

APPENDIX
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Table 6-6 Plant nutrient uptake by specified crop and removed in the harvested part of the crop (Kilmer 1982; Morrison 1956; Sanchez 1976; USDA 1985)

Crop	Dry wt. lb/bu	Typical yield/acre plant part	Average concentration of nutrients (%)									
			N	P	K	Ca	Mg	S	Cu	Mn	Zn	
Grain crops			----- % of the dry harvested material -----									
Barley	48	50 bu	1.82	0.34	0.43	0.05	0.10	0.16	0.0016	0.0016	0.0031	
		1 T. straw	0.75	0.11	1.25	0.40	0.10	0.20	0.0005	0.0160	0.0025	
Buckwheat	48	30 bu	1.65	0.31	0.45	0.09			0.0009	0.0034		
		0.5 T. straw	0.78	0.05	2.26	1.40		0.01				
Corn	56	120 bu	1.61	0.28	0.40	0.02	0.10	0.12	0.0007	0.0011	0.0018	
		4.5 T. stover	1.11	0.20	1.34	0.29	0.22	0.16	0.0005	0.0166	0.0033	
Oats	32	80 bu	1.95	0.34	0.49	0.08	0.12	0.20	0.0012	0.0047	0.0020	
		2 T. straw	0.63	0.16	1.66	0.20	0.20	0.23	0.0008	0.0030	0.0072	
Rice	45	5,500 lb	1.39	0.24	0.23	0.08	0.11	0.08	0.0030	0.0022	0.0019	
		2.5 T. straw	0.60	0.09	1.16	0.18	0.10			0.0316		
Rye	56	30 bu	2.08	0.26	0.49	0.12	0.18	0.42	0.0012	0.0131	0.0018	
		1.5 T. straw	0.50	0.12	0.69	0.27	0.07	0.10	0.0300	0.0047	0.0023	
Sorghum	56	60 bu	1.67	0.36	0.42	0.13	0.17	0.17	0.0003	0.0013	0.0013	
		3 T. stover	1.08	0.15	1.31	0.48	0.30	0.13		0.0116		
Wheat	60	40 bu	2.08	0.62	0.52	0.04	0.25	0.13	0.0013	0.0038	0.0058	
		1.5 T. straw	0.67	0.07	0.97	0.20	0.10	0.17	0.0003	0.0053	0.0017	
Oil crops			----- % of the dry harvested material -----									
Flax	56	15 bu	4.09	0.55	0.84	0.23	0.43	0.25		0.0061		
		1.75 T. straw	1.24	0.11	1.75	0.72	0.31	0.27				
Oil palm		22,000 lb	1.13	0.26	0.16	0.19	0.09		0.0043	0.0225		
		5 T. fronds & stems	1.07	0.49	1.69		0.36					
Peanuts	22-30	2,800 lb	3.60	0.17	0.50	0.04	0.12	0.24	0.0008	0.0040		
		2.2 T. vines	2.33	0.24	1.75	1.00	0.38	0.36		0.0051		
Rapeseed	50	35 bu	3.60	0.79	0.76		0.66					
		3 T. straw	4.48	0.43	3.37	1.47	0.06	0.68	0.0001	0.0008		
Soybeans	60	35 bu	6.25	0.64	1.90	0.29	0.29	0.17	0.0017	0.0021	0.0017	
		2 T. stover	2.25	0.22	1.04	1.00	0.45	0.25	0.0010	0.0115	0.0038	
Sunflower	25	1,100 lb	3.57	1.71	1.11	0.18	0.34	0.17		0.0022		
		4 T. stover	1.50	0.18	2.92	1.73	0.09	0.04		0.0241		

Table 6-6 Plant nutrient uptake by specified crop and removed in the harvested part of the crop — Continued

