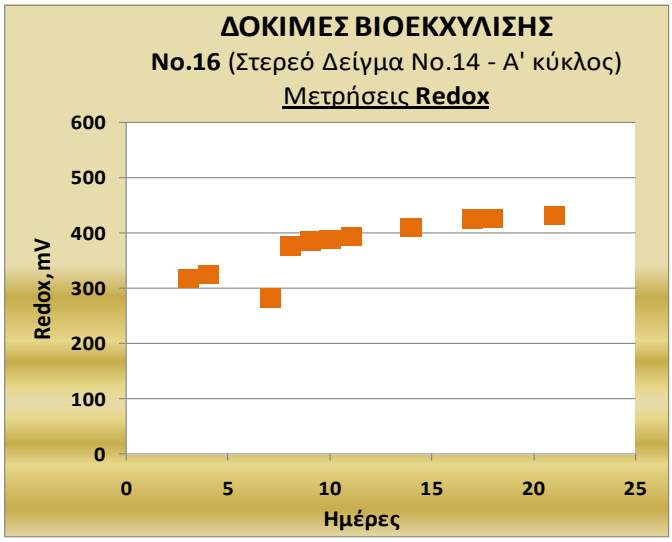


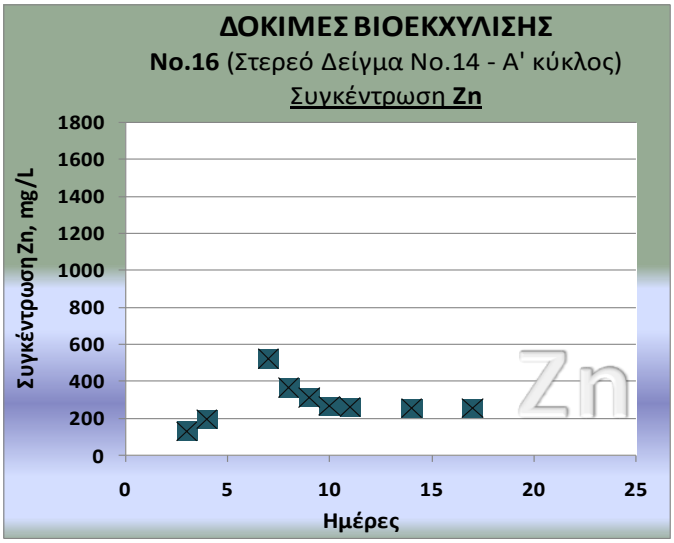
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

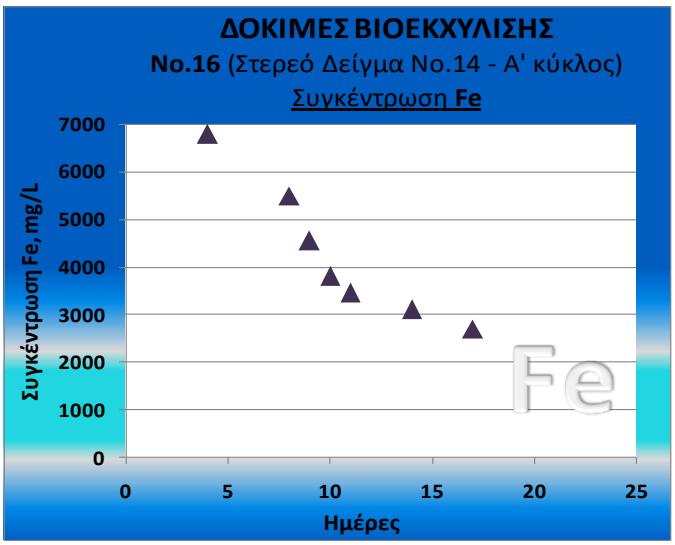
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

