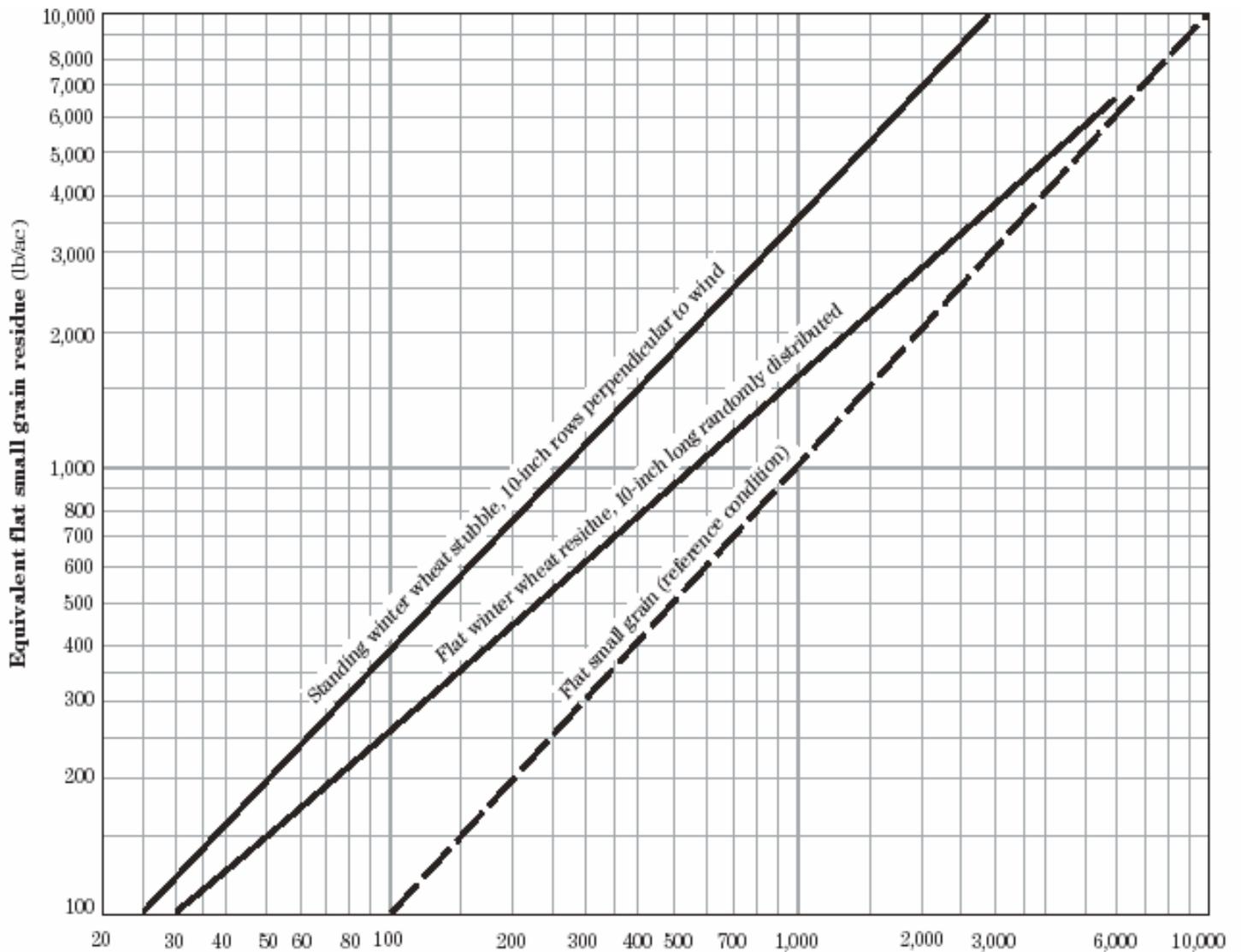


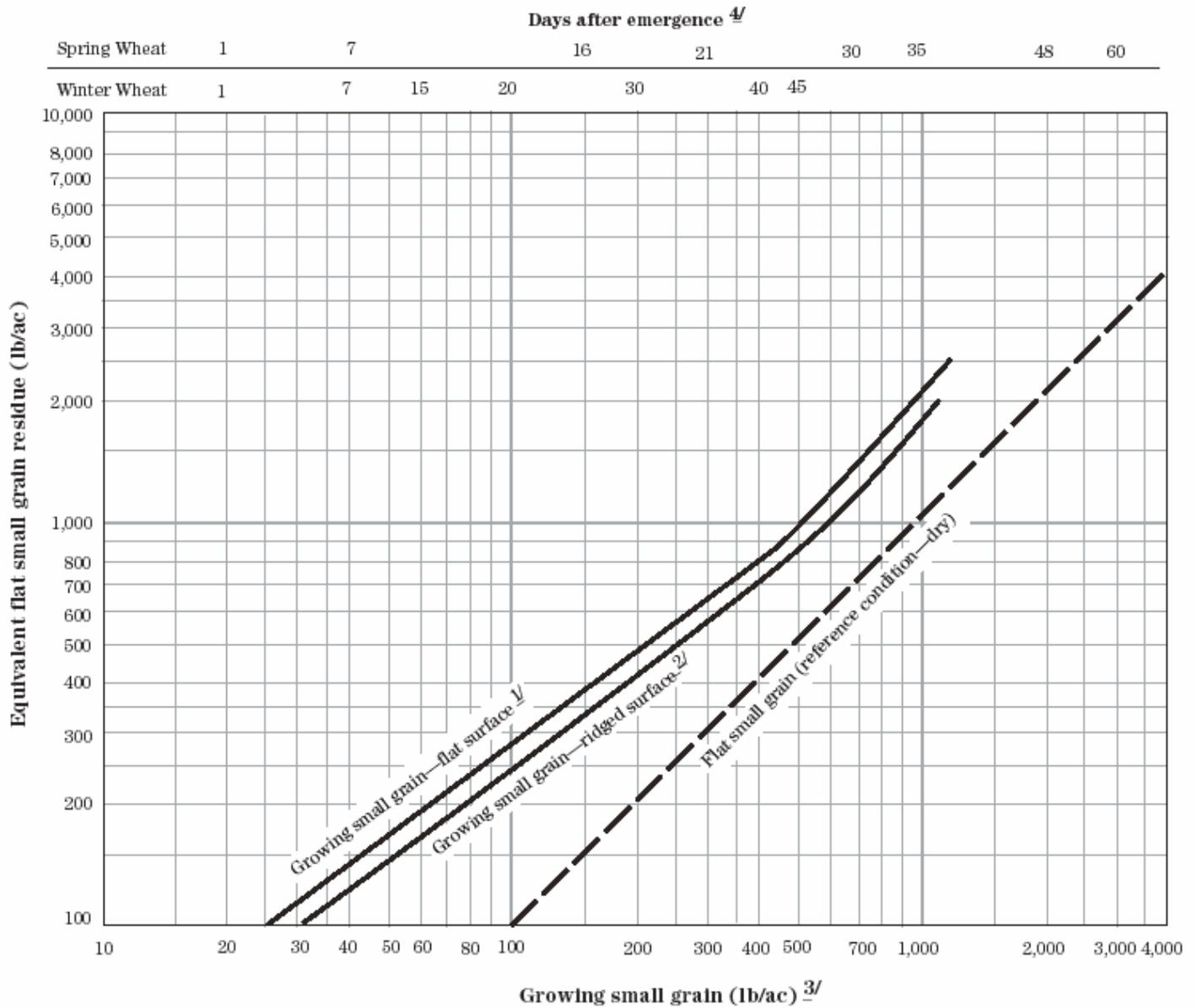
PART I
PREDICTING WIND EROSION
APPENDIX

Figure 1 Flat small grain equivalent of small grain residue (use for wheat, barley, rye, oats)



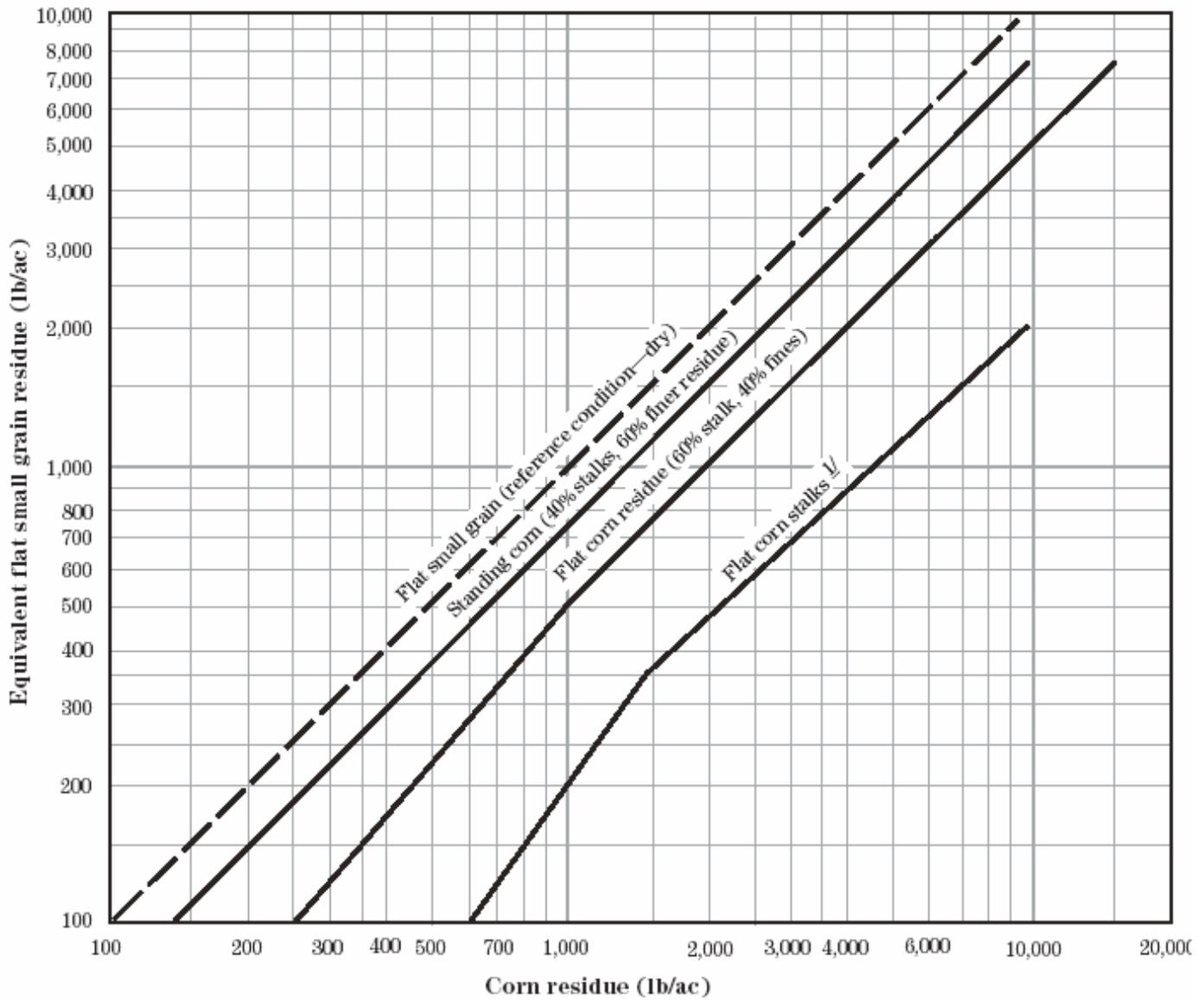
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test.

Figure 2 Flat small grain equivalent of growing small grain



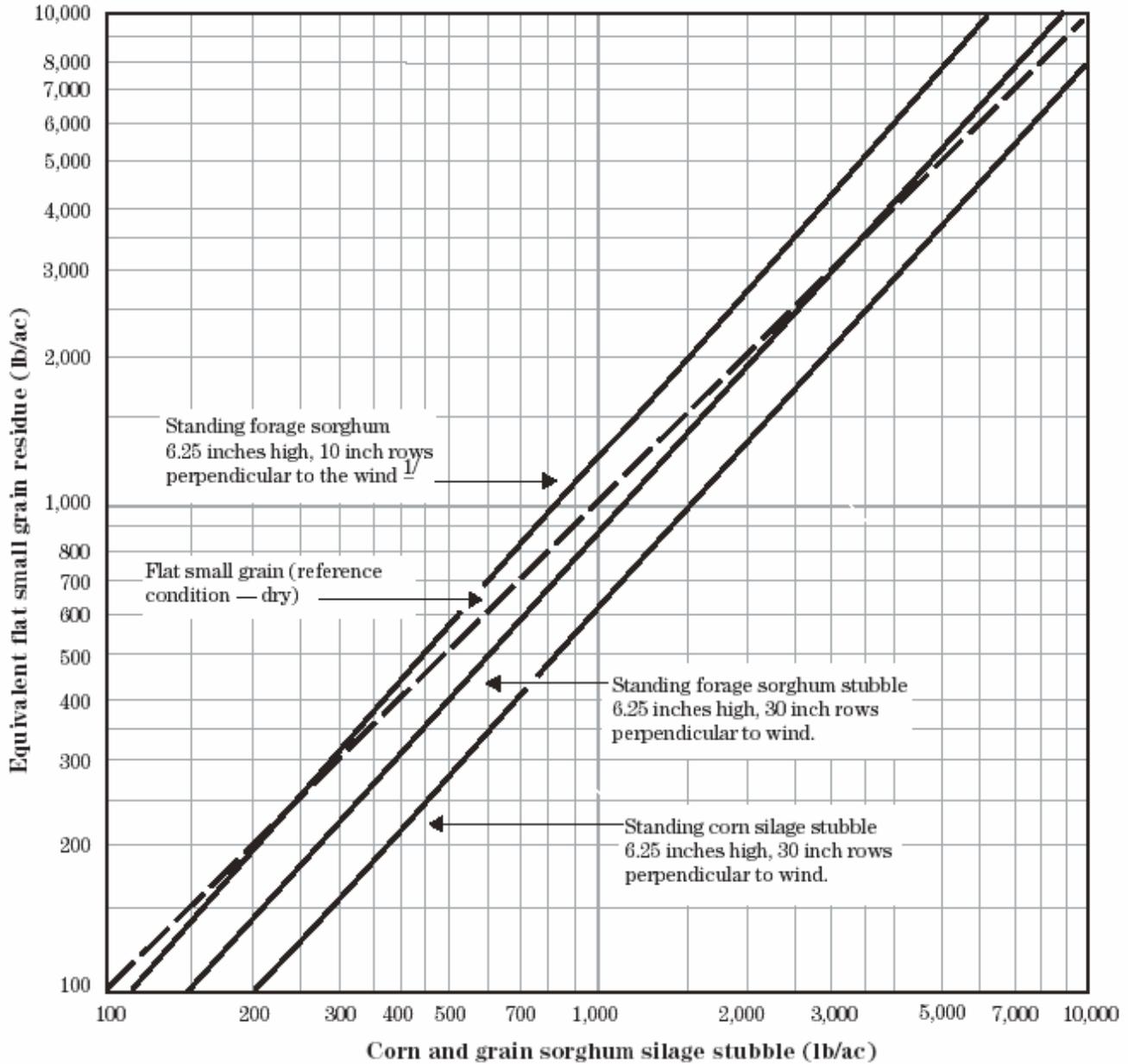
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 3 Flat small grain equivalents of corn residue



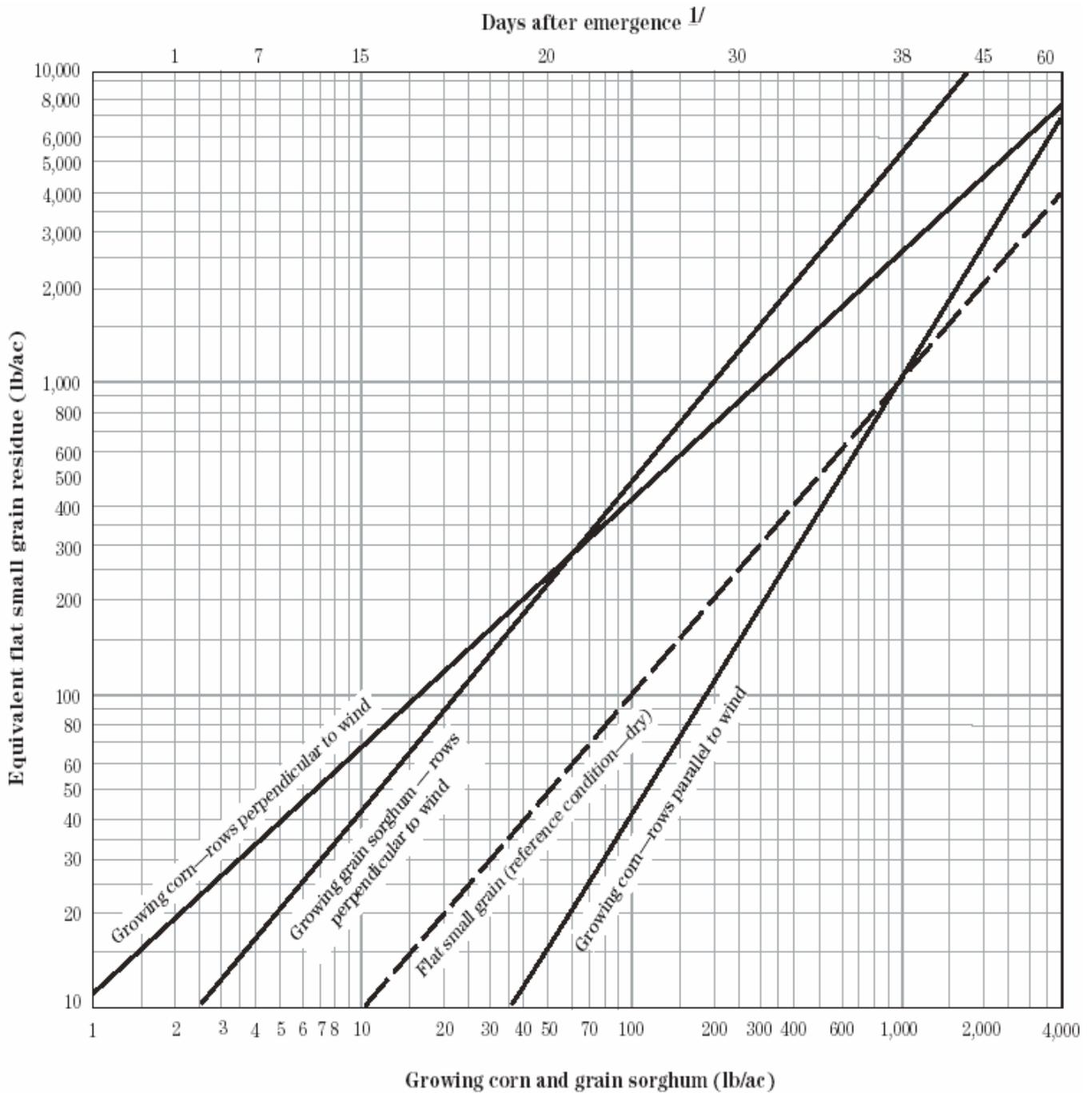
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 4 Flat small grain equivalent of corn and grain sorghum silage stubble



