SCHWERMETALLBILANZEN VON LANDWIRTSCHAFTSPARZELLEN DER NATIONALEN BODENBEOBACHTUNG

NABO – Nationales Bodenbeobachtungsnetz der Schweiz

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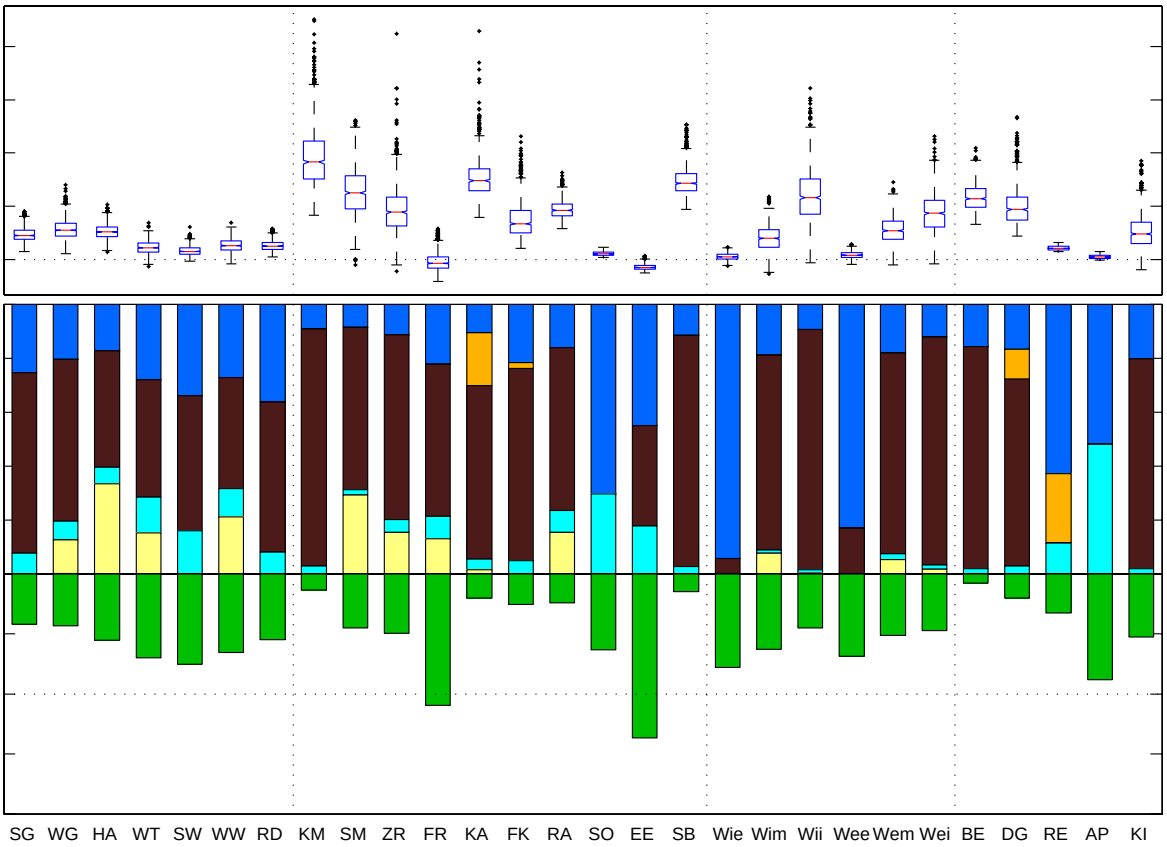
Anhang



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Anhang 1a: Parzellen und Betriebstypen