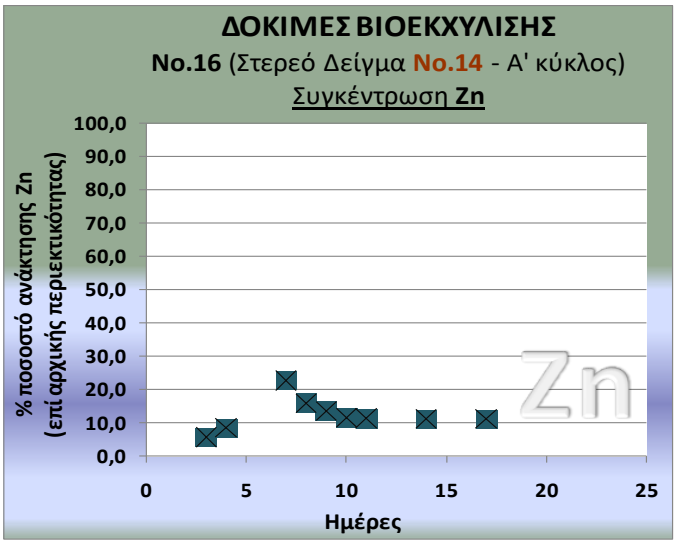
Β' Καλλιέργεια – Α' Μεταφορά







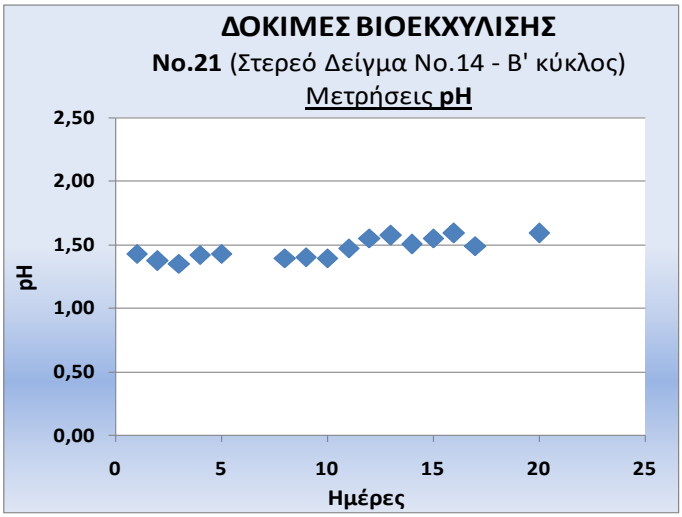


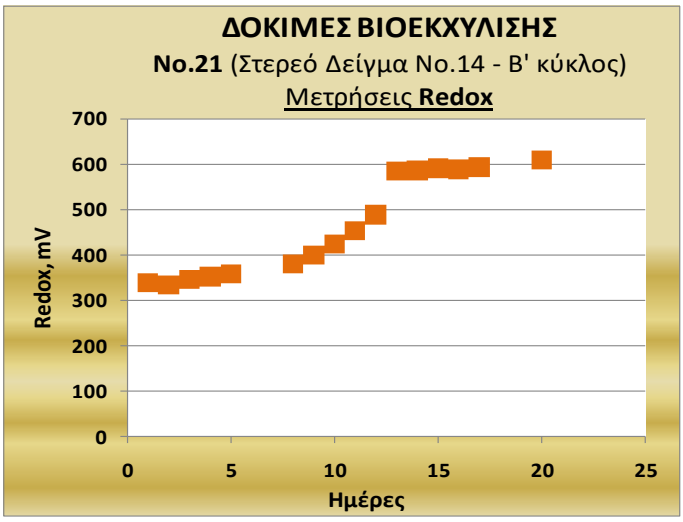


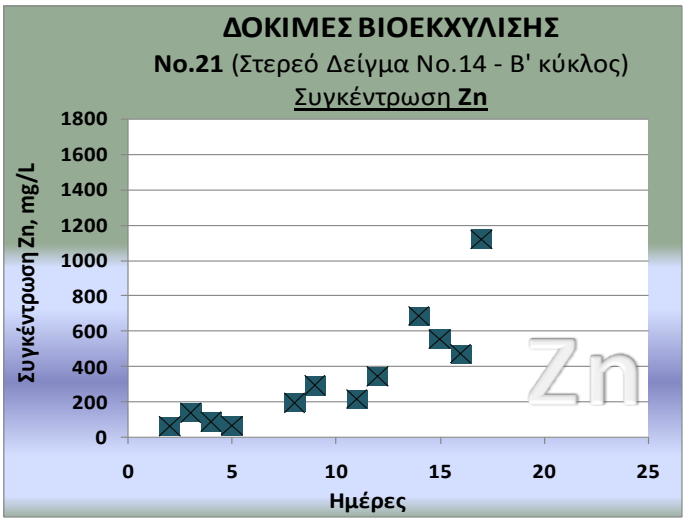
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

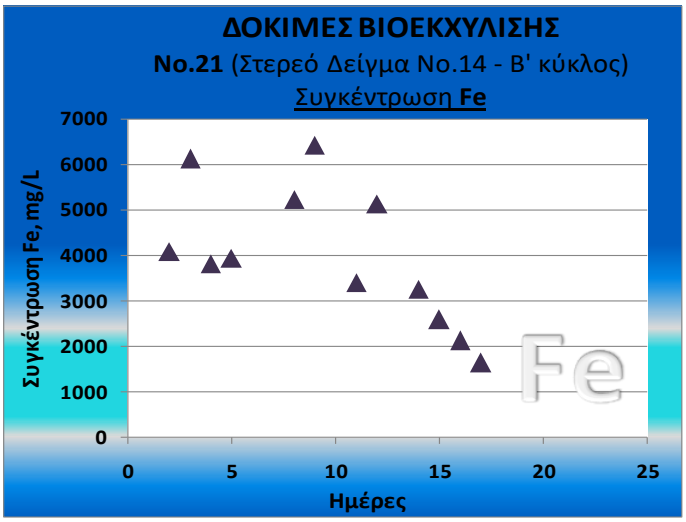
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