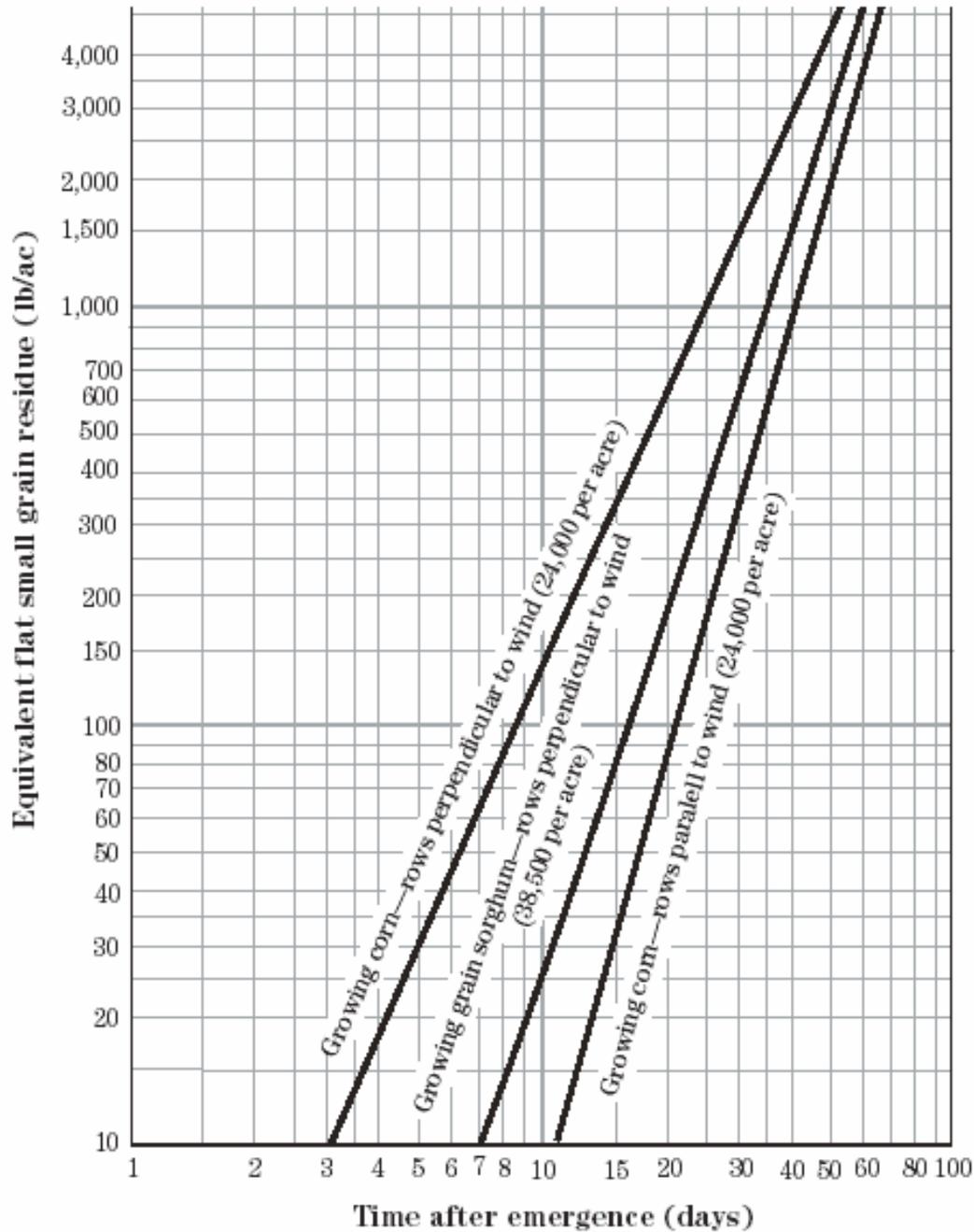
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 5 Flat small grain equivalents of growing corn and grain sorghum



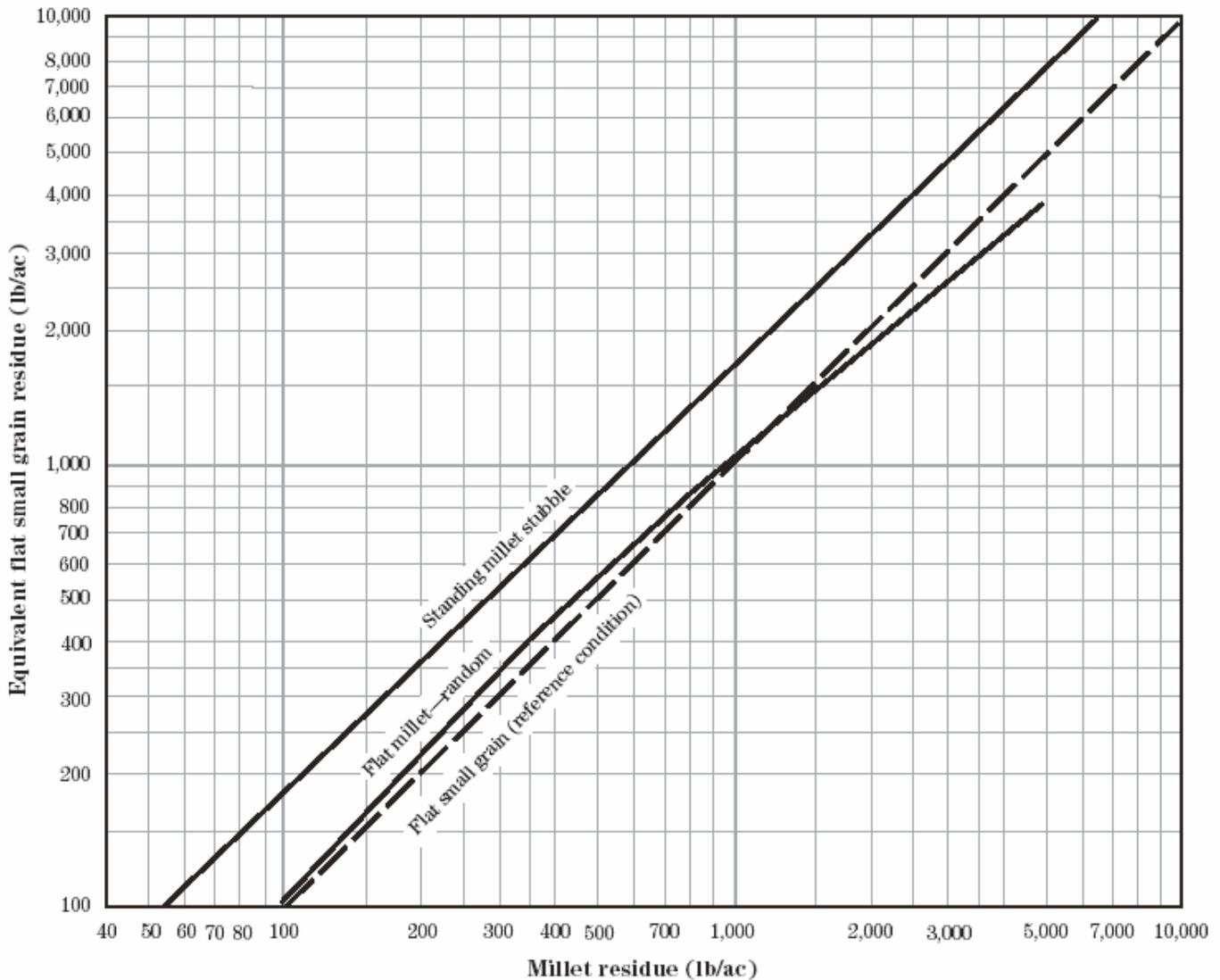
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 6 Flat small grain equivalents of growing corn and grain sorghum; days after emergence



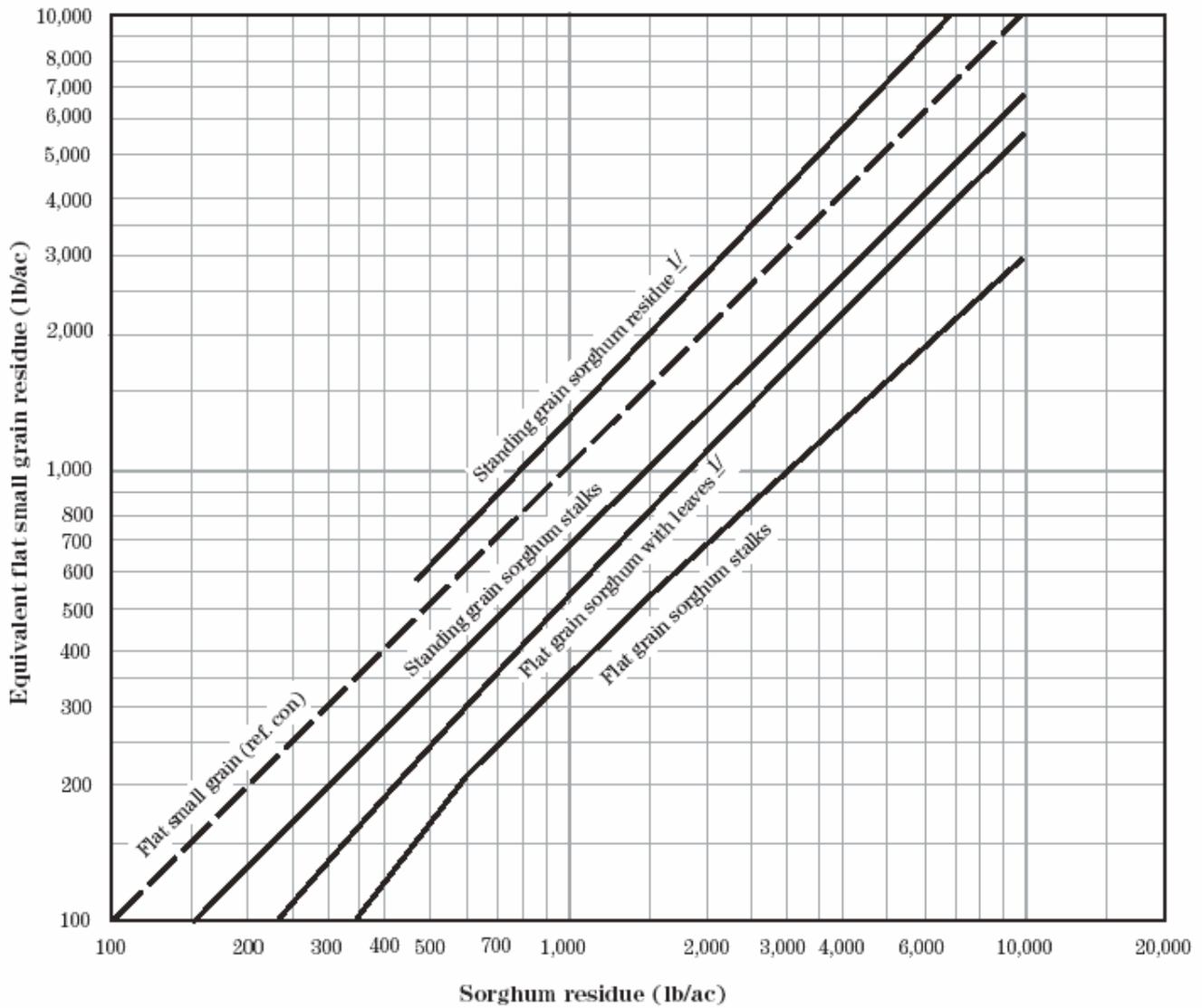
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 7 Flat small grain equivalents of millet stubble and residue



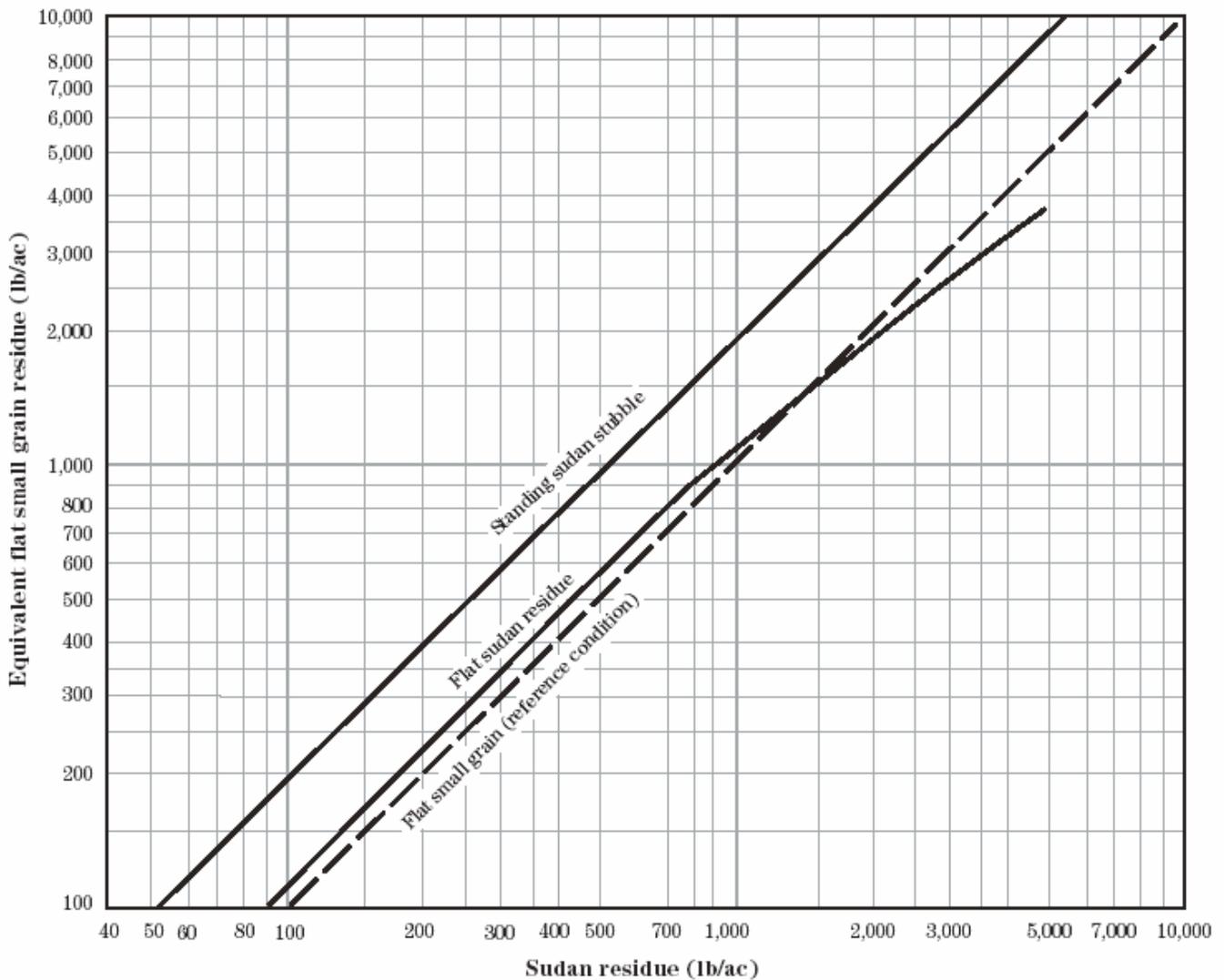
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 8 Flat small grain equivalent of grain sorghum and residue