Standort-nummer	Standort	KT	Höhe (m) (m)	LN (ha) (ha)	Zone	BetriebsTyp (FAT 99)	Tierkategorien	GVE/ha
1	Tänikon	TG	534	107.4	AZ	Kombiniert Veredlung	Rinder/Schweine	1.5
3	Payerne	VD	580	34.5	AZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	0.8
4	Les Fougeres	VS	480	0.6	AZ	Spezialkulturen	Keine	0.0
5	Schafis	BE	440	6.0	AZ	Spezialkulturen	Keine	0.0
9	Binningen	BL	324	60.0	AZ	Kombiniert Andere	Rinder/Schweine	0.7
10	Gais	AR	820	13.5	BZ1	Verkehrsmilch	Rinder	0.9
11	La Sarraz	VD	500	38.5	AZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	0.6
13	Wiedlisbach	BE	465	26.7	AZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	1.1
15	Ins	BE	440	39.5	AZ	Spezialkulturen	Keine	0.0
17	Niedermuhlern	BE	960	20.9	BZ1	Kombiniert Veredlung	Rinder/Schweine	2.8
20	Esserswil	TG	451	20.0	AZ	Spezialkulturen	Keine	0.0
25	Schleitheim	SH	550	33.2	VHZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	1.0
26	Avully	GE	410	60.2	AZ	Kombiniert Andere	Pferde	0.6
28	Leuggern	AG	420	14.2	VHZ	Verkehrsmilch	Rinder/Sonst	1.4
29	Eschenbach	LU	450	25.8	AZ	Kombiniert Veredlung	Rinder/Schweine	2.2
30	Ebikon	LU	635	26.9	VHZ	Kombiniert Veredlung	Rinder/Schweine	2.8
31	Coffrane	NE	800	41.2	VHZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	0.7
33	Mollis	GL	450	18.3	UeZ	Kombiniert Veredlung	Rinder/Schweine	2.3
35	Le Cerneux-Pequignot	NE	1093	41.5	BZ2	Kombiniert Veredlung	Rinder/Schweine	0.9
36	Hochdorf	LU	490	44.0	UeZ	Verkehrsmilch	Rinder/Schweine	1.7
37	Ependes	FR	750	52.6	VHZ	Kombiniert Andere	Rinder	1.0
38	Koppigen	BE	478	22.4	AZ	Kombiniert Veredlung	Rinder/Schweine	1.5
44	Hendschiken	AG	410	15.4	AZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	1.4
46	Vallon	FR	440	51.3	AZ	Ackerbau	Keine	0.9
48	Oberriet	SG	420	37.9	AZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder/Schweine	1.0
49	Unterschächen	UR	1100	12.0	BZ2	Kombiniert Andere	Sonst	0.1
51	Wartau	SG	464	17.8	AZ	Spezialkulturen	Keine	0.2
54	Zuzwil	BE	557	27.8	AZ	Kombiniert Veredlung	Schweine	1.9
55	Nyon	VD	436	1.0	AZ	Spezialkulturen	Keine	0.0
56	Trub	BE	970	12.7	BZ2	Verkehrsmilch	Rinder	1.4
60	Entlebuch	LU	980	16.5	BZ2	Kombiniert Veredlung	Rinder/Schweine	2.2
63	Oensingen	SO	452	30.8	AZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	1.1
64	Duggingen	BL	375	50.0	VHZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	1.0
65	Cornol	JU	520	53.7	EUZ	Kombiniert Verkehrsmilch/Ackerbau	Rinder	0.5
68	Etoy	VD	420	32.5	AZ	Ackerbau	Keine	0.0
69	Attalens	FR	820	93.3	VHZ	Verkehrsmilch	Rinder	0.8
74	Mörschwil	SG	550	12.6	EUZ	Kombiniert Veredlung	Rinder/Schweine	2.7
77	Paspels	GR	845	27.0	BZ1	Kombiniert Andere	Rinder	1.1
78	Igis-Landquart	GR	525	58.2	AZ	Kombiniert Veredlung	Schweine	2.4
79	Pailly	VD	690	20.0	AZ	Ackerbau	Keine	0.0
80	Chevenez	JU	481	152.1	EUZ	Kombiniert Veredlung	Rinder/Schweine	1.4
86	Lützelflüh	BE	618	13.0	UeZ	Kombiniert Andere	Rinder	1.4
87	Klarsreuti	TG	559	34.5	EUZ	Kombiniert Andere	Rinder	1.1
94	S. Antonino	TI	209	7.0	AZ	Spezialkulturen	Keine	0.0
95	Coldrerio	TI	336	40.0	AZ	Kombiniert Andere	Rinder	0.9
96	Gudo	TI	240	12.0	AZ	Spezialkulturen	Keine	0.0
102	Vouvry	VS	379	35.0	AZ	Ackerbau	Keine	0.0
103	Härkingen	SO	432	21.3	AZ	Kombiniert Veredlung	Rinder/Schweine	1.6