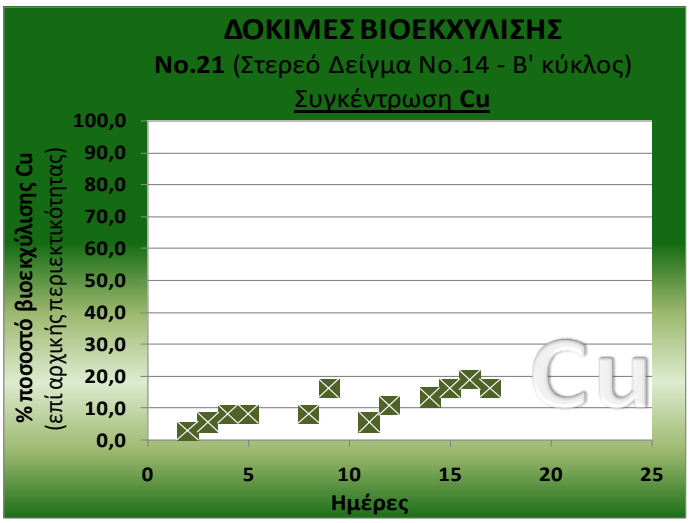
Α' Καλλιέργεια – Β' Μεταφορά

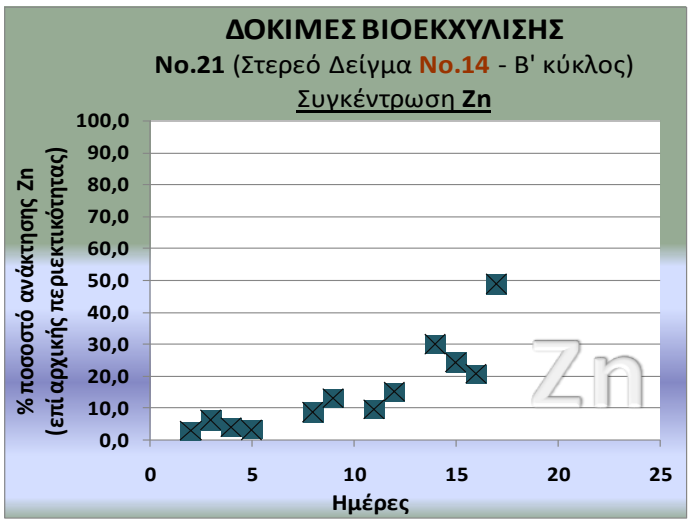








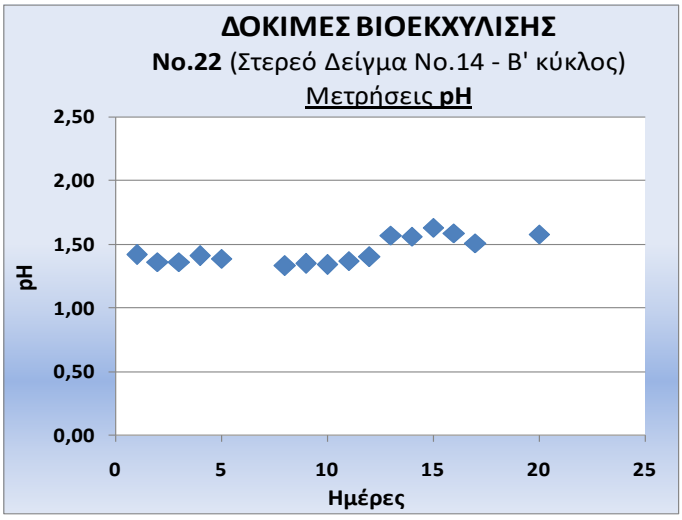


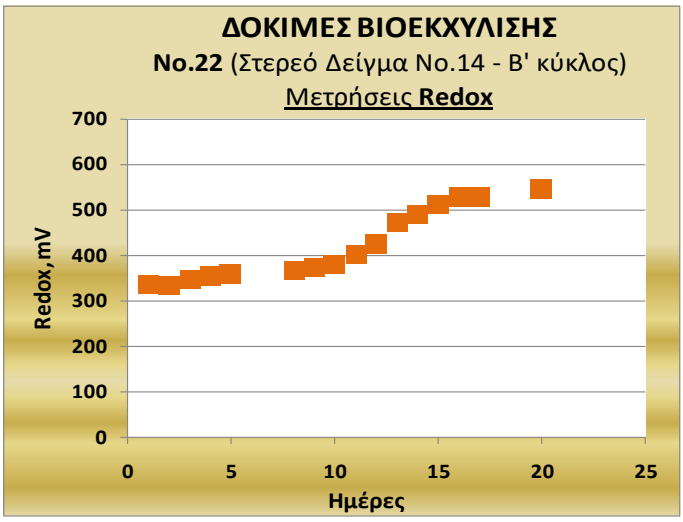


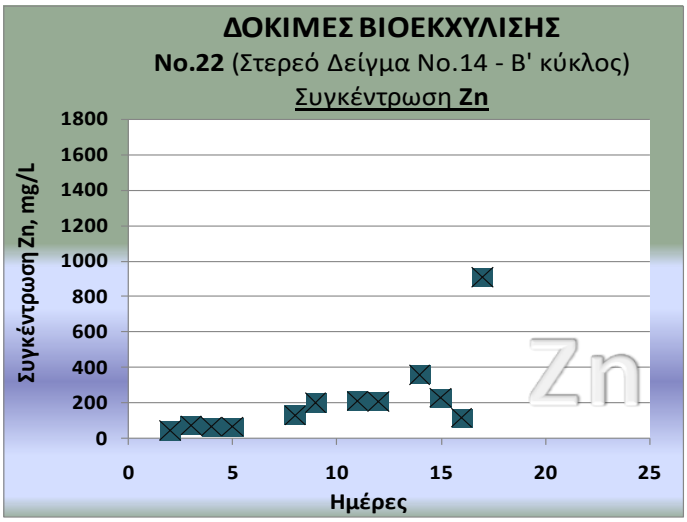
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

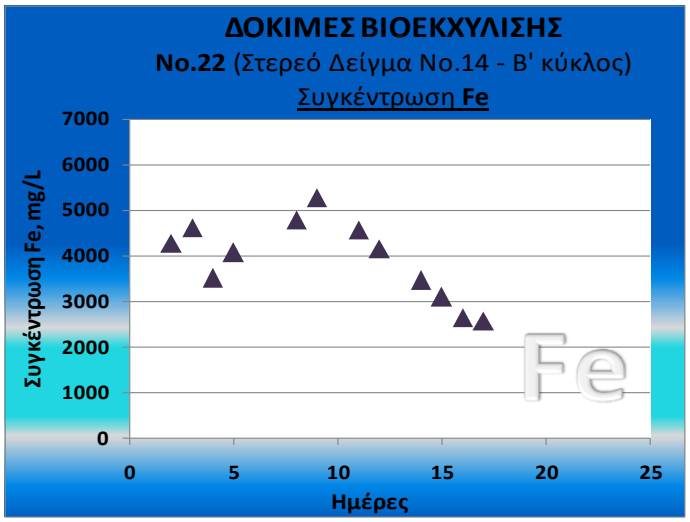
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