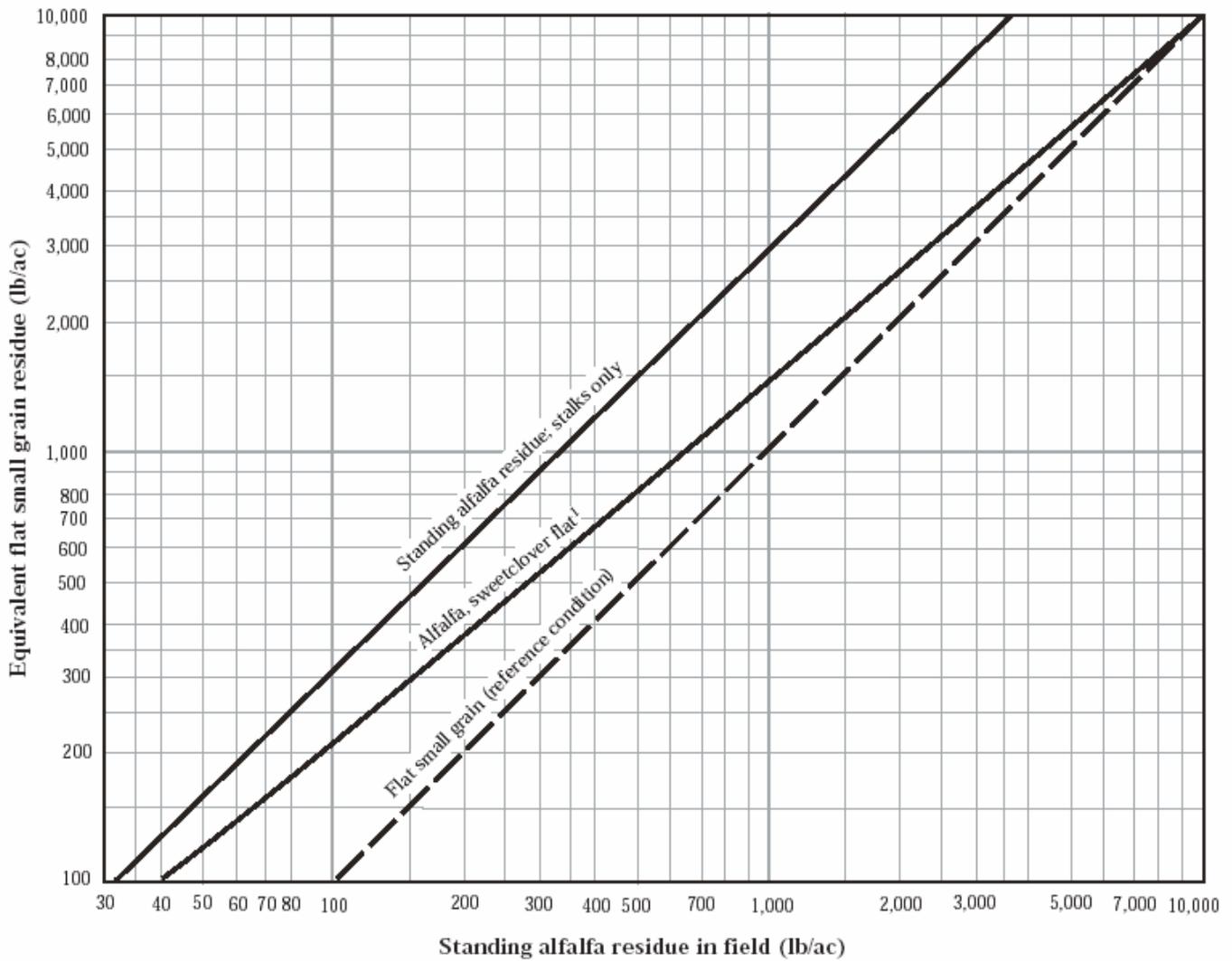
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 9 Flat small grain equivalents of sudangrass stubble and residue



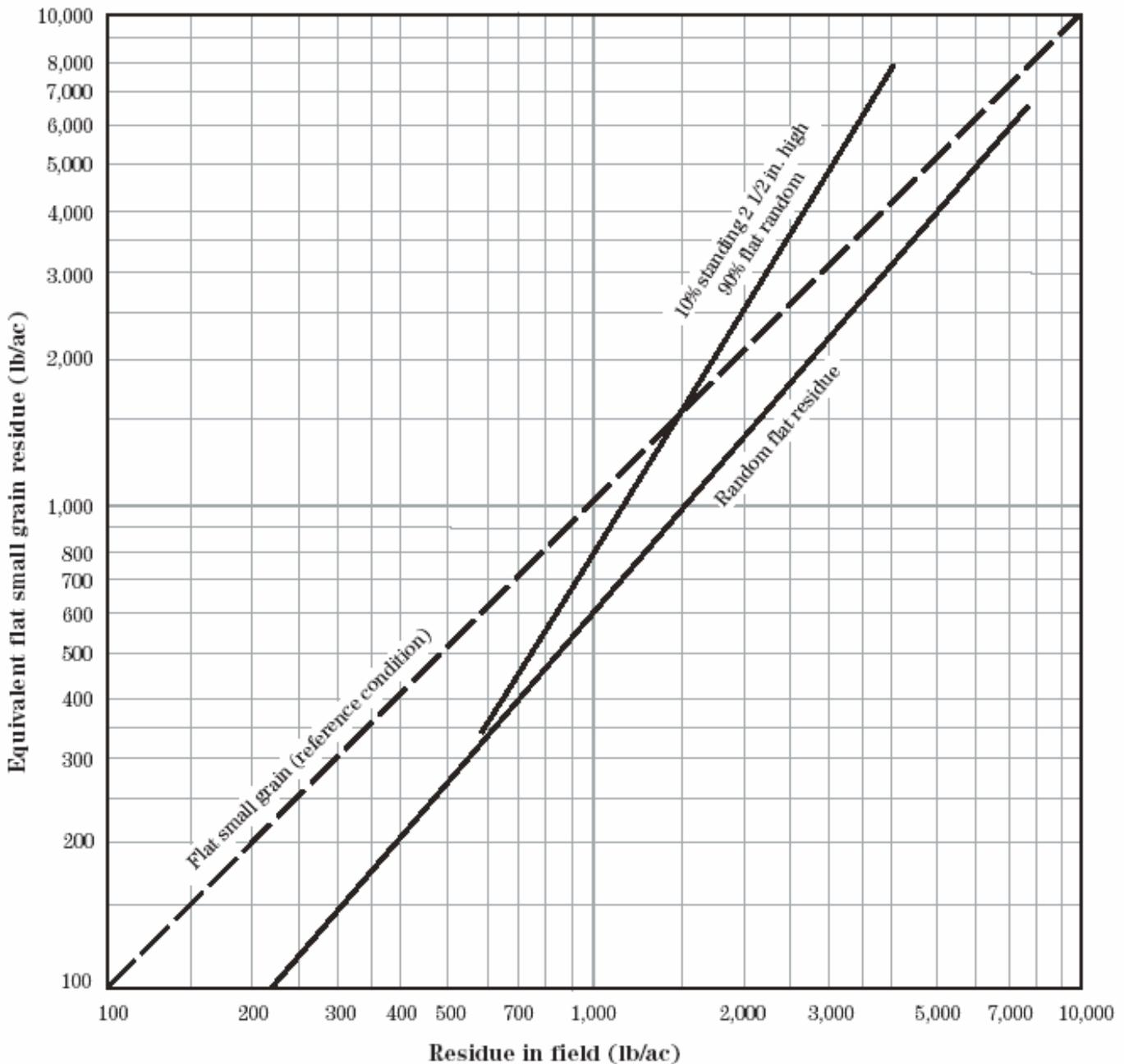
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 10 Flat small grain equivalents of alfalfa residue



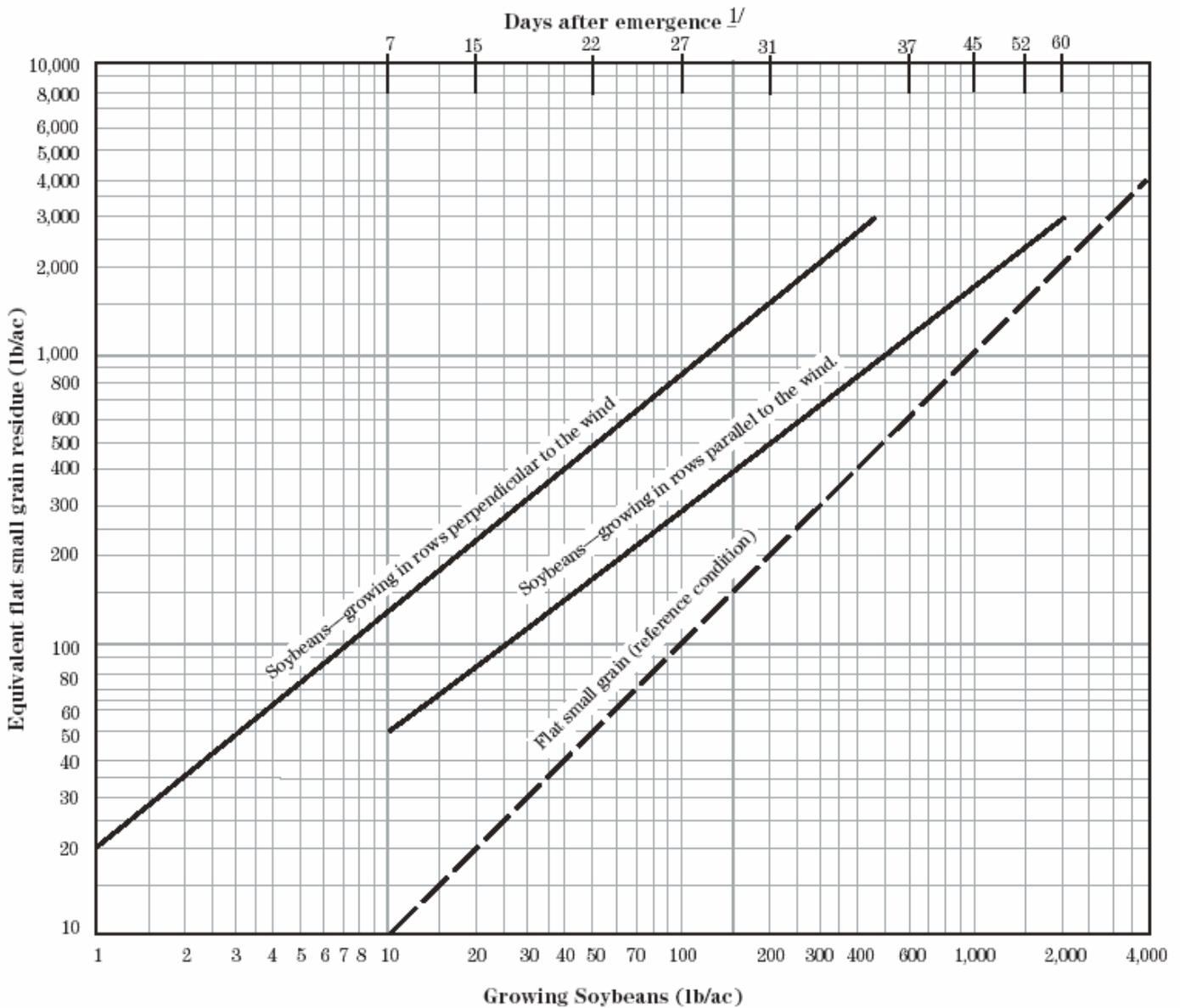
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 11 Flat small grain equivalents of dry bean, lentil, soybean¹, and winter pea residue



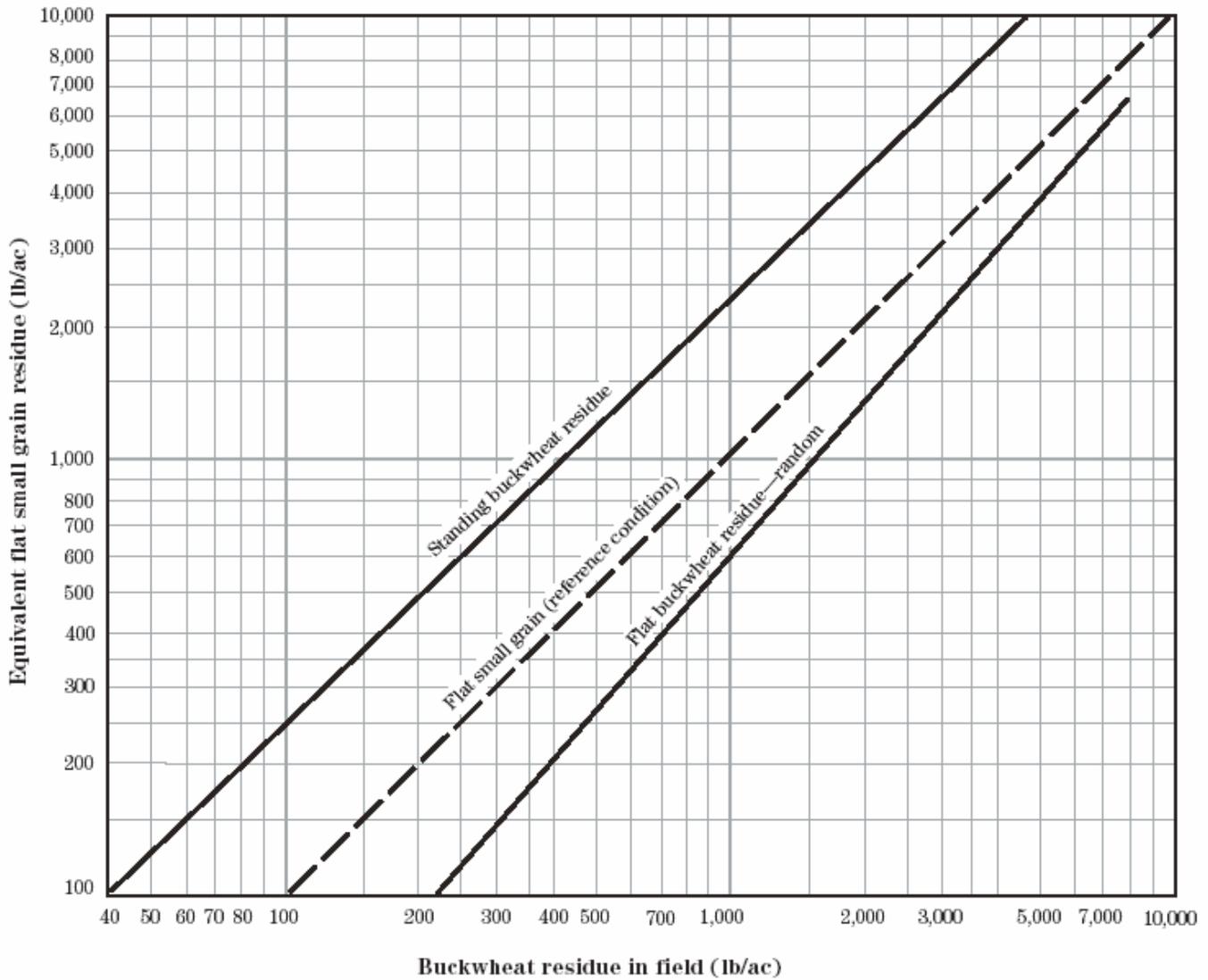
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 12 Flat small grain equivalents of growing soybeans



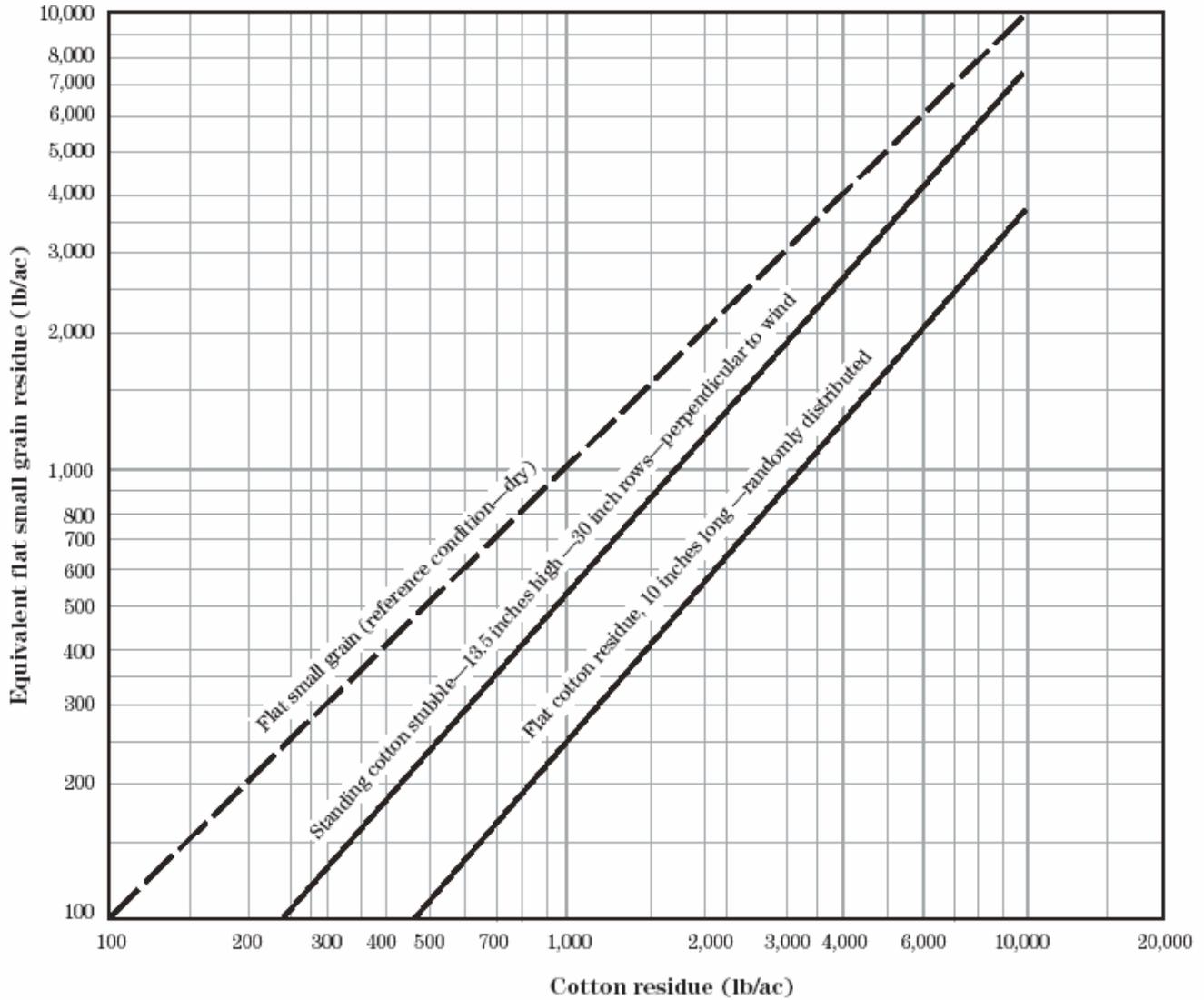
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 13 Flat small grain equivalents of buckwheat residue