Crop	Dry wt. lb/bu	Typical yield/acre plant part	Average concentration of nutrients (%)								
			N	P	K	Ca	Mg	S	Cu	Mn	Zn
Fiber crops			----- % of the dry harvested material -----								
Cotton		600 lb. lint & 1,000 lb seeds	2.67	0.58	0.83	0.13	0.27	0.20	0.0040	0.0073	0.0213
		burs & stalks	1.75	0.22	1.45	1.40	0.40	0.75			
Pulpwood		98 cords	0.12	0.02	0.06		0.02				
		bark, branches	0.12	0.02	0.06		0.02				
Forage crops			----- % of the dry harvested material -----								
Alfalfa		4 tons	2.25	0.22	1.87	1.40	0.26	0.24	0.0008	0.0055	0.0053
Bahiagrass		3 tons	1.27	0.13	1.73	0.43	0.25	0.19			
Big bluestem		3 tons	0.99	0.85	1.75		0.20				
Birdsfoot trefoil		3 tons	2.49	0.22	1.82	1.75	0.40				
Bluegrass-pastd.		2 tons	2.91	0.43	1.95	0.53	0.23	0.66	0.0014	0.0075	0.0020
Bromegrass		5 tons	1.87	0.21	2.55	0.47	0.19	0.19	0.0008	0.0052	
Clover-grass		6 tons	1.52	0.27	1.69	0.92	0.28	0.15	0.0008	0.0106	
Dallisgrass		3 tons	1.92	0.20	1.72	0.56	0.40				
Guineagrass		10 tons	1.25	0.44	1.89		0.43	0.20			
Bermudagrass		8 tons	1.88	0.19	1.40	0.37	0.15	0.22	0.0013		
Indiangrass		3 tons	1.00	0.85	1.20	0.15					
Lespedeza		3 tons	2.33	0.21	1.06	1.12	0.21	0.33		0.0152	
Little bluestem		3 tons	1.10	0.85	1.45		0.20				
Orchardgrass		6 tons	1.47	0.20	2.16	0.30	0.24	0.26	0.0017	0.0078	
Pangolagrass		10 tons	1.30	0.47	1.87		0.29	0.20			
Paragrass		10.5 tons	0.82	0.39	1.59	0.39	0.33	0.17			
Red clover		2.5 tons	2.00	0.22	1.66	1.38	0.34	0.14	0.0008	0.0108	0.0072
Reed canarygrass		6.5 tons	1.35	0.18		0.36					
Ryegrass		5 tons	1.67	0.27	1.42	0.65	0.35				
Switchgrass		3 tons	1.15	0.10	1.90	0.28	0.25				
Tall fescue		3.5 tons	1.97	0.20	2.00	0.30	0.19				
Timothy		2.5 tons	1.20	0.22	1.58	0.36	0.12	0.10	0.0006	0.0062	0.0040
Wheatgrass		1 ton	1.42	0.27	2.68	0.36	0.24	0.11			
Forest			----- % of the dry harvested material -----								
Leaves			0.75	0.06	0.46						
Northern hardwoods		50 tons	0.20	0.02	0.10	0.29					
Douglas fir		76 tons	0.16								

Table 6-6 Plant nutrient uptake by specified crop and removed in the harvested part of the crop — Continued

Crop	Dry wt. lb/bu	Typical yield/acre plant part	Average concentration of nutrients (%)								
			N	P	K	Ca	Mg	S	Cu	Mn	Zn
Fruit crops			----- % of the fresh harvested material -----								
Apples		12 tons	0.13	0.02	0.16	0.03	0.02	0.04	0.0001	0.0001	0.0001
Bananas		9,900 lb.	0.19	0.02	0.54	0.23	0.30				
Cantaloupe		17,500 lb.	0.22	0.09	0.46		0.34				
Coconuts		0.5 tons-dry copra	5.00	0.60	3.33	0.21	0.36	0.34	0.0010		0.0076
Grapes		12 tons	0.28	0.10	0.50		0.04				
Oranges		54,000 lb.	0.20	0.02	0.21	0.06	0.02	0.02	0.0004	0.0001	0.0040
Peaches		15 tons	0.12	0.03	0.19	0.01	0.03	0.01			0.0010
Pineapple		17 tons	0.43	0.35	1.68	0.02	0.18	0.04			
Tomatoes		22 tons	0.30	0.04	0.33	0.02	0.03	0.04	0.0002	0.0003	0.0001
Silage crops			----- % of the dry harvested material -----								
Alfalfa haylage (50% dm)		10 wet/5 dry	2.79	0.33	2.32	0.97	0.33	0.36	0.0009	0.0052	
Corn silage (35% dm)		20 wet/7 dry	1.10	0.25	1.09	0.36	0.18	0.15	0.0005	0.0070	
Forage sorghum (30% dm)		20 wet/6 dry	1.44	0.19	1.02	0.37	0.31	0.11	0.0032	0.0045	
Oat haylage (40% dm)		10 wet/4 dry	1.60	0.28	0.94	0.31	0.24	0.18			
Sorghum-sudan (50% dm)		10 wet/5 dry	1.36	0.16	1.45	0.43	0.34	0.04		0.0091	
Sugar crops			----- % of the fresh harvested material -----								
Sugarcane		37 tons	0.16	0.04	0.37	0.05	0.04	0.04			
Sugar beets tops		20 tons	0.20	0.03	0.14	0.11	0.08	0.03	0.0001	0.0025	
			0.43	0.04	1.03	0.18	0.19	0.10	0.0002	0.0010	
Tobacco			----- % of the dry harvested material -----								
All types		2,100 lb.	3.75	0.33	4.98	3.75	0.90	0.70	0.0015	0.0275	0.0035
Turf grass			----- % of the dry harvested material -----								
Bluegrass		2 tons	2.91	0.43	1.95	0.53	0.23	0.66	0.0014	0.0075	0.0020
Bentgrass		2.5 tons	3.10	0.41	2.21	0.65	0.27	0.21			
Bermudagrass		4 tons	1.88	0.19	1.40	0.37	0.15	0.22	0.0013		