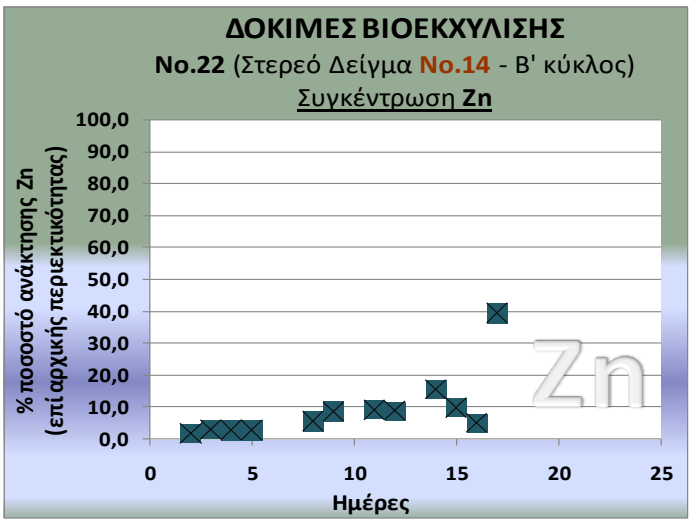
Β' Καλλιέργεια – Β' Μεταφορά







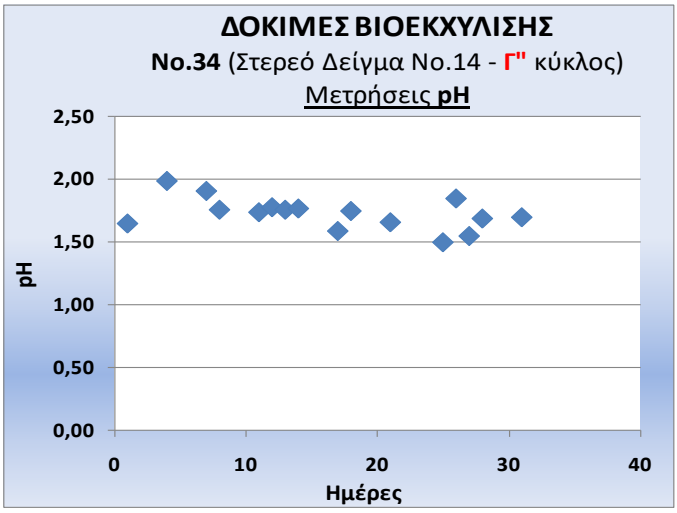


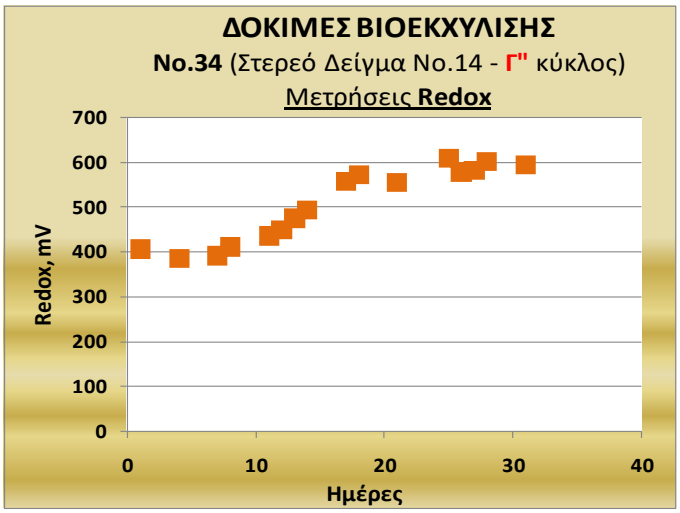


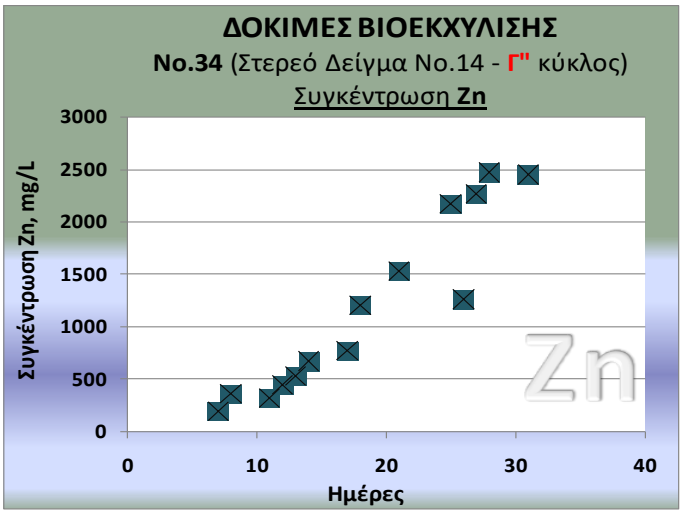
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

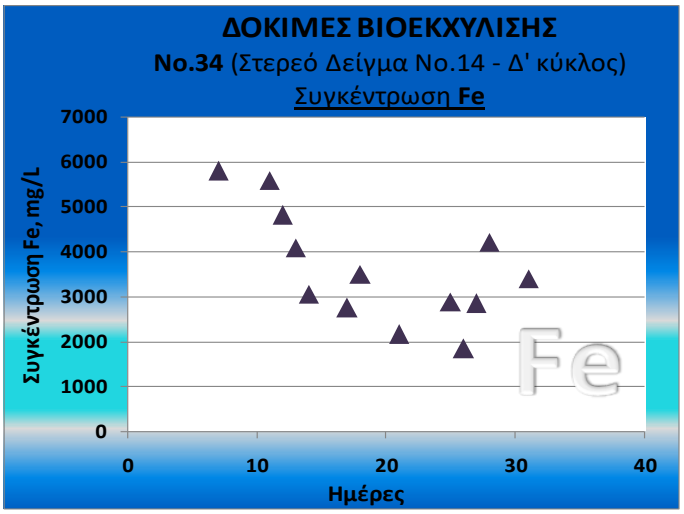
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