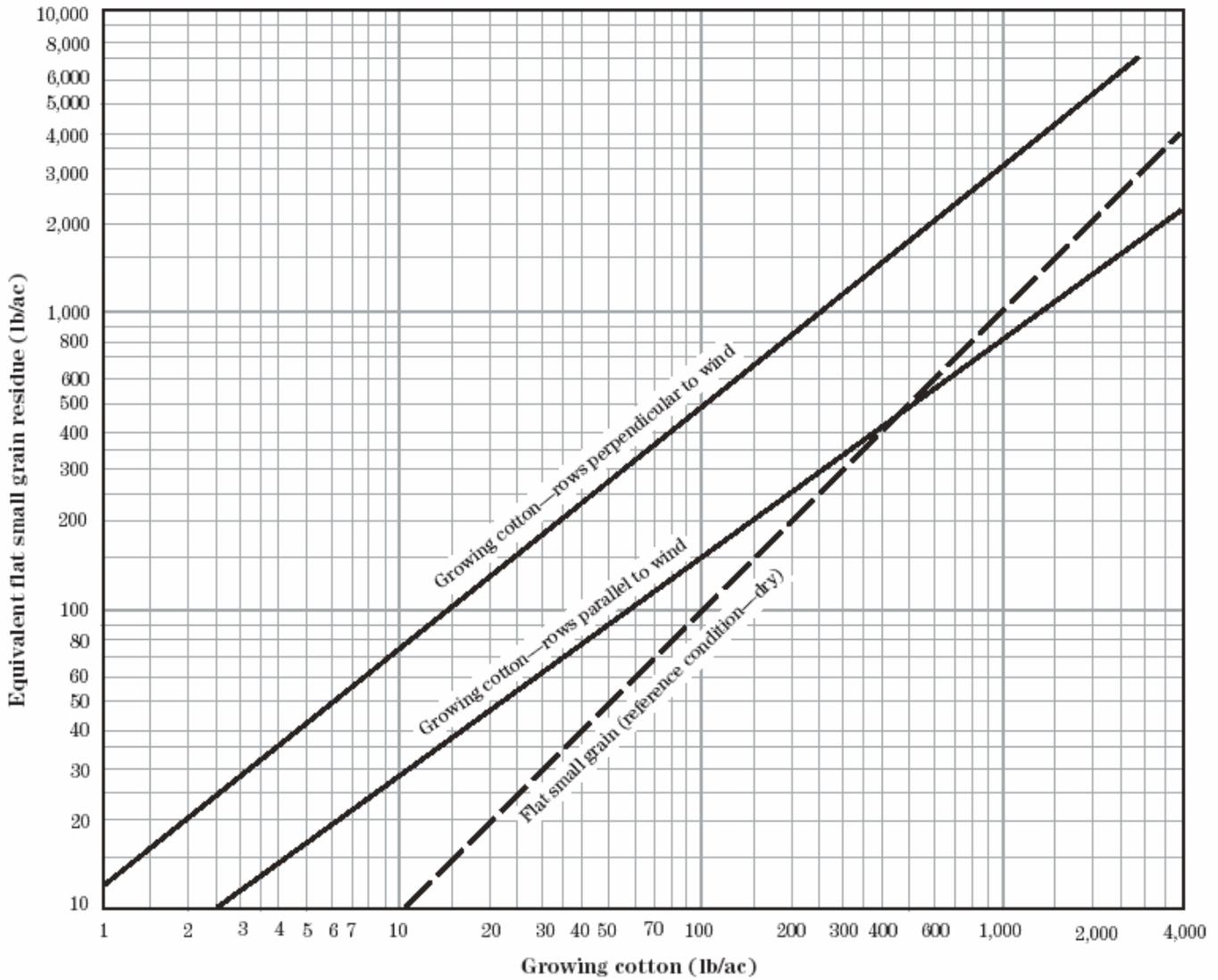
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 14 Flat small grain equivalents of cotton residue



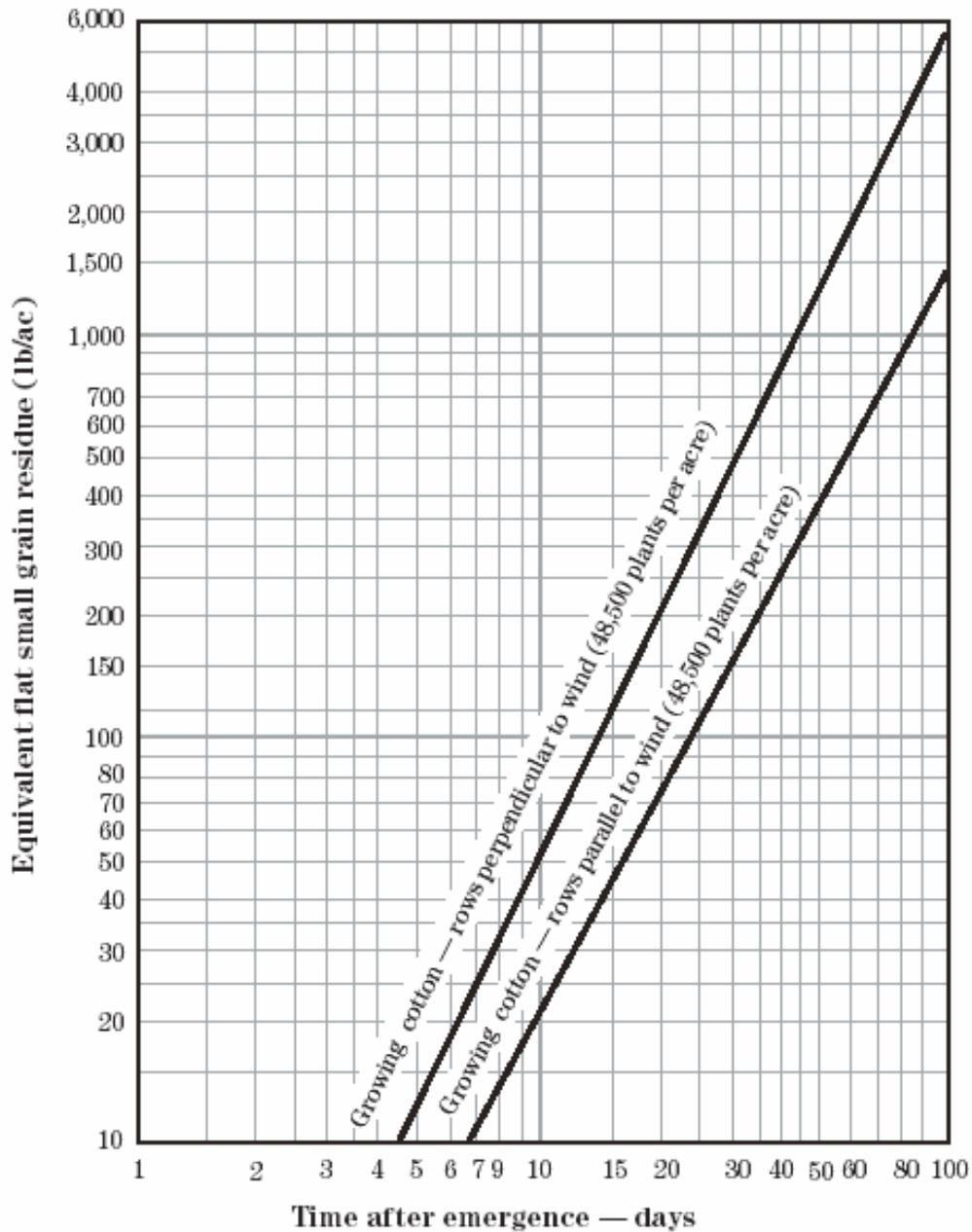
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 15 Flat small grain equivalents of growing cotton



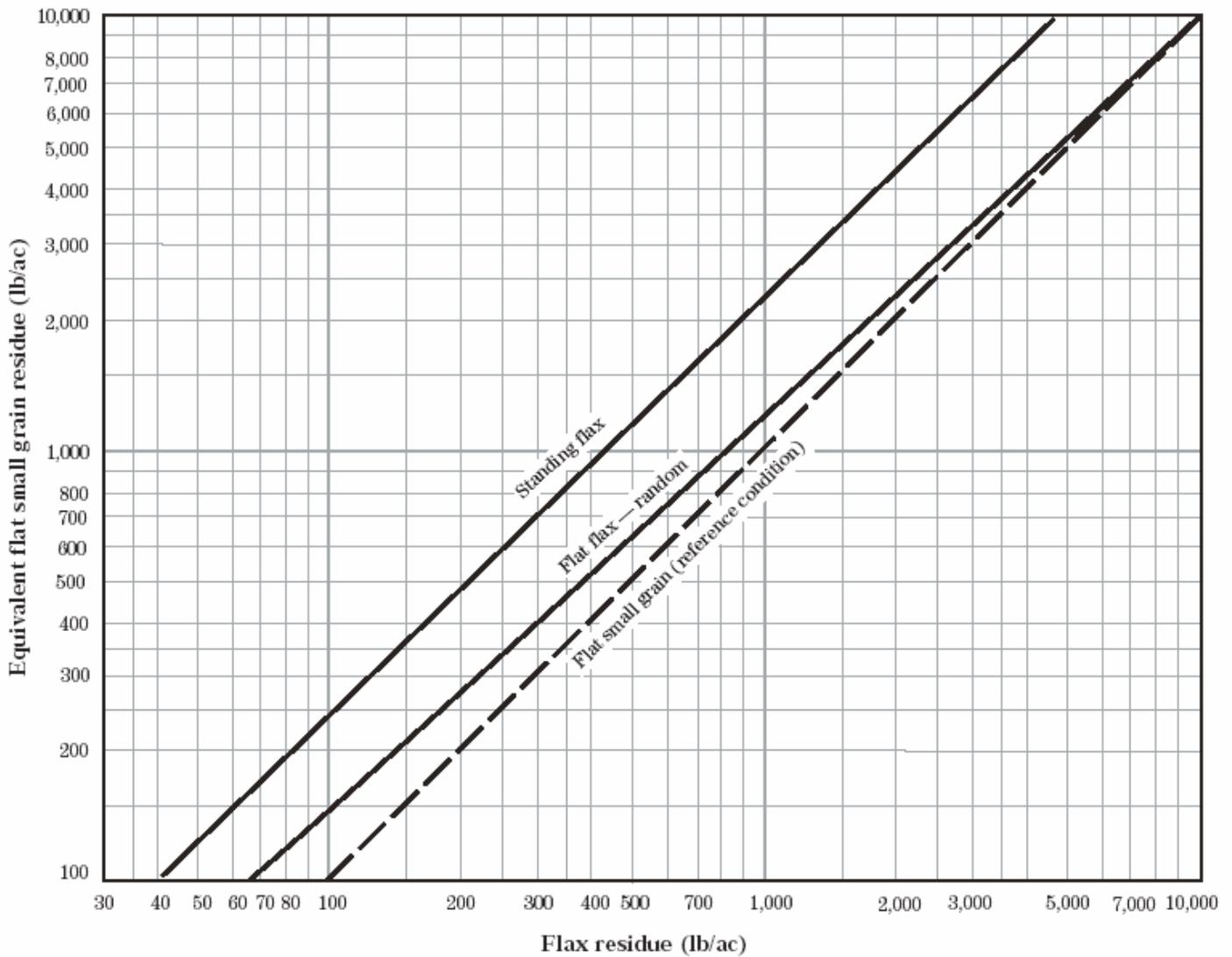
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 16 Flat small grain equivalent of growing cotton; days after emergence



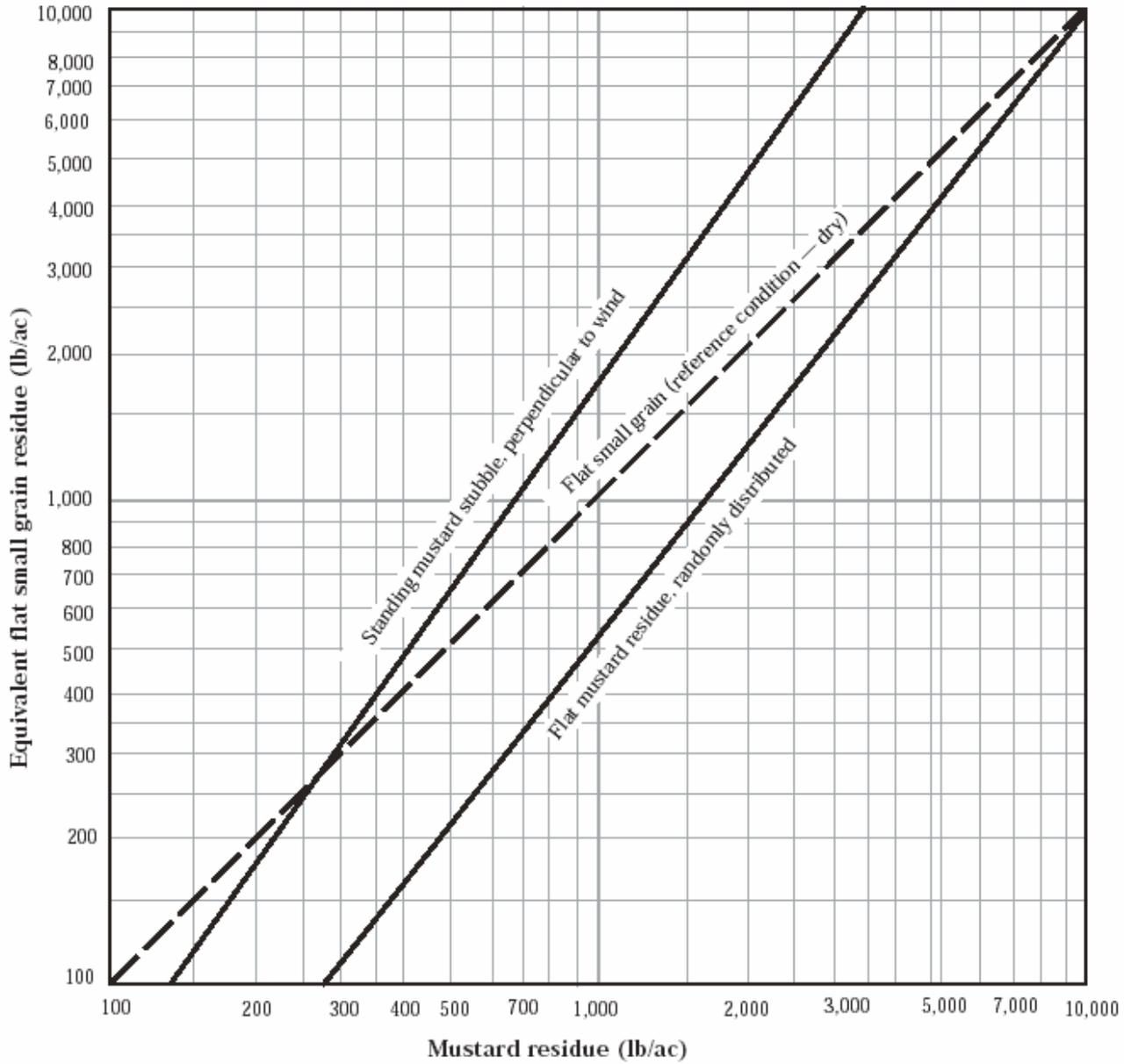
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 17 Flat small grain equivalents of flax residue