Anhang 1b: Kriterien zur Klassifikation der landwirtschaftlichen Betriebe nach FAT99 (2000).

	Bereich	Betriebstyp	GVE/ LN	OAF/ LN	SKul/ LN	RiGVE/ GVE	VMiK/ RiGVE	MAK/ RiGVE	PSZ/ GVE	SG/ GVE	Andere Bedingungen
11	Pflanzenbau	Ackerbau	max. 1	über 70%	max. 10%						
12		Spezialkulturen	max. 1		über 10%						
21	Tierhaltung	Verkehrsmilch		max. 25%	max. 10%	über 75%	über 25%	max. 25%			
22		Mutterkühe		max. 25%	max. 10%	über 75%	max. 25%	über 25%			
23		Anderes Rindvieh		max. 25%	max. 10%	über 75%					nicht 21 oder 22
31		Pferde/Schafe/ Ziegen		max. 25%	max. 10%				über 50%		
41		Veredlung		max. 25%	max. 10%					über 50%	
51	Kombiniert	Verkehrsmilch/ Ackerbau		über 40%		über 75%	über 25%	max. 25%			nicht 11–41
52		Mutterkühe				über 75%	max. 25%	über 25%			nicht 11–41
53		Veredlung								über 25%	nicht 11–41
54		Andere									nicht 11–53

Die Kriterien in einer Zeile müssen alle gleichzeitig erfüllt sein.

Abkürzungen:

GVE	Grossvieheinheit
LN	Landwirtschaftliche Nutzfläche in ha
GVE/LN	Viehbesatz je ha LN
OAF/LN	Anteil offene Ackerfläche an LN
SKul/LN	Anteil Spezialkulturen an LN
RiGVE/GVE	Anteil Rindvieh-GVE am Gesamtviehbestand
VMiK/RiGVE	Anteil Verkehrsmilchkühe am Rindviehbestand
MAK/RiGVE	Anteil Mutter-/Ammenkühe am Rindviehbestand
PSZ/GVE	Anteil Pferde-, Schaf- und Ziegen-GVE am Gesamtviehbestand
SG/GVE	Anteil Schweine- und Geflügel-GVE am Gesamtviehbestand

Quelle: FAT

Anhang 2: Fruchtfolgen und Nutzungen der NABO Parzellen von 1996 bis 2001.