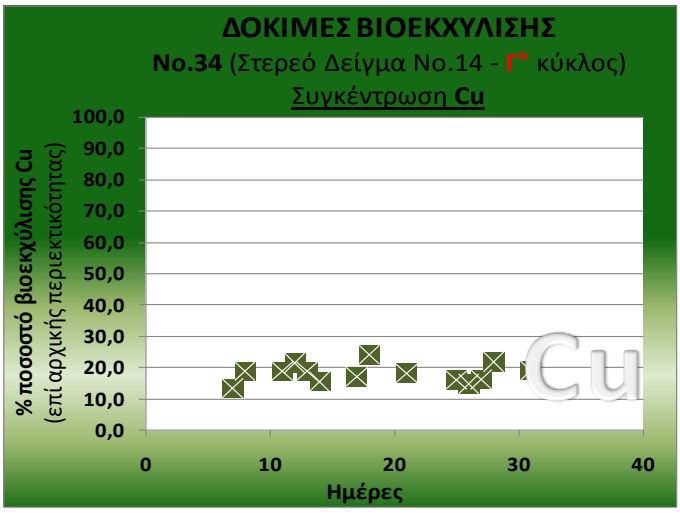
Α' Καλλιέργεια – Γ' Μεταφορά

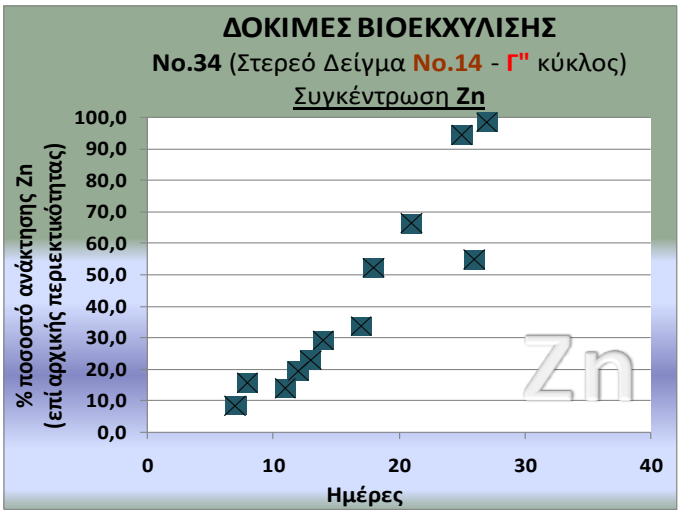








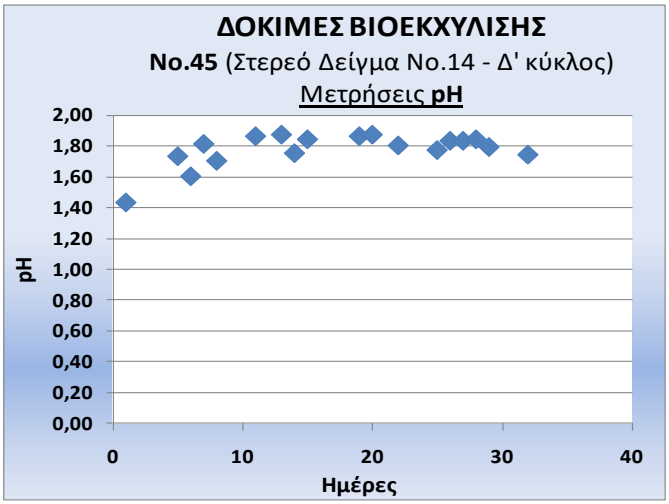


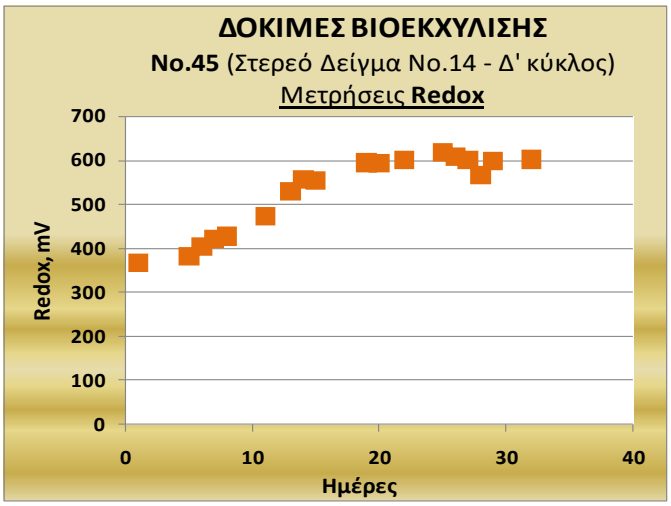


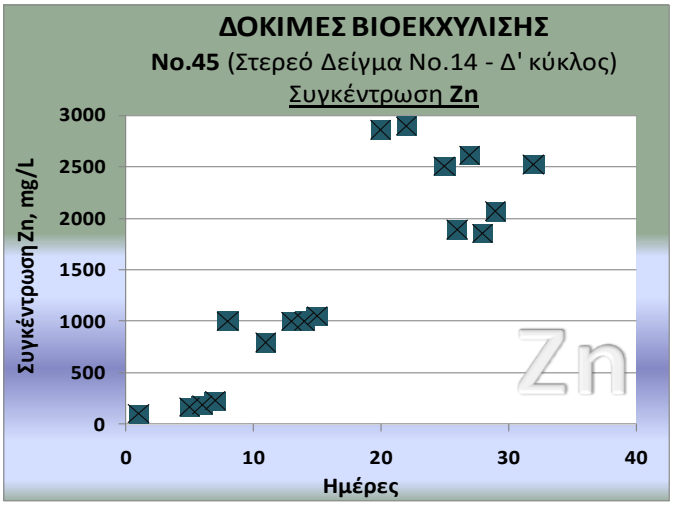
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

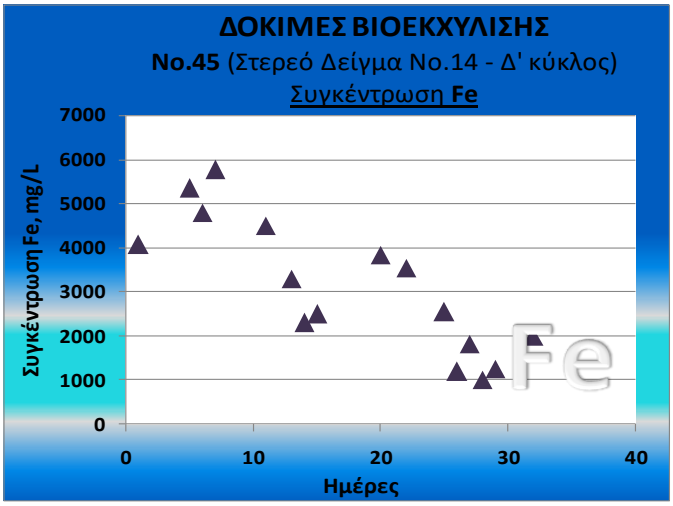
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