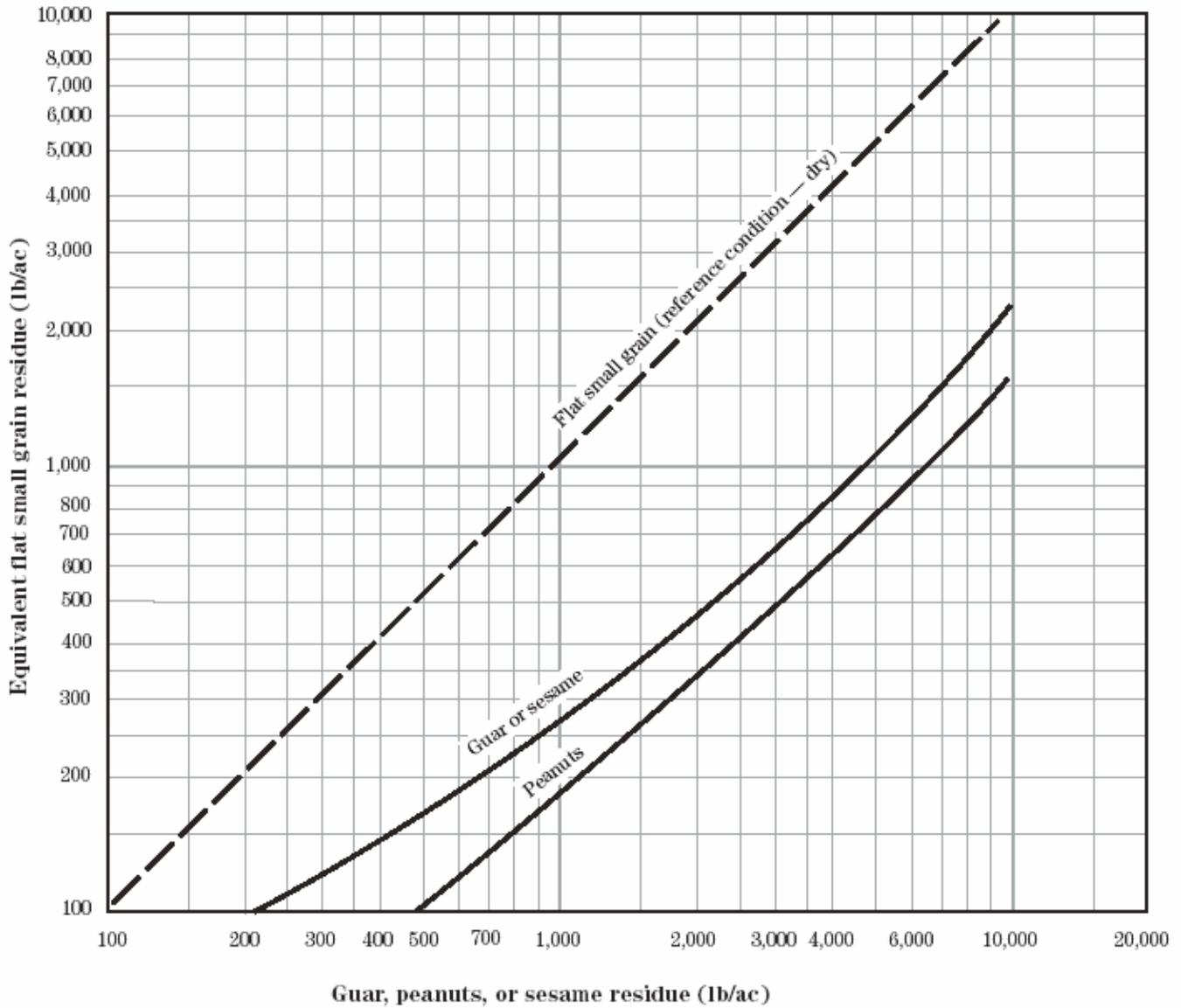
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 18 Flat small grain equivalents of mustard residue



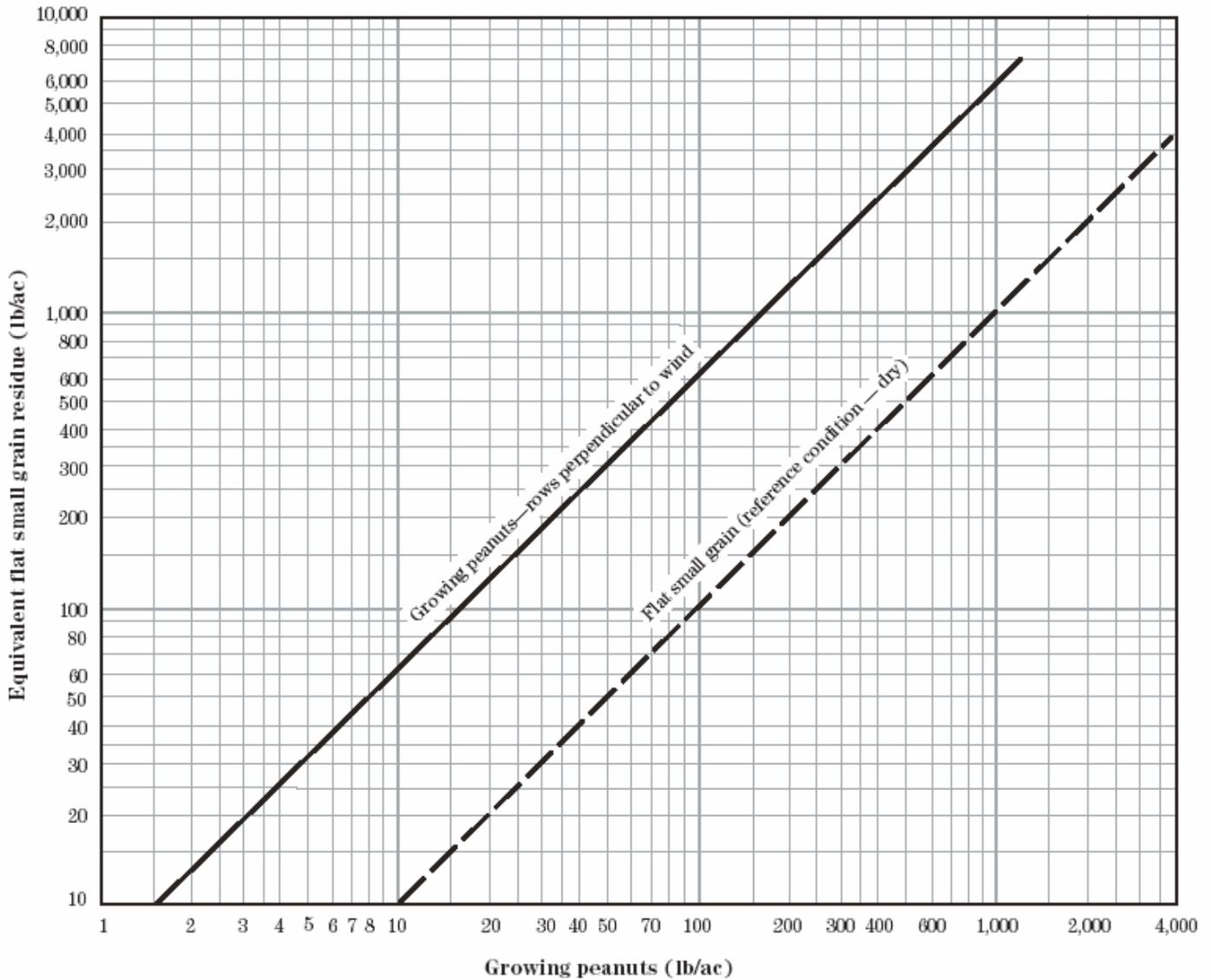
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 19 Flat small grain equivalents of peanuts, guar, and sesame residue



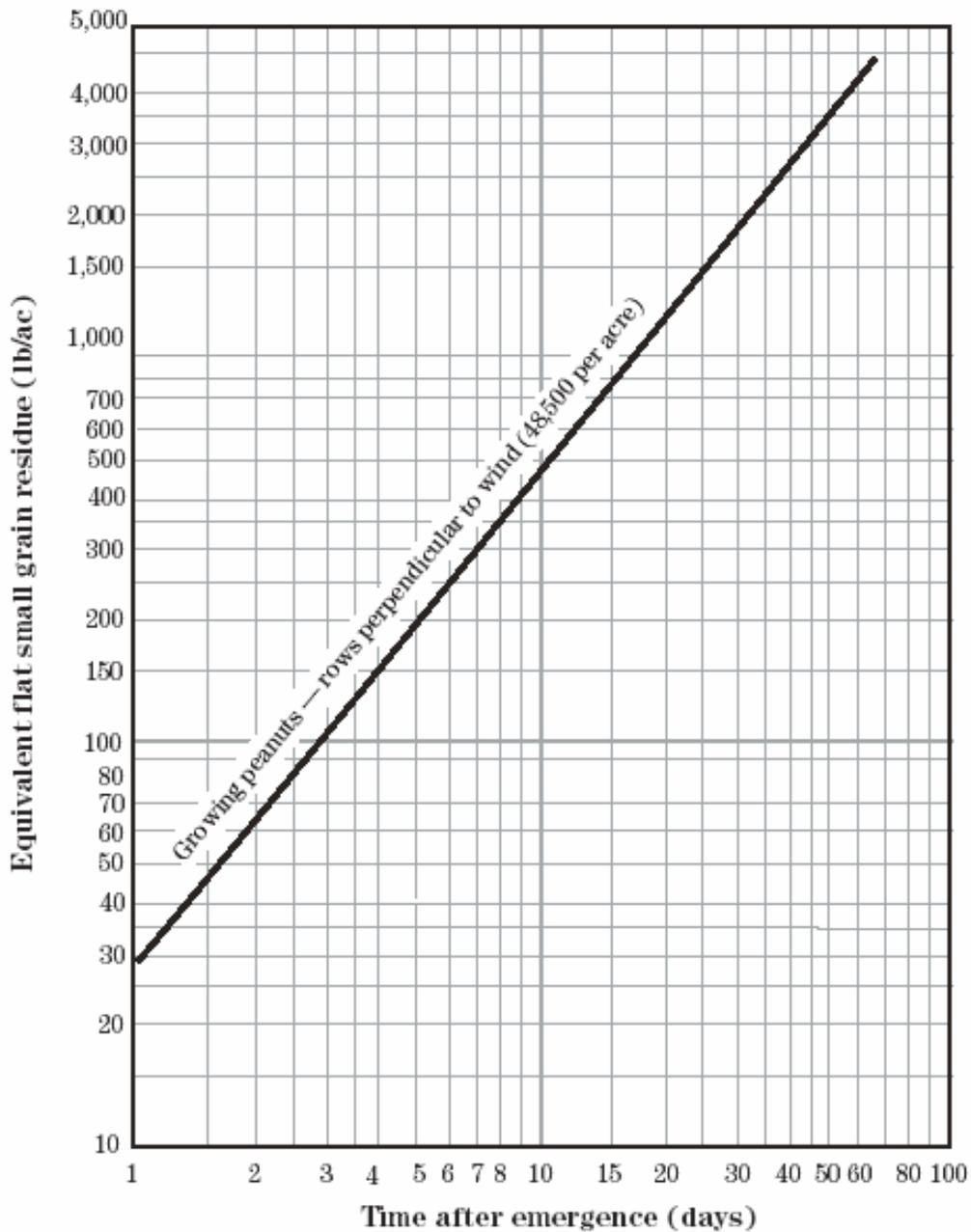
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 20 Flat small grain equivalents of growing peanuts



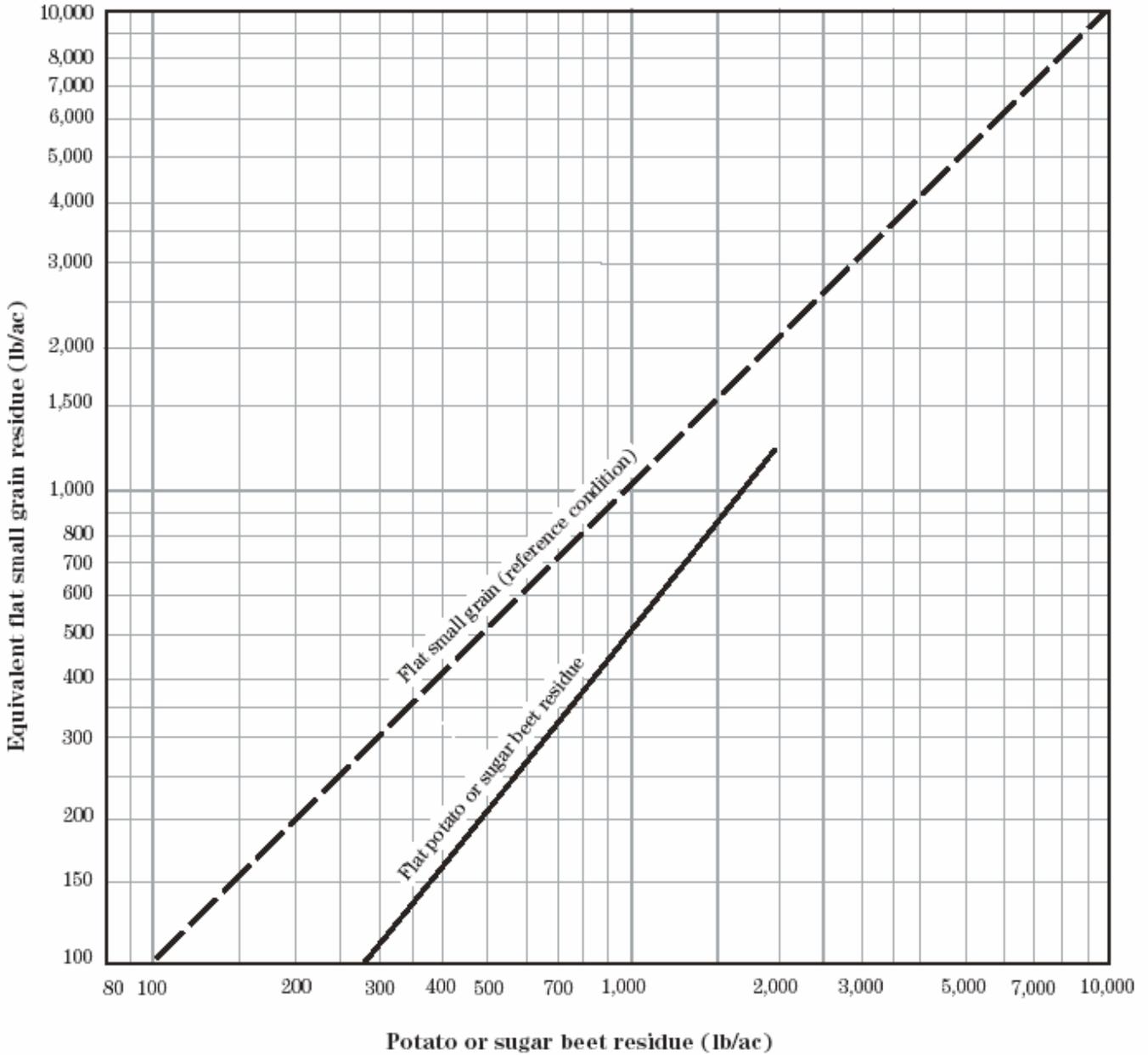
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 21 Flat small grain equivalents of growing peanuts; days after emergence



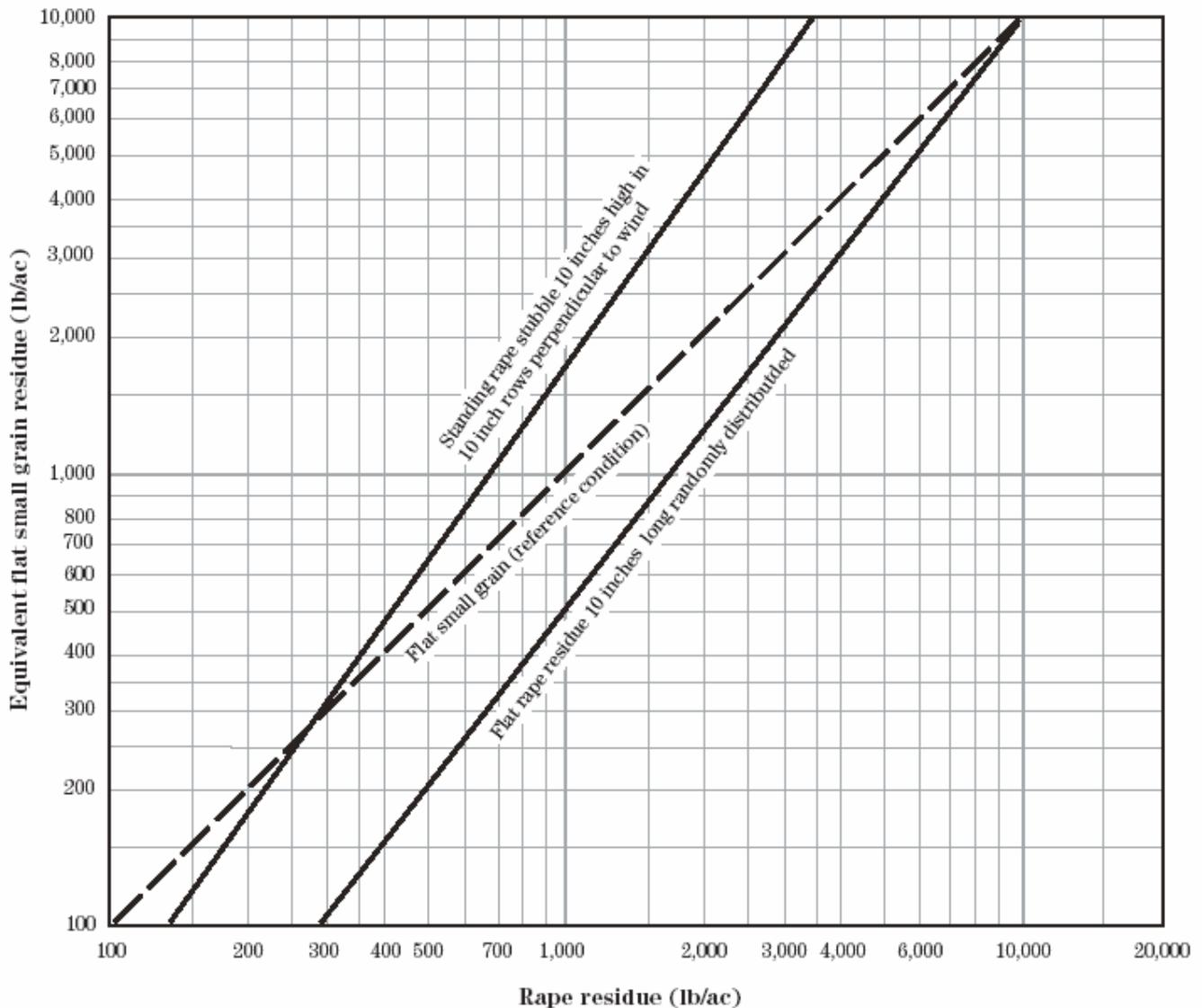
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 22 Flat small grain equivalents potato or sugar beet residue



