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BELTSVILLE AGRICULTURAL RESEARCH CENTER
BELTSVILLE, MARYLAND 20705

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Subject: Fresh and Dry Weight Data on Samples Collected in Maryland, Virginia, North Carolina and Tennessee, 1978

To: Arthur S. Barclay, MPRL

On our recent field trip, a scale was employed to help judge the three pound minimum dry weight from weighing fresh samples. Using a scale in collecting general samples has additional value: (1) Knowing the average expected weight loss can help reduce collecting overweight general samples and (2) Knowing the dry weight/fresh weight for a particular sample could be an economical tool in obtaining a future recollection - the option of paying labor by weight versus on an hourly basis.

From the data attached, some generalizations can be made for collecting a three pound minimum sample from humid deciduous forests; indicated in the following dichotomy:

A. Herbs

1. Roots

a. Soft-stemmed, fleshy or succulent - a minimum of 14 pounds fresh. Ex. Laportea, Caulophyllum, Angelica.

b. Hard-stemmed - No data

2. Stem - leaves

a. Soft-stemmed - a minimum of 14-19 pounds fresh. Ex. - Polygonatum, Gentiana, Tiarella, Mitchella, Laportea, Saurus.

b. Hard-stemmed or suffrutescent - a minimum of 9-9.5 pounds fresh. Ex. - Xanthorhiza, Chenopodium, Prenanthes, Epifagus, Lycopus, Potentilla.

B. Shrubs

1. Roots - A minimum of 7.0 pounds fresh. Ex. - Hydrangea, Ceanothus, Myrica.

2. Woody-Stem with Stembark or Stembark - A minimum of 5.0 pounds fresh. Ex. - Alnus, Cornus, Persea, Halesia, Berchemia.

3. Twigs-Leaves - A minimum of 6.5 pounds fresh. Ex. Kalmia,

Vaccinium, *Cornus*, *Leucothoe*, *Halesia*, *Persea*, *Myrica*, *Berchemia*, *Itea*, *Clethra*, *Ceanothus*, *Pieris*:*Clethra*.

The sampling error with the scale alone is 1-3%. Standard weights were taken in the field to adjust the scale when necessary.

The sampling error based on the sample itself is much greater. For example, a considerable amount of fresh soil could not easily be removed from root samples of *Leiophyllum* & *Decodon*. The *Decodon* roots, which initially weighed 10.25 pounds, dried out to 5.0 pounds. In shaking the dried roots, 2.0 pounds of soil fell on the plastic. Other factors concerning the percent dry weight can be found in a memorandum "*Bouvardia fernifolia* Procurement in Mexico" dated August 29, 1974 (to Dr. Perdue).

FRESH AND DRY WEIGHT DATA FOR SAMPLES COLLECTED IN MARYLAND, VIRGINIA, NORTH CAROLINA, AND TENNESSEE

Coll. No.	Plant Name	Weight		
		Fresh	Dry	Percent (Dry)
5070	Potentilla sp.	9.0	4.5	50%
5075	Alnus serrulata sb	8.0	6.0	75%
5076	Magnolia tripetala fr	7.0	3.0	43%
5077	Xanthorhiza simplicissima st-lf-fr	14.5	5.50	38%
5078	Tiarella cordifolia rt-st-lf	--	.5	
5079	Chenopodium album st-lf-fl-fr	10.5	4.5	43%
5080	Aster puniceus st-lf-fl-fr	--	3.25	
5081	Leiophyllum buxifolium rt-rh-st-lf-fl-fr (some soil attached)	17.5	5.25	30%
5082	Menziesia pilosa st-lf	7.0	4.0	57%
5083	Clethra acuminata st-lf-fr	10.25	4.75	46%
5084	Kalmia latifolia tw-lf	6.0	2.75	46%
5085	Viburnum alnifolium st-lf-fr	17.25	10.0	58%
5086	Vaccinium erythrocarpum st-lf-fr	8.75	4.25	49%
5087	Prenanthes altissima rt-st-lf-fl-fr	6.0	2.25	38%
5088	Heuchera villosa rt-rh-st-lf-fl-fr	--	3.50	
5089	Polygonum cuspidatum rt-rh	--	13.0	
	" " st-lf	--	5.00	
5090	Polygonatum biflorum rt-rh	--	3.00	
	" " st-lf-fr	--	2.25	
5091	Laportea canadensis rt-rh	17.25	4.75	28%
	" " st-lf-fr	16.00	2.50	16%
5092	Epifagus virginiana rt-st-lf-fl-fr	6.50	2.00	31%
5093	Aesculus octandra sd	--	5.75	
5094	Polygonatum pubescens rt-rh-st-lf	8.0	1.75 + .5 2.25	28%
5095	Gentiana quinquefolia rt-st-lf-fl	10.75	3.00	28%
5096	Tiarella cordifolia rt-rh-st-lf	10.75 (see also 5078)	2.25	21%
5097	Caulophyllum thalictroides rt-rh	14.75	3.75	25%
*5098	Lobelia siphilitica rt-rh-st-lf-fl-fr	4.50	--	
5099	Cornus amomum ws-sb	6.00	4.00	67%
	" " tw-lf	6.75	3.50	52%
	" " fr	10.75	2.75	26%
5100	Cimicifuga rt-rh	--	--	
	" st-lf-fr	--	--	
5101	Hydrangea arborescens rt	7.25	3.0	41%
5102	Mitchella repens rt-st-lf-fr	2.75	.75	27%
5103	Diervilla sessilifolia st-lf-fr	13.25	3.00 3.50	49%
5104	Angelica triquinata rt	9.0	2.0	22%
*	" " fr	4.0		
5105	Viburnum cassinoides tw-lf-fr	12.50	7.5	60%
5106	Pieris floribunda st-lf-fr	8.0	4.0	50%
5107	Philadelphus hirsutus tw-lf	10.25	5.75	57%
5108	No Sample			
5109	No Sample			

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Coll. No.	Plant Name	Weight		
		Fresh	Dry	Percent (Dry)
5110	Leucothoe recurva tw-lf	8.50	4.25	50%
5111	Chimaphila rt-st-lf	---	.75	
5112	Calycanthus No Sample			
5113	Crataegus flabellata tw-lf-fr	6.0	4.25	71%
5114	Ceanothus americanus rt	7.25	4.5	62%
	" " tw-lf-fr	8.0	4.75	59%
5115	Halesia carolina ws-sb	11.0	8.0	73%
	" " tw-lf	8.0	4.75	59%
5116	Juncus repens rt-rh-st-lf	21.0	3.25	15%
5117	Lyonia lucida tw-lf	8.25	4.75	58%
5118	Decodon verticillatus rt	10.25 (w/soil)	5.0 (w/dirt)	49%
			3.00 (soil shaken)	30%
	" " st-lf-fr	13.5	4.25	31%
5119	Leucothoe racemosa tw-lf	9.25	5.75	62%
*5120	Ilex glabra tw-lf-fr	6.50		
5121	Persea palustris sb	4.50	3.5	78%
	" " tw-lf-fr	11.0	6.25	57%
*5122	Rhexia st-lf-fl	1.0		
5123	Lyonia ligustrina tw-lf	7.0	4.0	57%
5124	Myrica cerifera rt	5.5	3.5	64%
5125	Saurus rt-st-lf	13.25	3.25	25%
5126	Berchemia scandens ws-sb	7.0	4.75	68%
5127	Itea virginiana tw-lf=fr	4.25	2.50	59%
*5128	Chelone st-lf-fl	2.0		
5129	Lycopus rubellus rt-st-lf-fl-fr	12.25	4.0	33%

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