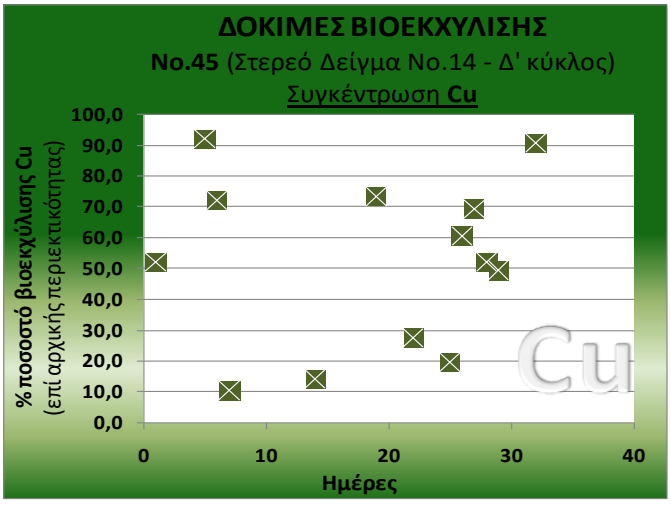
Α' Καλλιέργεια – Δ' Μεταφορά

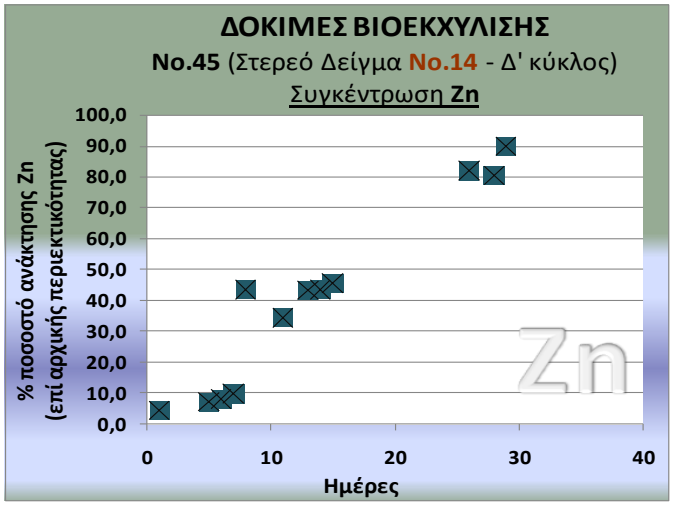








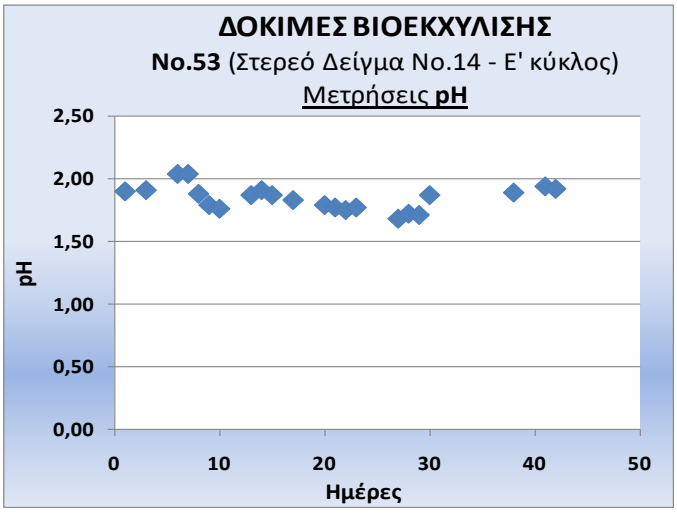


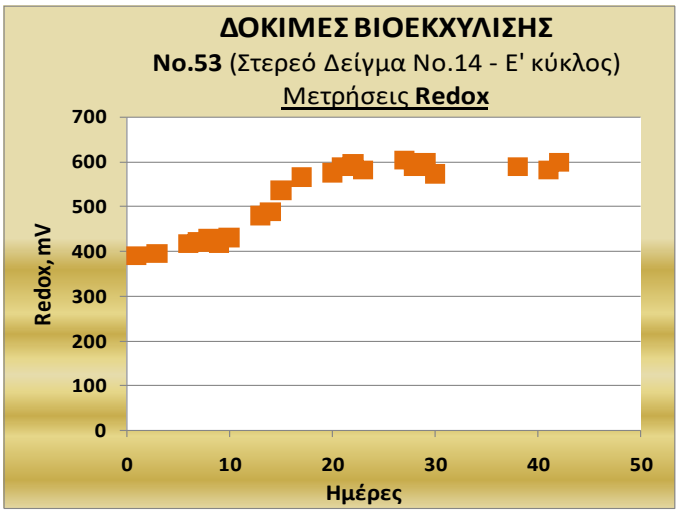


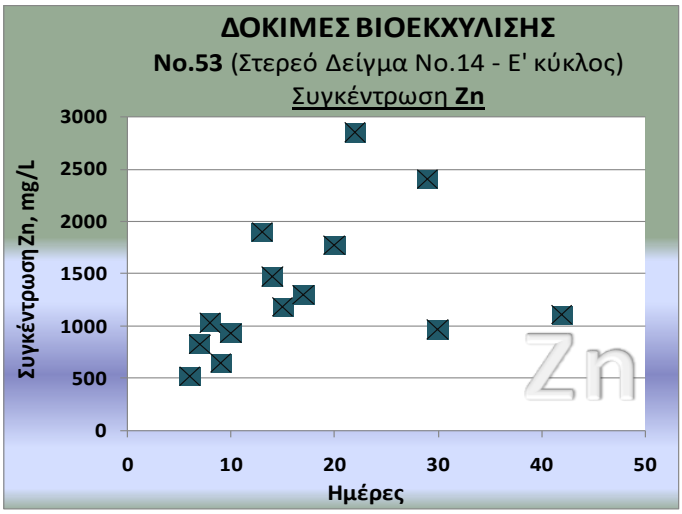
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

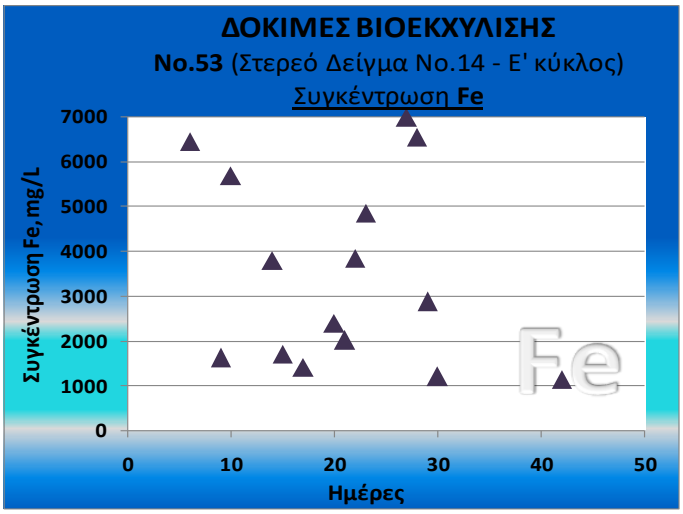
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