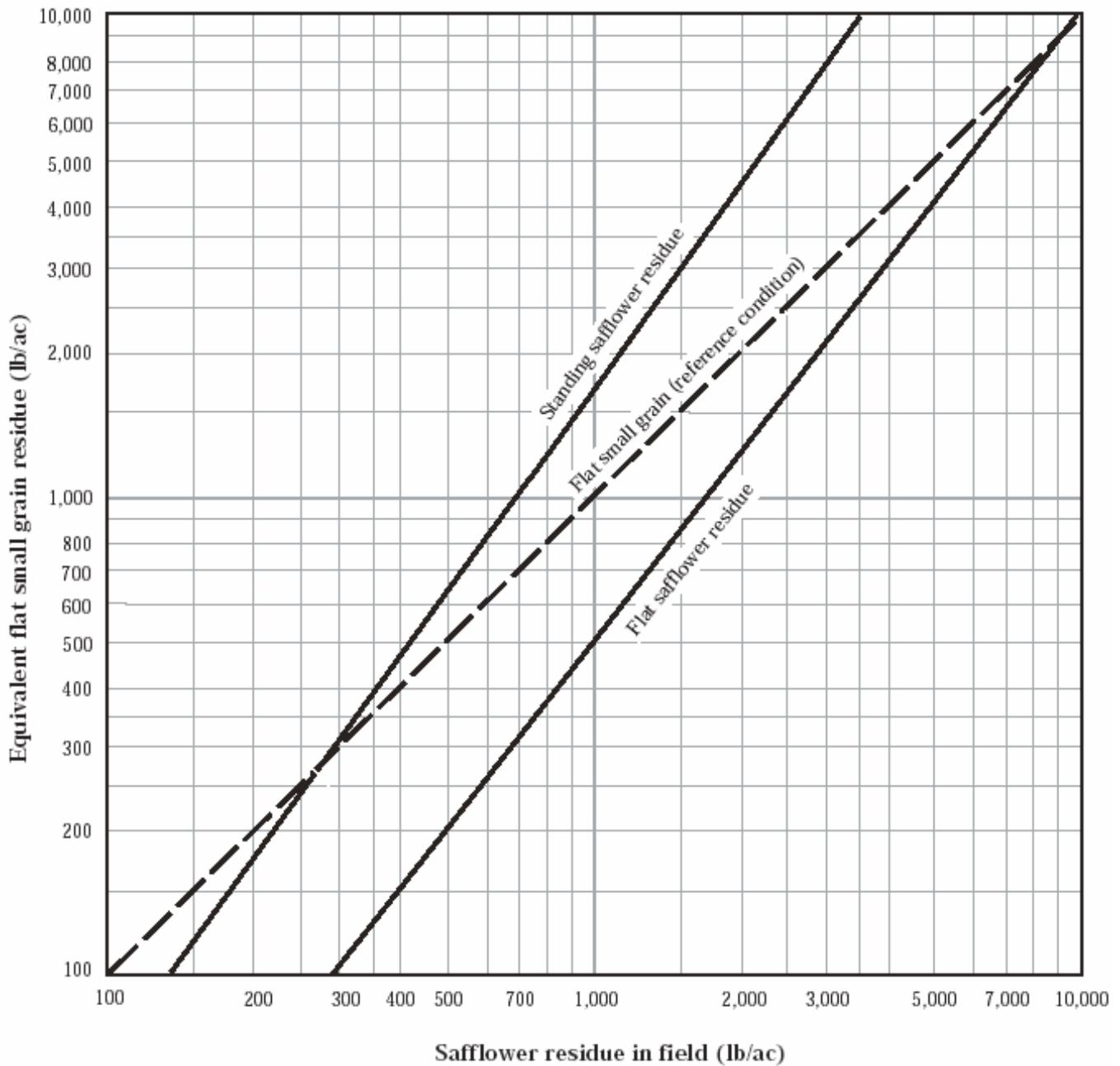
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 23 Flat small grain equivalents of rape residue



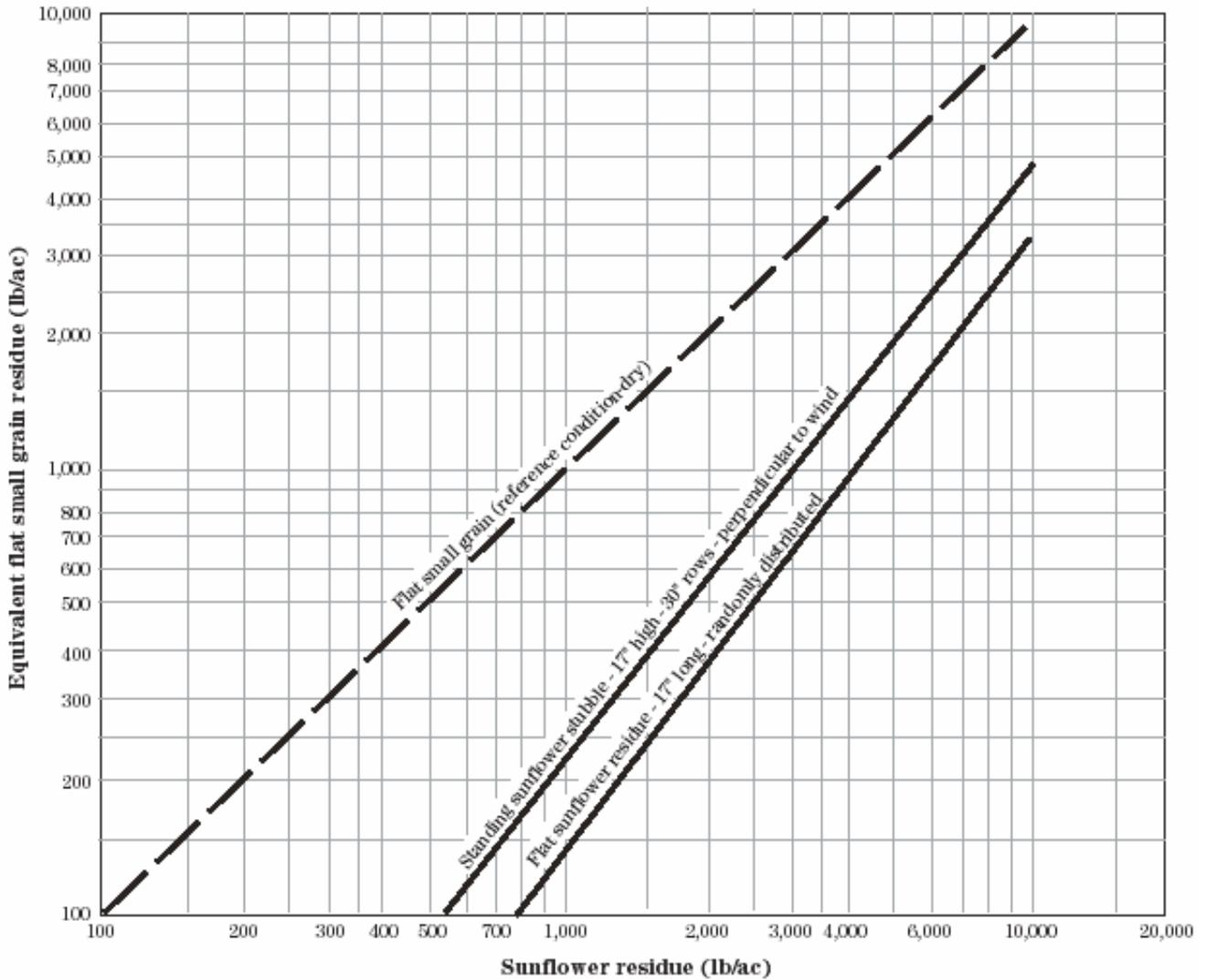
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 24 Flat small grain equivalents of safflower residue



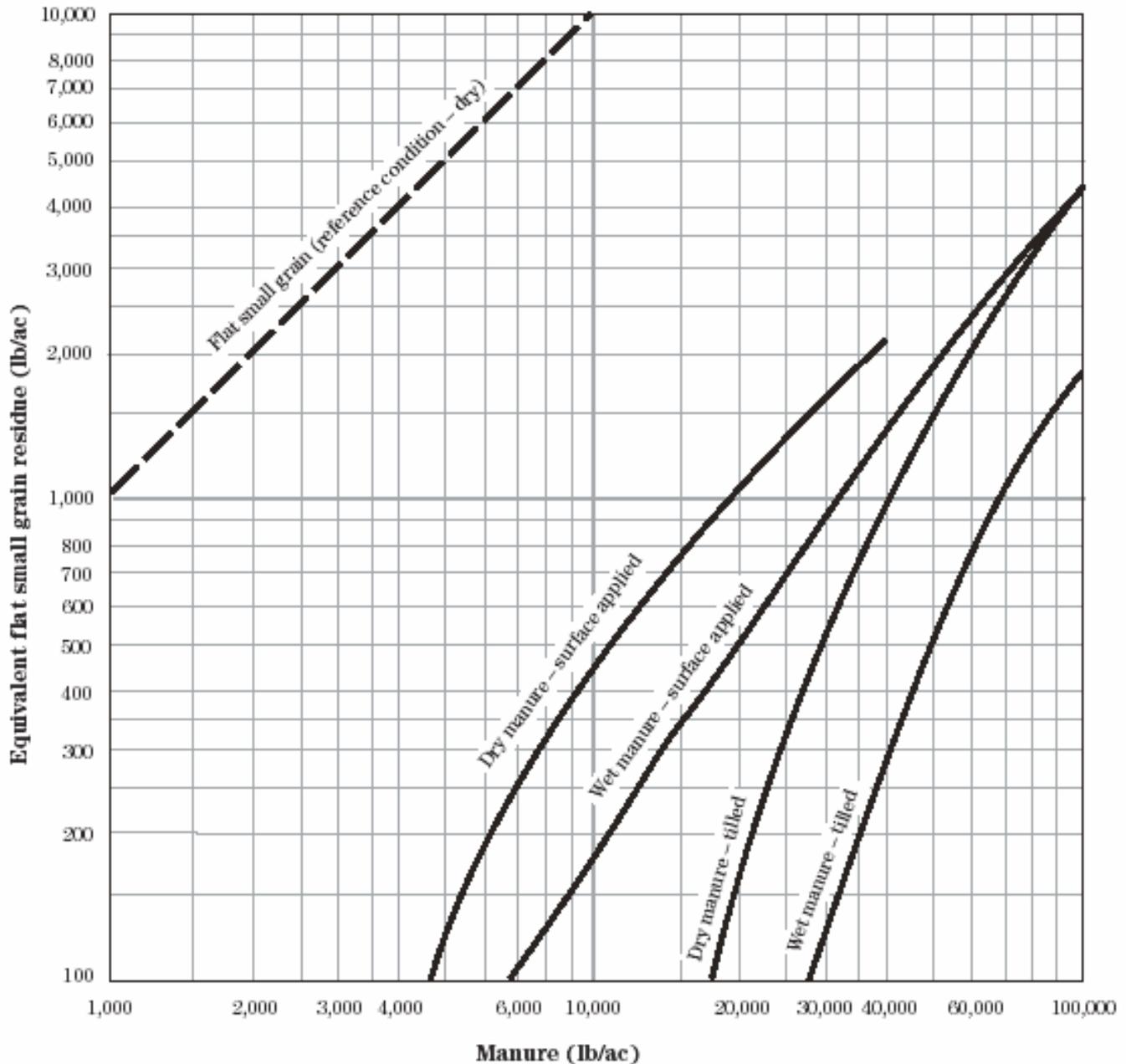
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 25 Flat small grain equivalents of sunflower residue



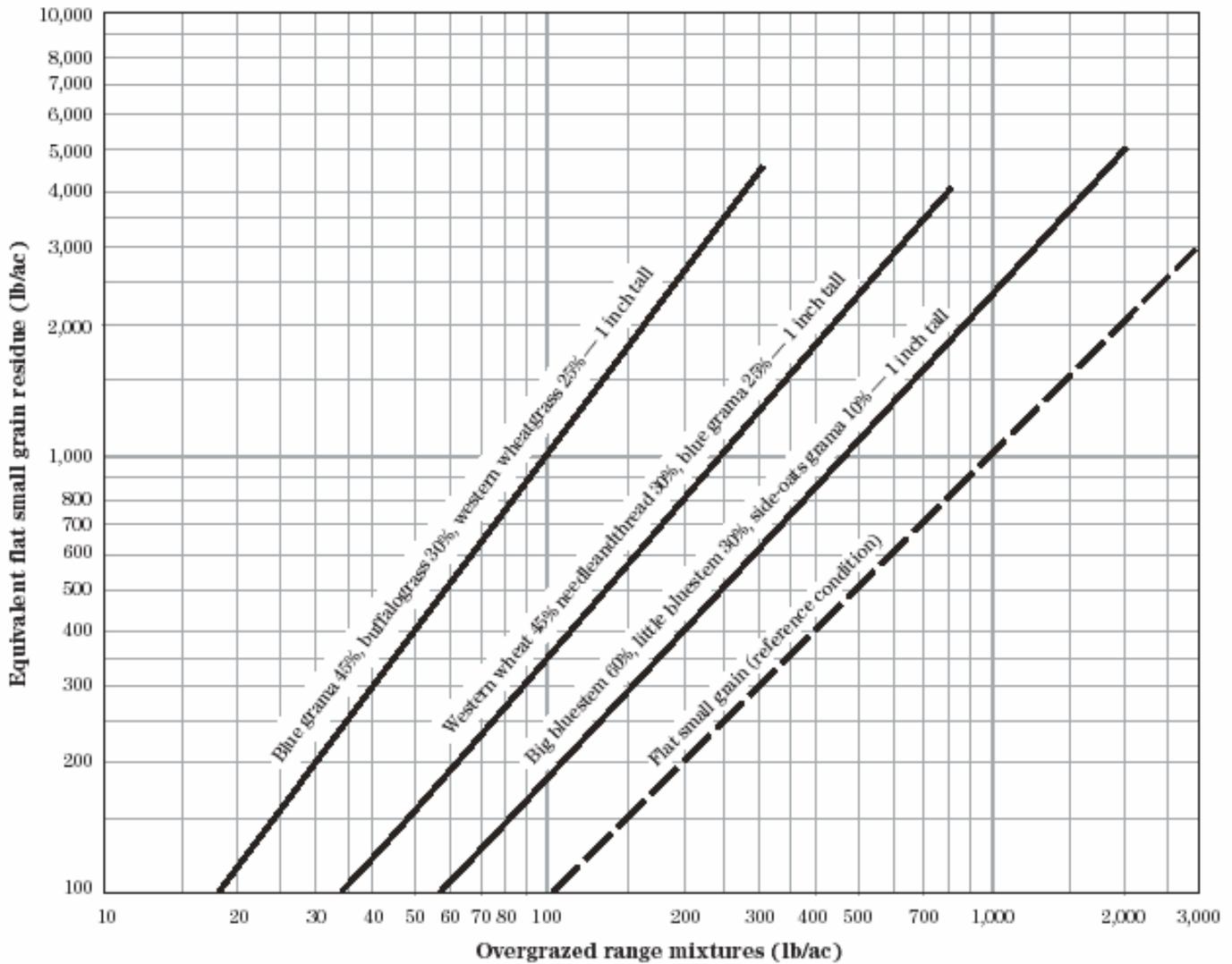
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 26 Flat small grain equivalents of manure



