



- **Recommended Perkin-Elmer ICP Conditions for Ammonium-Citrate EDTA Direct Available P**
- Power = 1400 kW (or 1500 if necessary)
- Plasma Coolant = 15 L/min
- Auxiliary = 0.2 L/min
- Pump Speed = 1.5
- Spray Chamber = Baffled Type
- Sample Pump Tube = orange/white (flow rate = 0.23 ml/min)
- Internal Standard/Ionization Buffer Pump Tube = Red/Red (flow rate = 0.80 ml/min)
- **Recommended Pump Setting, under Configure Pump option:**
- **Select gray/gray, which has a flow rate of 1.00 ml/min (note: orn/wht @ 0.23 + red/red @ 0.80 = 1.03 ml/min)**
- Waste Pump Tube = Yellow/Yellow (flow rate = 1.20 ml/min, but may need larger)

Study Samples to Assess ICP Corrections for Low P

Sample #	Identification #	Results
1	Magruder 2011-07 10-40-0	Direct Available Phosphate (Quimociac) - 40.56 ± 0.36 Direct Available Phosphate (ICP) - 40.44 ± 0.77 Direct Available Phosphate (Method Group) - 40.47 ± 0.55 Total Phosphate (Method Group) - 40.82 ± 1.13
2	Magruder 2013-01 12-40-0	Direct Available Phosphate (Quimociac) - 40.48 ± 0.52 Direct Available Phosphate (ICP) - 39.95 ± 0.63 Direct Available Phosphate (Method Group) - 40.22 ± 0.55 Total Phosphate (Method Group) - 40.85 ± 0.58
3	AFPC 2013-07 11-40-0 MAP-S	Direct Available Phosphate (Quimociac) - 40.94 ± 0.65 Direct Available Phosphate (ICP) - 40.27 ± 0.62 Direct Available Phosphate (Method Group) - 40.68 ± 1.01 Total Phosphate (Method Group) - 41.09 ± 0.37
4	Magruder 2012-03 18-46-0 DAP	Direct Available Phosphate (Quimociac) - 46.22 ± 0.30 Direct Available Phosphate (ICP) - 46.22 ± 0.78 Direct Available Phosphate (Method Group) - 46.29 ± 0.53 Total Phosphate (Method Group) - 46.55 ± 0.77
5	Magruder 2013-10 A 18-46-0 DAP	Direct Available Phosphate (Quimociac) - 46.32 ± 0.17 Direct Available Phosphate (ICP) - 46.31 ± 0.81 Direct Available Phosphate (Method Group) - 46.27 ± 0.56 Total Phosphate (Method Group) - 46.39 ± 0.46
6	Magruder 2013-03 10-50-0	Direct Available Phosphate (Quimociac) - 51.06 ± 0.84 Direct Available Phosphate (ICP) - 50.34 ± 1.20 Direct Available Phosphate (Method Group) - 50.82 ± 1.01 Total Phosphate (Method Group) - 51.61 ± 0.75
7	Magruder 2013-11 A 11-52-0 MAP	Direct Available Phosphate (Quimociac) - 51.34 ± 0.35 Direct Available Phosphate (ICP) - 51.52 ± 0.47 Direct Available Phosphate (Method Group) - 51.34 ± 0.46 Total Phosphate (Method Group) - 51.51 ± 0.58
8	Magruder 2013-11 A 11-52-0 MAP	Direct Available Phosphate (Quimociac) - 51.34 ± 0.35 Direct Available Phosphate (ICP) - 51.52 ± 0.47 Direct Available Phosphate (Method Group) - 51.34 ± 0.46 Total Phosphate (Method Group) - 51.51 ± 0.58
9	Magruder 2013-05 12-61-0 Reagent MAP	Direct Available Phosphate (Quimociac) - 61.67 ± 0.48 Direct Available Phosphate (ICP) - 60.86 ± 1.03 Direct Available Phosphate (Method Group) - 61.46 ± 0.75 Total Phosphate (Method Group) - 61.41 ± 0.74
10	Magruder 2010-02 32-0-10	Direct Available Phosphate (Quimociac) - 0.0 ± 0.0 Direct Available Phosphate (ICP) - 0.04 ± 0.04 Direct Available Phosphate (Method Group) - 0.03 ± 0.04 Total Phosphate (Method Group) - 0.07 ± 0.08

Sources: www.magruderchecksample.org and afpc.net

Note: Soluble Potash result for Magruder 2010-02 by STPB Oxalate = 10.13 +/- 0.35 (1 std dev)

	% P2O5 213.620	% P2O5 214.915	% P2O5 178.222	% P2O5 177.436	consensus	Perkin Elmer 5300 ICP (Radial View) Power: 1.5kW Plasma: 15 L/min Auxiliary: 0.4 L/min Nebulizer: 0.70 L/min Nebulizer: PE High Solids GemCone Spray Chamber: PE Scott's Orn/Wht Sample Tube Red/Red Int. Std Tube Exposure Length: Auto (5-20 sec) Exposures: 3 Used calibrants (1,4,9,14) 1.0 mL/min pump speed (Orn/Wht selected as installed pump tube (not combined size of sample & int. std lines)
PK 1	40.28 40.20	40.18 40.11	39.91 39.69	39.76 39.79	40.56	
PK 2	40.42 40.89	40.24 40.84	39.94 40.54	40.22 40.57	40.48	
PK 3	41.05 41.25	40.88 41.23	40.49 40.92	40.65 40.99	40.94	
PK 4	46.53 46.25	46.61 46.37	46.36 46.08	46.36 46.03	46.22	
PK 5	46.84 46.84	46.91 46.79	46.83 46.82	46.88 46.94	46.32	
PK 6	52.19 51.29	52.09 51.34	52.33 51.58	52.33 51.65	51.06	
PK 10	-0.01	-0.01	0.02	0.06	10.13	

Practice Sample Record Sheet - ICP PK Collaborative Study (Mini Study)

Lab Name:	Jaci Konecny
Contact Person:	Robin Johnson
Reporting Date:	7/2/2014
Type (circle one):	Citrate-EDTA Soluble P and K

Sample ID	Sample Wt., Rep 1	% P ₂ O ₅ , Rep 1	% P ₂ O ₅ , Rep 2	Consensus
1	0.5012	41.51	41.38	40.56
2	0.5028	41.33	40.65	40.48
3	0.5078	41.40	41.60	40.94
4	0.5066	46.84	46.24	46.22
5	0.5012	46.61	46.64	46.32
6	0.5055	52.18	52.87	51.06
7	0.5195	52.18	52.19	51.34
8	0.5015	52.93	51.95	51.34
9	0.5094	61.83	61.31	61.67
10	0.5045	N.D.	N.D.	