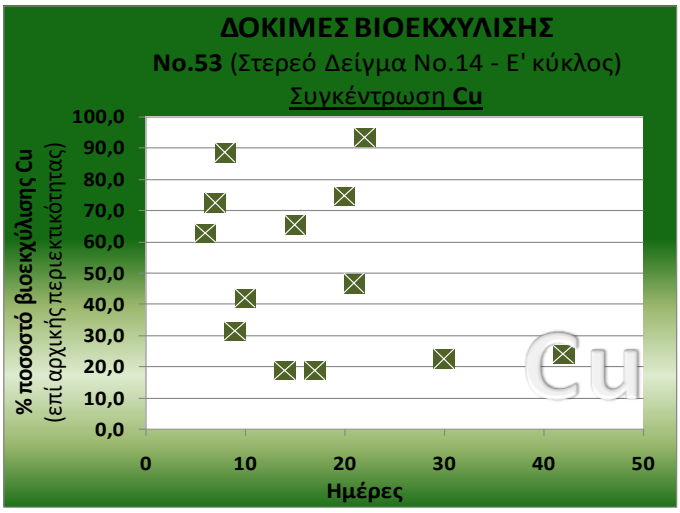
Α' Καλλιέργεια – Ε' Μεταφορά

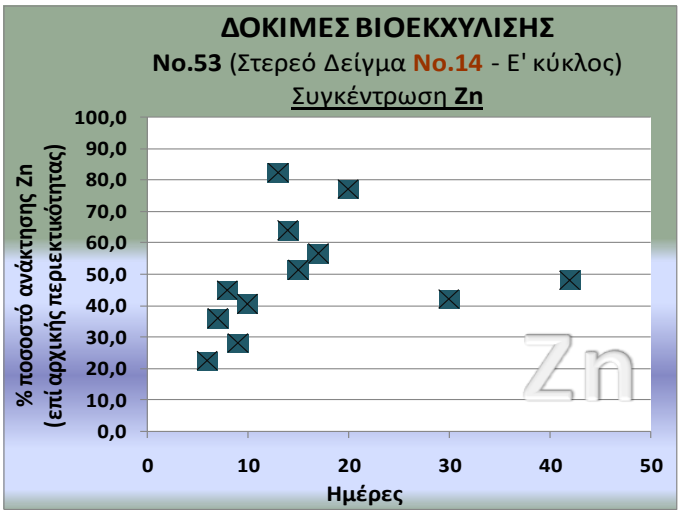








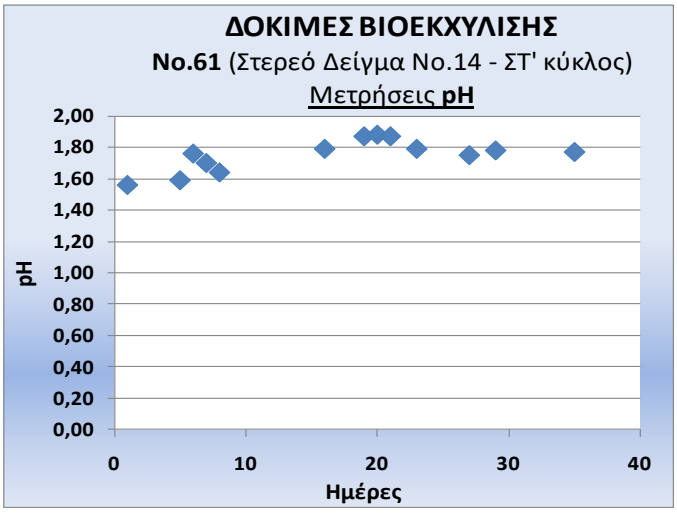


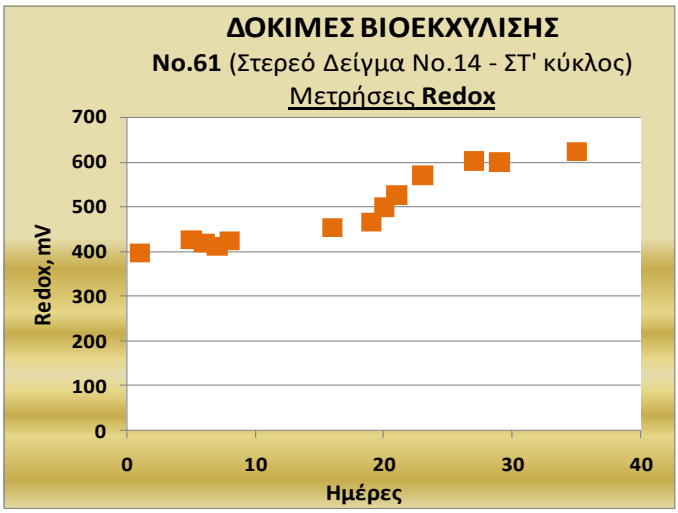


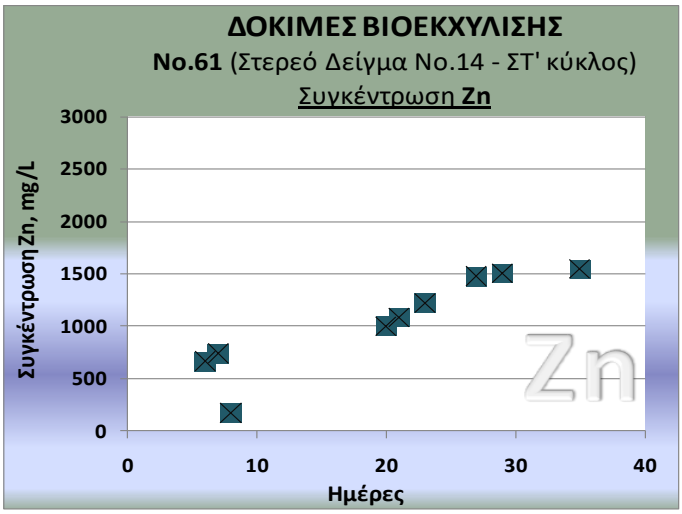
ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

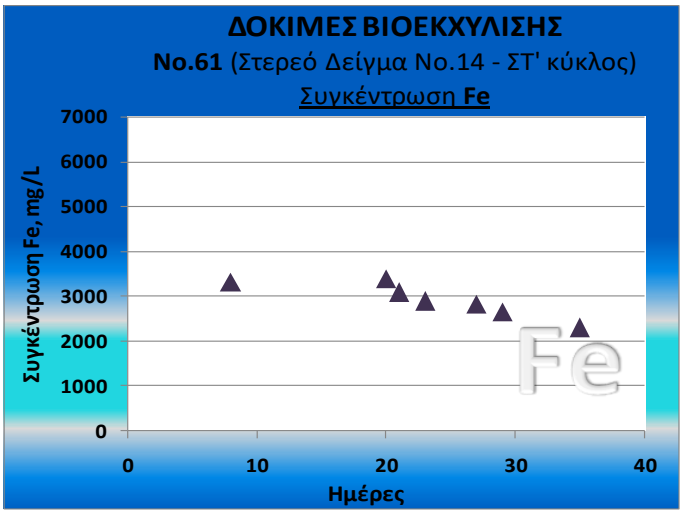
ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