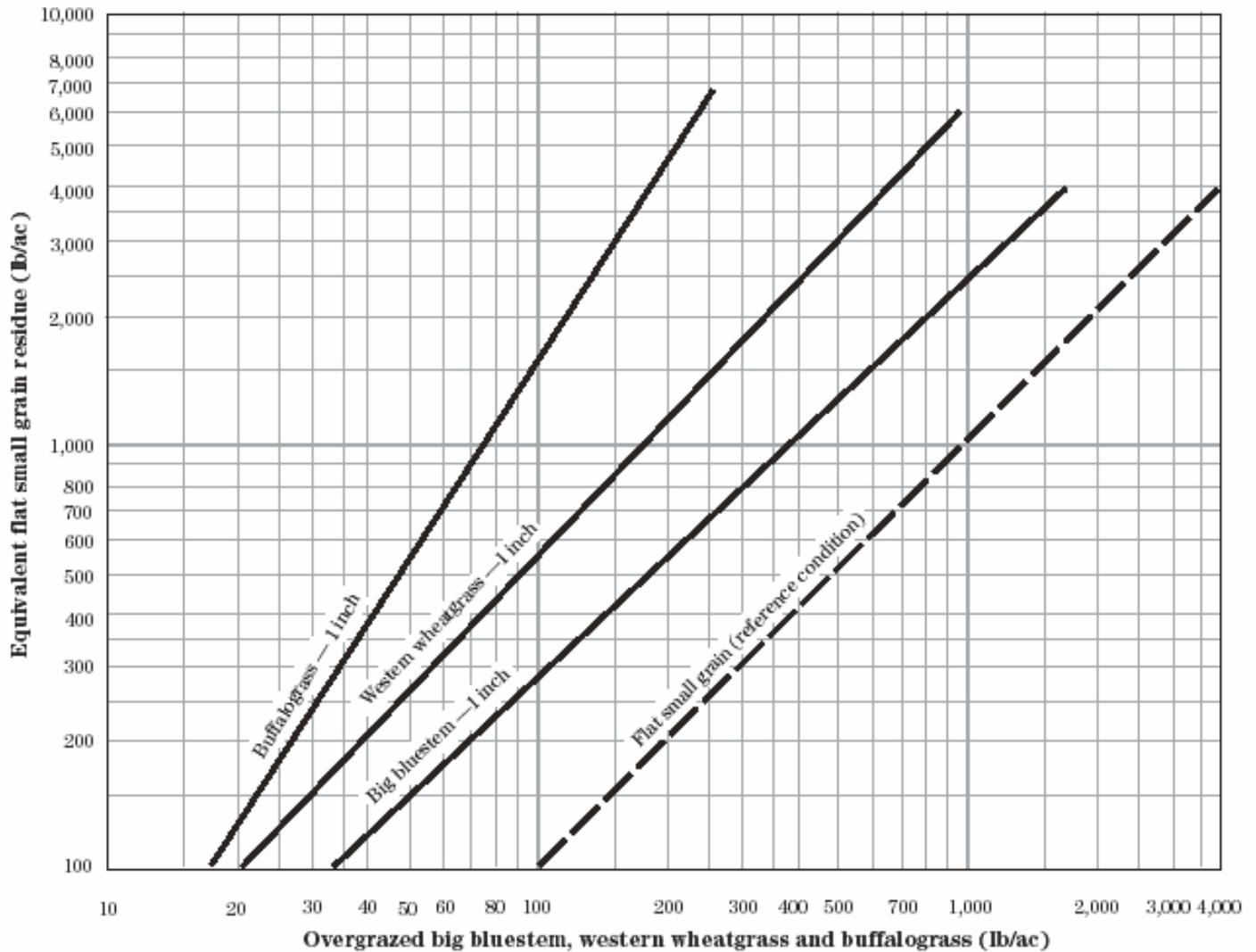
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 27 Flat small grain equivalents of overgrazed range mixtures –big bluestem, little bluestem, sideoats grama, western wheatgrass, needleandthread, blue grama, and buffalograss



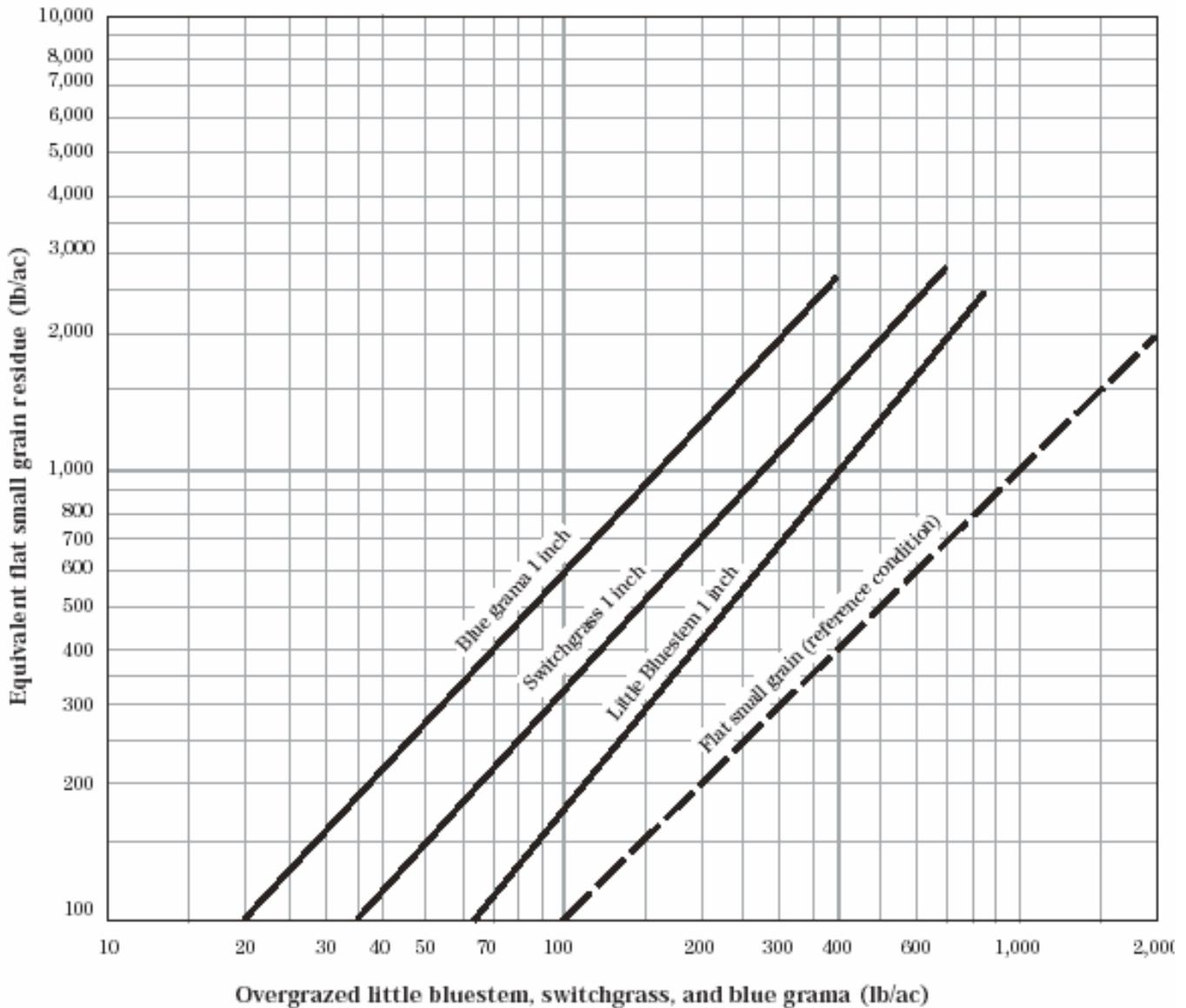
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 28 Flat small grain equivalents of overgrazed big bluestem, western wheatgrass, and buffalograss



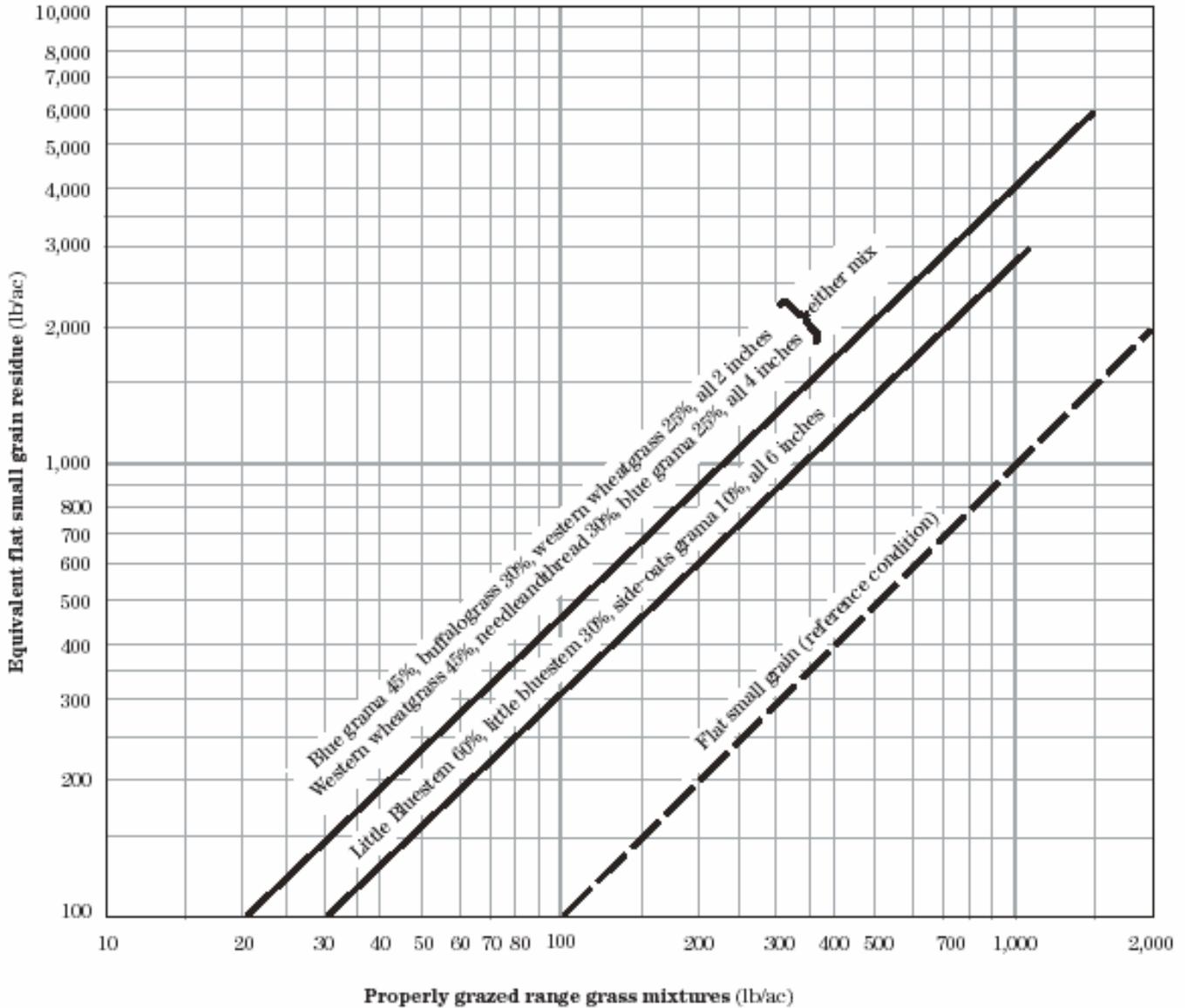
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 29 Flat small grain equivalents of overgrazed little bluestem, switchgrass, and blue grama



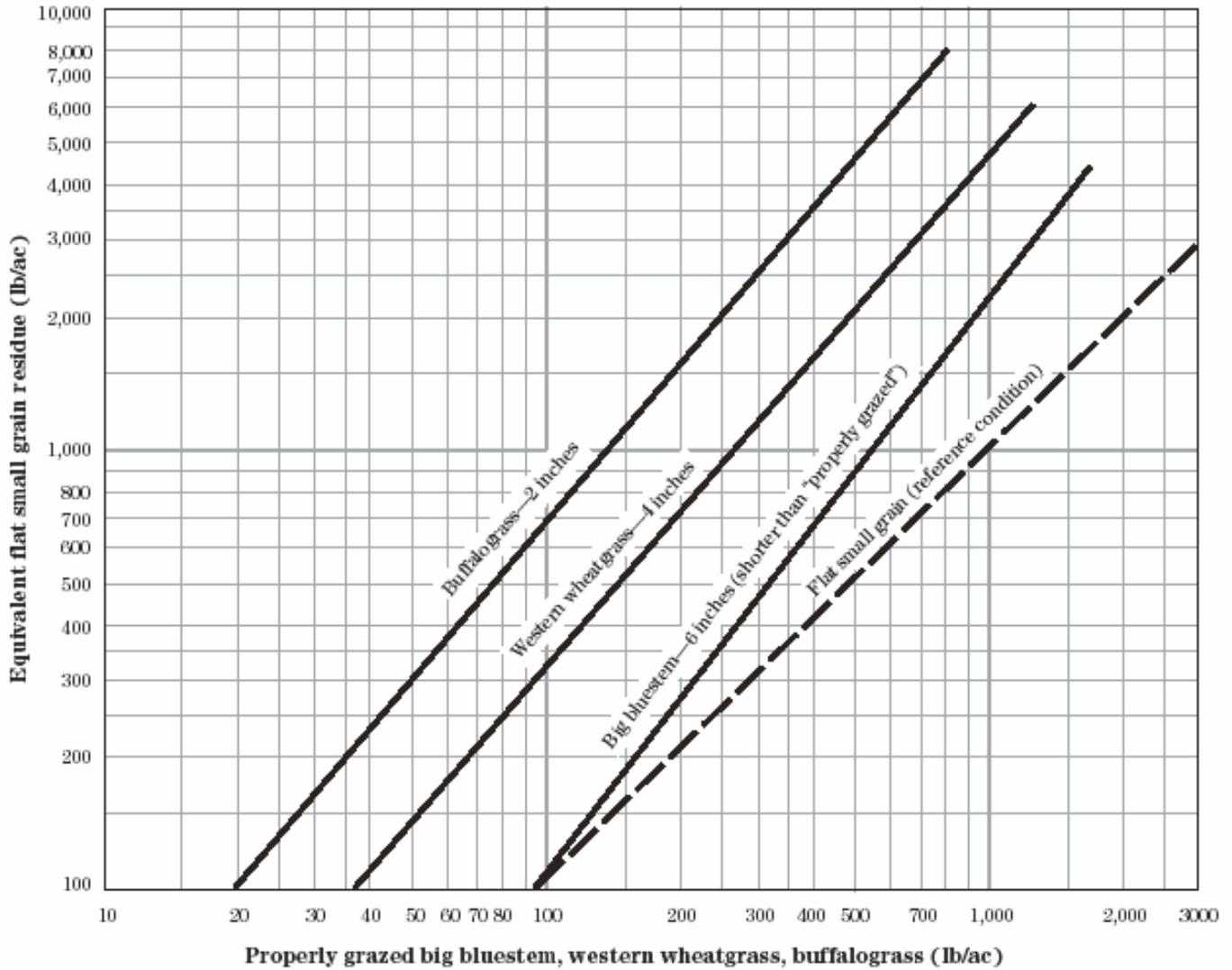
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 30 Flat small grain equivalents of properly grazed range grass mixture



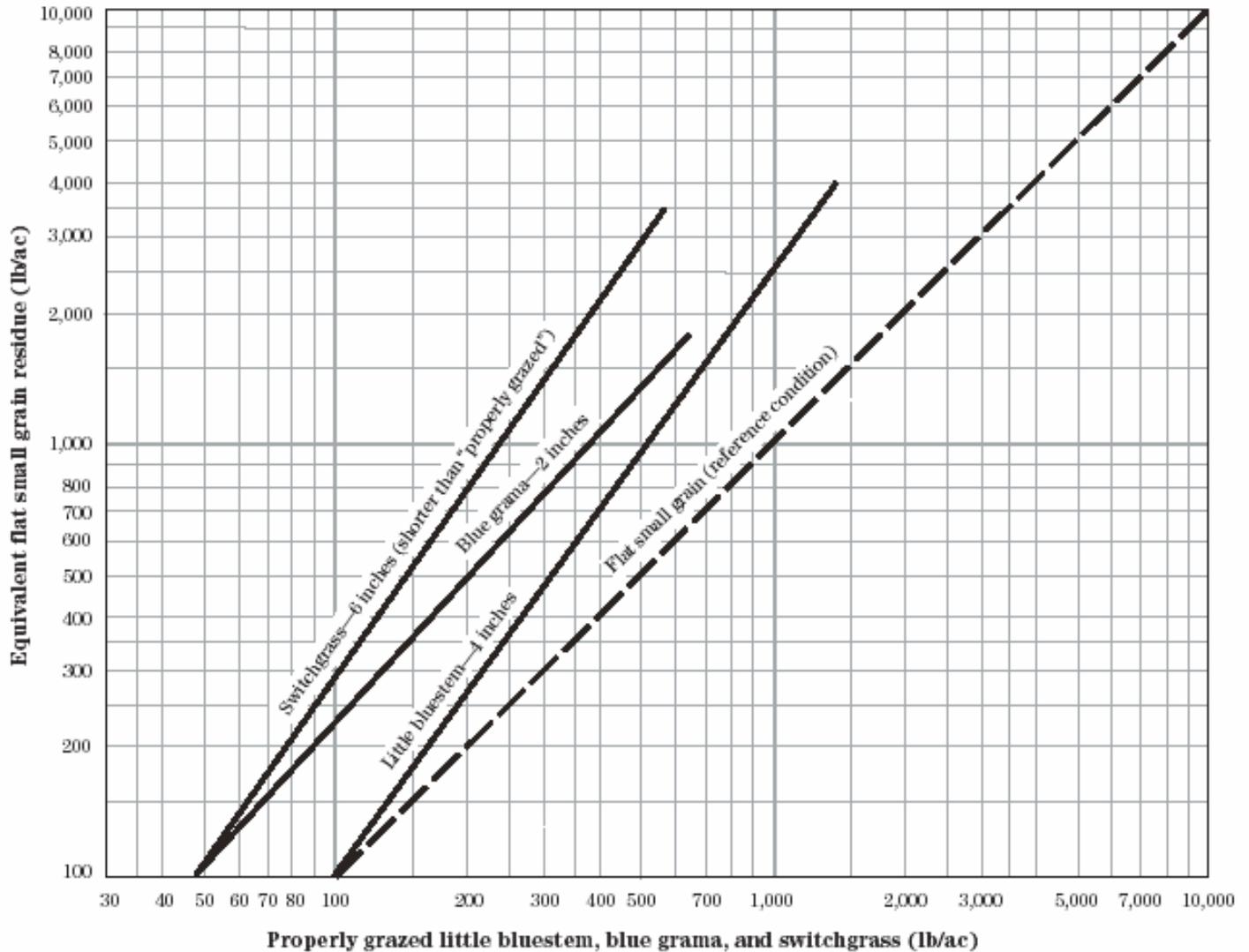
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 31 Flat small grain equivalents of properly grazed big bluestem, western wheatgrass, and buffalograss