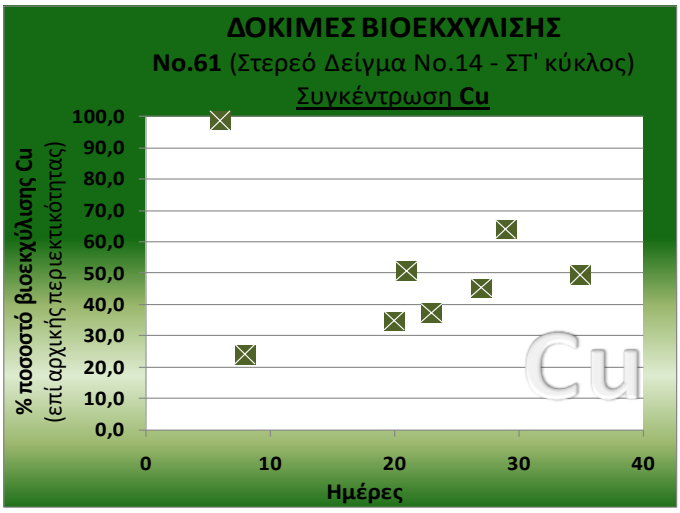
Α' Καλλιέργεια – ΣΤ' Μεταφορά

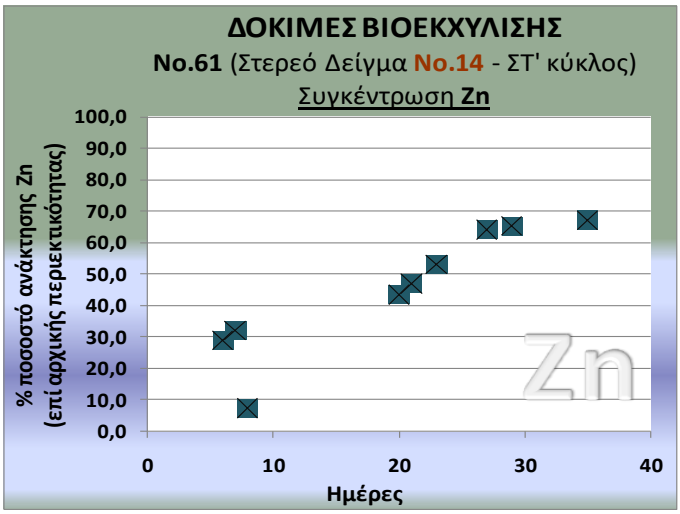








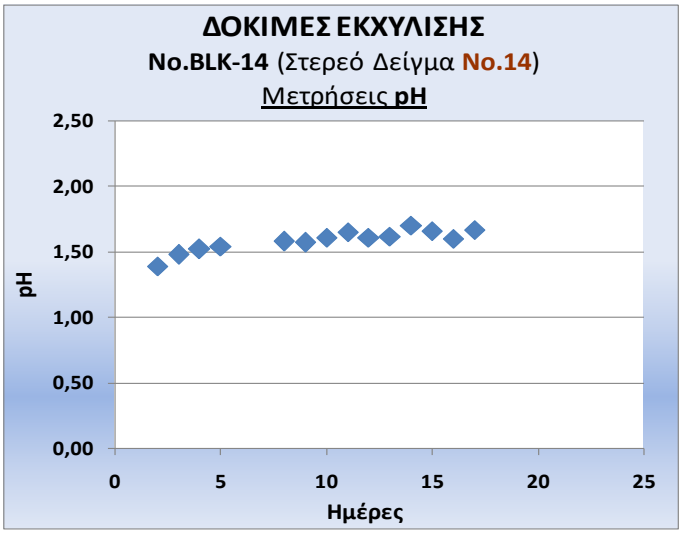


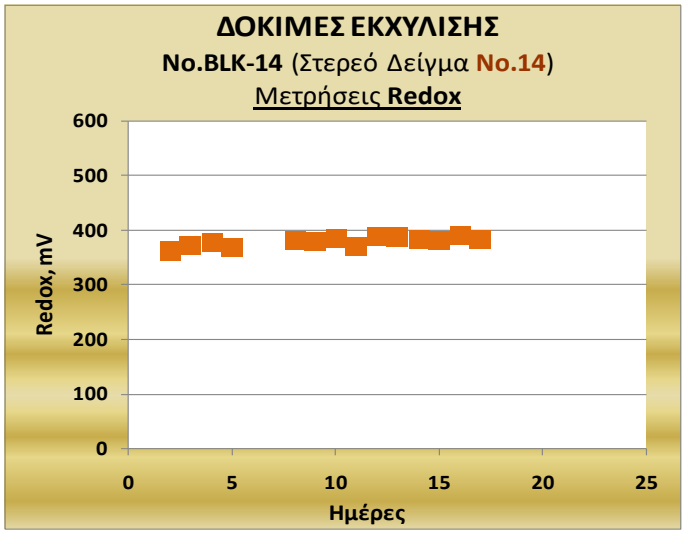


ΣΤΕΡΕΟ ΔΕΙΓΜΑ No.14

ΠΥΚΝΟΤΗΤΑ ΠΟΛΦΟΥ: 5%

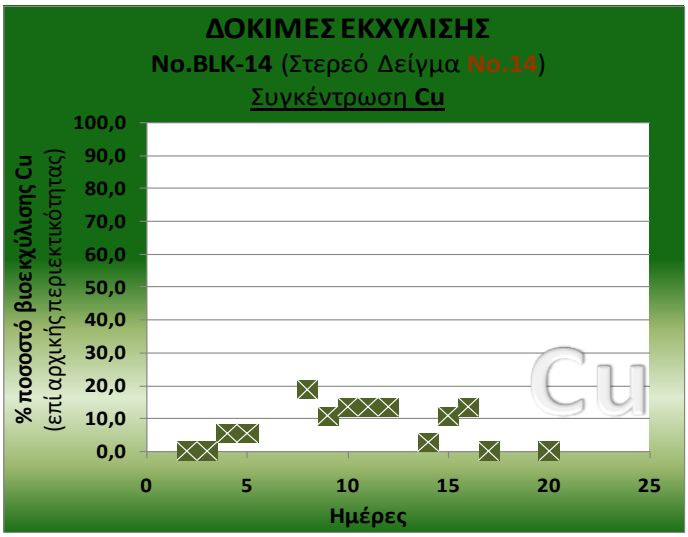
ΧΩΡΙΣ ΒΑΚΤΗΡΙΑ

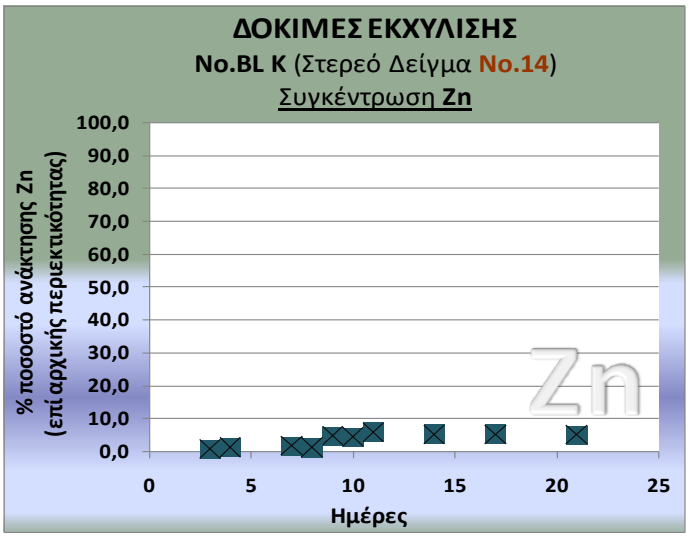

ΔΟΚΙΜΕΣ ΕΚΧΥΛΙΣΗΣ
No.BLK-14 (Στερεό Δείγμα No.14)
Μετρήσεις pH
pH
Ημέρες


ΔΟΚΙΜΕΣ ΕΚΧΥΛΙΣΗΣ
No.BLK-14 (Στερεό Δείγμα No.14)
Μετρήσεις Redox
Redox, mV
Ημέρες


ΔΟΚΙΜΕΣ ΕΚΧΥΛΙΣΗΣ
No.BLK-14 (Στερεό Δείγμα No.14)
Συγκέντρωση Zn
Συγκέντρωση Zn, mg/L
Zn
Ημέρες


ΔΟΚΙΜΕΣ ΕΚΧΥΛΙΣΗΣ
No.BLK-14 (Στερεό Δείγμα No.14)
Συγκέντρωση Fe
Συγκέντρωση Fe, mg/L
Fe
Ημέρες


ΔΟΚΙΜΕΣ ΕΚΧΥΛΙΣΗΣ
No.BLK-14 (Στερεό Δείγμα No.14)
Συγκέντρωση Cu
% ποσοστό βιοεκχύλισης Cu
(επί αρχικής περιεκτικότητας)
Cu
Ημέρες


ΔΟΚΙΜΕΣ ΕΚΧΥΛΙΣΗΣ
No.BL K (Στερεό Δείγμα No.14)
Συγκέντρωση Zn
% ποσοστό ανάκτησης Zn
(επί αρχικής περιεκτικότητας)
Zn
Ημέρες