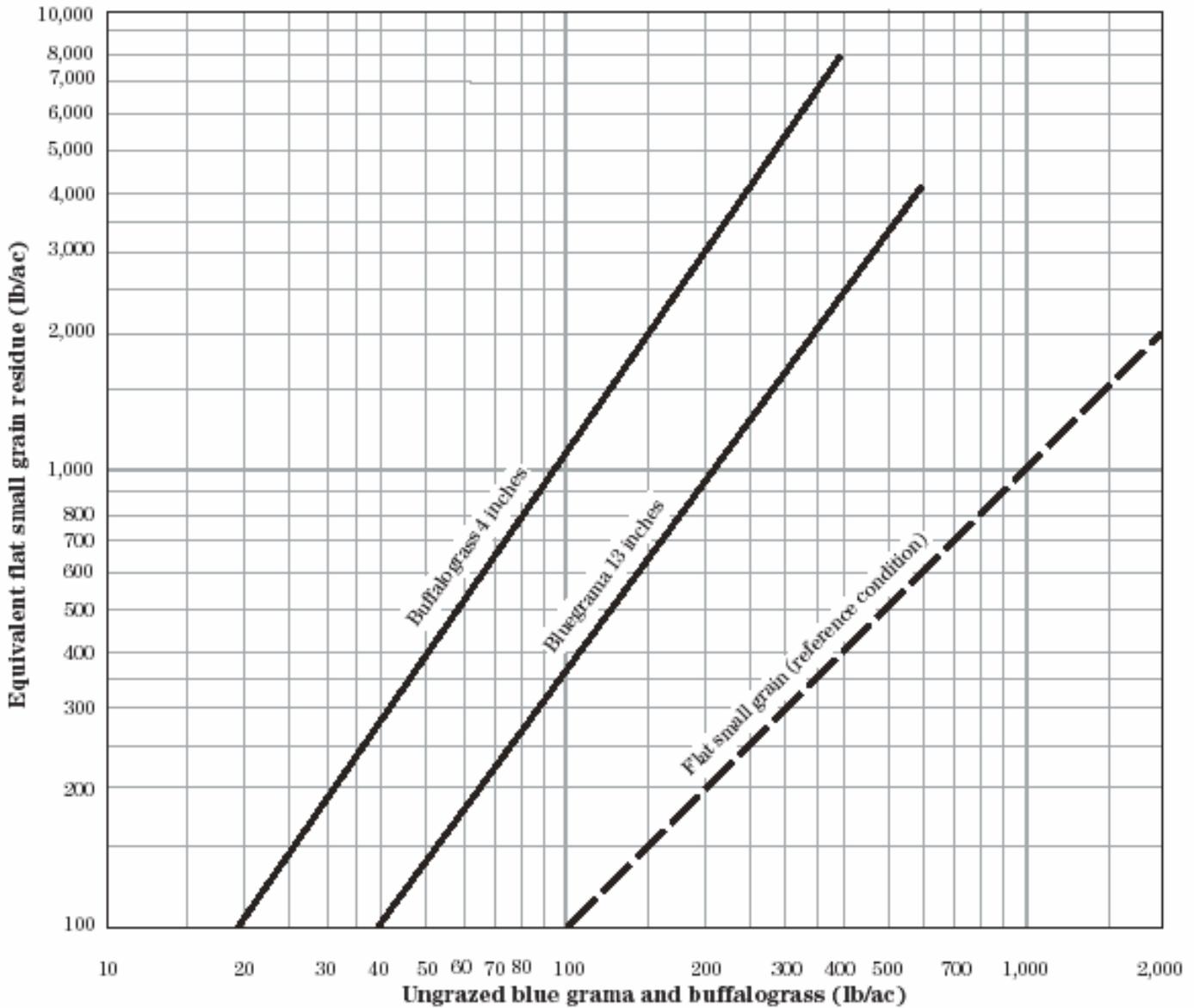
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 32 Flat small grain equivalents of properly grazed little bluestem, blue grama, and switchgrass



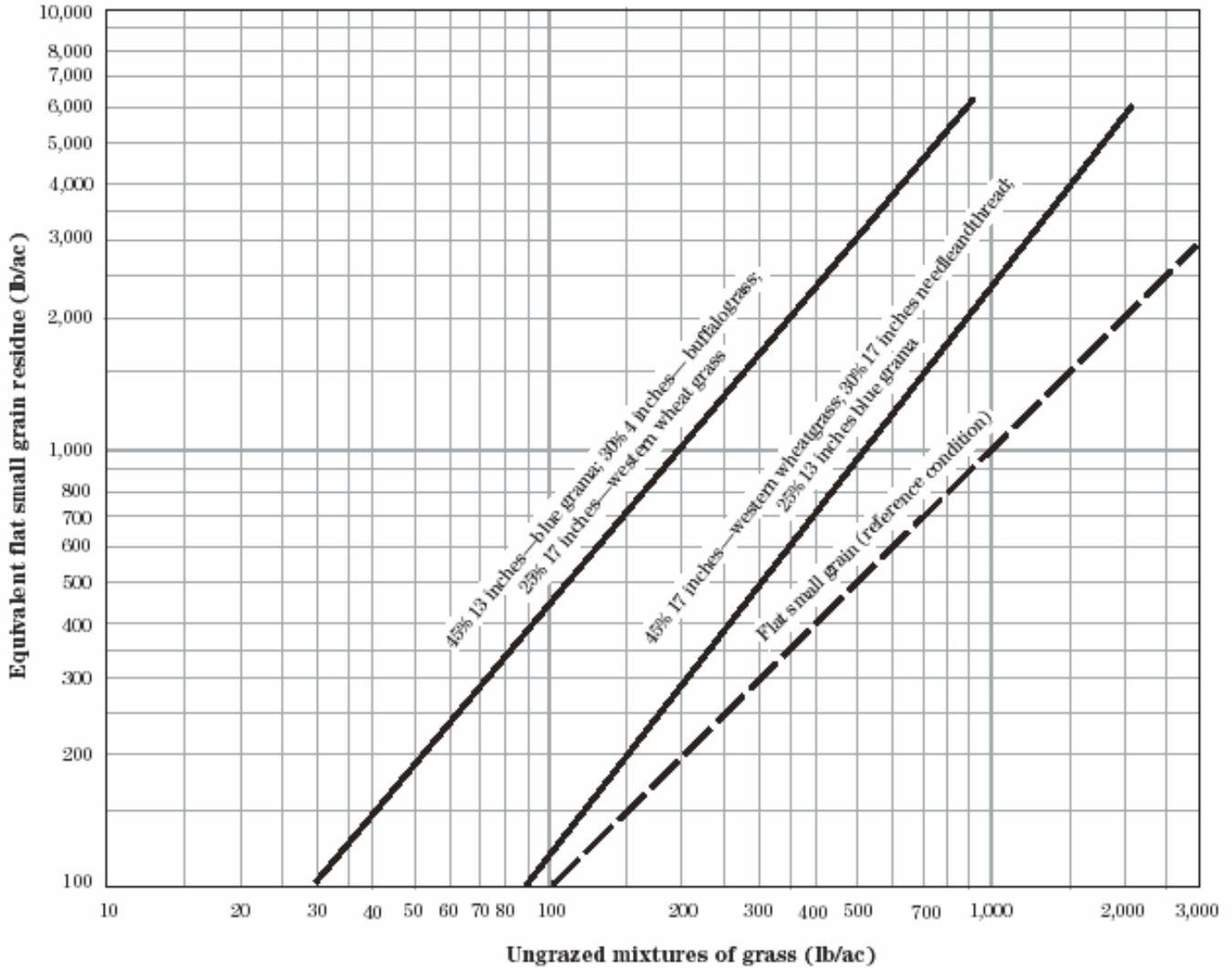
Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 33 Flat small grain equivalents of ungrazed blue grama and buffalograss



Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Figure 34 Flat small grain equivalents of ungrazed western wheatgrass, needleandthread, blue grama, and buffalograss mixtures.



Reference condition: Dry small grain stalks 10 inches long, lying flat on the soil surface in 10-inch rows, rows perpendicular to wind direction, stalks oriented to wind direction. Residue is washed, air dried, and placed as described for the wind tunnel test

Random Roughness, R_t , of 0.25 inches



Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 339

Random Roughness, R_t , of 0.75 inches



Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 342

Random Roughness, R_t , of 0.85 inches



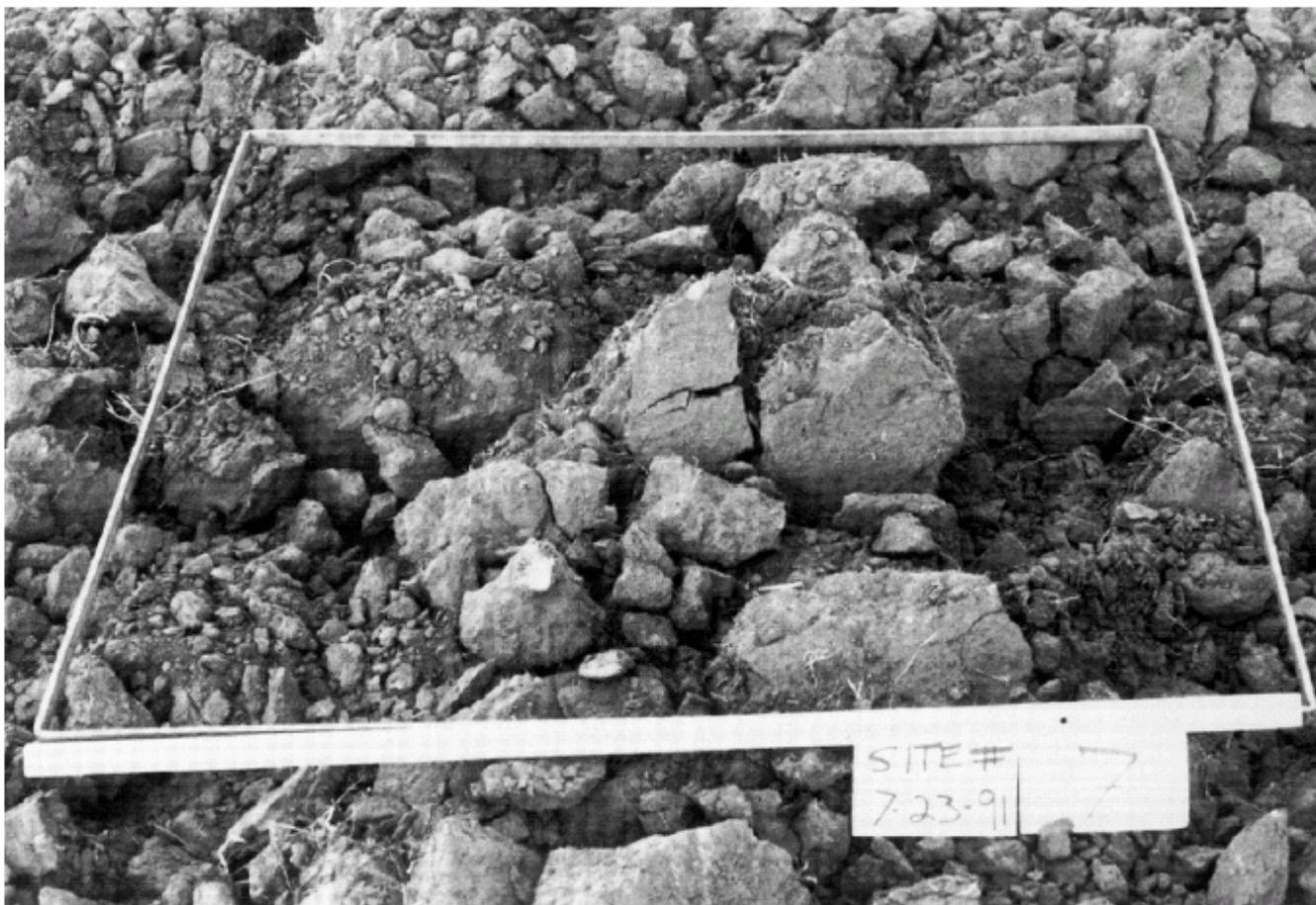
Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 343

Random Roughness, R_t , of 1.05 inches



Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 344

Random Roughness, R_t , of 1.60 inches



Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 345

Random Roughness, R_t , of 1.70 inches



Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 346

Random Roughness, R_t , of 2.15 inches



Source: Agriculture Handbook Number 703, USDA-ARS, *Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE)*, page 347

How to Convert Percent of Cover
To Pounds of Residue Per Acre
(Large Diameter Stalk Crops, i.e. corn, etc)

Percent Cover	Pounds Residue/Acre	Percent Cover	Pounds Residue/Acre	Percent Cover	Pounds Residue/Acre
1	36	34	1484	67	3960
2	72	35	1539	68	4069
3	109	36	1594	69	4183
4	146	37	1650	70	4300
5	183	38	1707	71	4421
6	221	39	1765	72	4546
7	259	40	1824	73	4676
8	298	41	1884	74	4811
9	337	42	1945	75	4951
10	376	43	2008	76	5097
11	416	44	2071	77	5249
12	457	45	2135	78	5408
13	497	46	2201	79	5574
14	539	47	2267	80	5748
15	580	48	2335	81	5931
16	623	49	2405	82	6124
17	665	50	2476	83	6328
18	709	51	2548	84	6545
19	753	52	2621	85	6775
20	797	53	2697	86	7022
21	842	54	2773	87	7287
22	887	55	2852	88	7572
23	933	56	2932	89	7863
24	980	57	3014	90	8224
25	1027	58	3098	91	8600
26	1075	59	3184	92	9020
27	1124	60	3272	93	9497
28	1173	61	3363	94	10048
29	1223	62	3456	95	10699
30	1274	63	3551	99	11496
31	1325	64	3649	97	12523
32	1377	65	3749	98	13972
33	1430	66	3853	99	16447

How to Convert Percent of Cover
To Pounds of Residue Per Acre
(Small Diameter Stalk Crops, i.e. small grains)

Percent Cover	Pounds Residue/Acre	Percent Cover	Pounds Residue/Acre	Percent Cover	Pounds Residue/Acre
1	18	34	742	67	1980
2	36	35	769	68	2035
3	54	36	797	69	2091
4	73	37	825	70	2150
5	92	38	854	71	2210
6	110	39	883	72	2273
7	130	40	912	73	2338
8	149	41	942	74	2405
9	168	42	973	75	2476
10	188	43	1004	76	2548
11	208	44	1035	77	2624
12	228	45	1068	78	2704
13	249	46	1110	79	2787
14	269	47	1134	80	2874
15	290	48	1168	81	2966
16	311	49	1202	82	3062
17	333	50	1238	83	3164
18	354	51	1274	84	3272
19	376	52	1311	85	3388
20	398	53	1348	86	3511
21	421	54	1387	87	3643
22	444	55	1426	88	3786
23	467	56	1466	89	3942
24	490	57	1507	90	4112
25	514	58	1549	91	4300
26	538	59	1592	92	4510
27	562	60	1636	93	4749
28	587	61	1681	94	5024
29	612	62	1728	95	5350
30	637	63	1775	99	5748
31	663	64	1824	97	6262
32	689	65	1875	98	6986
33	715	66	1926	99	8224

The Wind Erosion Tables for each climatic “C” factor and corresponding “I” factor can be found on the web at the following link: <http://www.weru.ksu.edu/nrcs/> and can be found under the heading “E-Tables.” The tables listed in this link are the most current version and can be downloaded and placed into the Field Office Technical Guide (FOTG), Section I–Erosion Prediction, under “Appendix.”

It should be noted that E-Tables for the entire United States are compiled in this link; however, these E-Tables are not needed for Montana. Only E-Tables beginning with C=20 through C=100 and the corresponding I=21 through I=310 are required.