Standort-nummer	1996	1997	1998	1999	2000	2001	Nutzung
1	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
3	Winterroggen	Wintergerste	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Ackerbau
4	Apfel Spindel	Apfel Spindel	Apfel Spindel	Apfel Spindel	Apfel Spindel	Apfel Spindel	Obstanlage
5	Reben	Reben	Reben	Reben	Reben	Reben	Rebbau
9	Erdbeeren	Wintergerste	Erdbeeren	Zwischenfutter	Spargel Grün-	Spargel	Ackerbau
10	Weide extensiv	Wiese wenig intensiv	Wiese wenig intensiv	Wiese wenig intensiv	Wiese wenig intensiv	Wiese wenig intensiv	Wiese Weide
11	Winterweizen	Raps für Speiseöl	Winterweizen	Zuckerrüben	Winterweizen	Wintergerste	Ackerbau
13	Wintergerste	Silomais	Winterweizen	Raps für Speiseöl	Winterweizen	Wiese intensiv	Ackerbau Kunstwiese
15	Eiweisserbsen	Hafer	Raps für Speiseöl	Zuckerrüben	Körnermais	Kabis Lager	Ackerbau Kunstwiese
17	Wintergerste	Wiese intensiv	Silomais	Wintertriticale	Wiese intensiv	Wiese intensiv	Ackerbau Kunstwiese
20	Apfel Spindel	Apfel Spindel	Apfel Spindel	Apfel Spindel	Apfel Spindel	Apfel Spindel	Obstanlage
25	Zuckerrüben	Winterweizen	Wintergerste	Silomais	Zuckerrüben	Winterweizen	Ackerbau
26	Raps für Speiseöl	Winterweizen	Winterweizen	Sonnenblumen	Winterweizen	Wintergerste	Ackerbau
28	Wintertriticale	Wiese mittelintensiv	Wiese mittelintensiv	Silomais	Winterweizen	Winterroggen	Ackerbau Kunstwiese
29	Wiese intensiv	Silomais	Silomais	Winterweizen	Wintergerste	Wiese intensiv	Ackerbau Kunstwiese
30	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
31	Wintertriticale	Wintergerste	Wiese intensiv	Wiese intensiv	Winterweizen	Raps für Speiseöl	Ackerbau Kunstwiese
33	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
35	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
36	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Ackerbau Kunstwiese
37	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
38	Wiese intensiv	Wiese intensiv	Saat- und Frühkartoffeln	Winterweizen	Zuckerrüben	Kartoffeln	Ackerbau Kunstwiese
44	Saat- und Frühkartoffeln	Wintergerste	Wiese intensiv	Wiese intensiv	Körnermais	Winterweizen	Ackerbau Kunstwiese
46	Winterweizen	Zuckerrüben	Körnermais	Winterweizen	Wiese intensiv	Wiese intensiv	Ackerbau
48	Winterweizen	Wiese intensiv	Kartoffeln	Wintergerste	Körnermais	Futterrüben	Ackerbau Kunstwiese
49	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese Weide
51	Wintergerste	Spinat, ein Schnitt	Karotten	Spinat, ein Schnitt	Kartoffeln	Spinat, ein	Gemüsebau
54	Zuckerrüben	Körnermais	Kartoffeln	Wintergerste	Körnermais	Zuckerrüben	Ackerbau
55	Reben	Reben	Reben	Reben	Reben	Reben	Rebbau
56	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Ackerbau
60	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
63	Winterweizen	Raps für Speiseöl	Winterweizen	Wiese intensiv	Wiese intensiv	Wiese intensiv	Ackerbau Kunstwiese
64	Kirschen Halbstamm	Kirschen Halbstamm	Kirschen Halbstamm	Kirschen Halbstamm	Kirschen Halbstamm	Kirschen Halbstamm	Obstanlage
65	Winterweizen	Wintergerste	Raps für Speiseöl	Winterweizen	Wintergerste	Silomais	Ackerbau
68	Zuckerrüben	Winterweizen	Raps für Speiseöl	Winterweizen	Körnermais	Winterweizen	Ackerbau
69	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
74	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese intensiv	Wiese Weide
77	Wiese mittelintensiv	Wiese mittelintensiv	Futterrüben	Winterweizen	Wintertriticale	Wiese mittelintensiv	Ackerbau Kunstwiese
78	Wiese intensiv	Silomais	Winterweizen	Kartoffeln	Wintergerste	Wiese intensiv	Ackerbau Kunstwiese
79	Wintergerste	Hafer	Winterweizen	Raps für Speiseöl	Winterweizen	Eiweisserbsen	Ackerbau
80	Wintergerste	Winterweizen	Körnermais	Winterweizen	Wintergerste	Körnermais	Ackerbau
86	Wiese mittelintensiv	Wiese mittelintensiv	Wiese mittelintensiv	Kartoffeln	Winterroggen	Dinkel (Winterkorn)	Ackerbau Kunstwiese
87	Luzerne	Kartoffeln	Winterweizen	Wintergerste	Wiese intensiv	Körnermais	Ackerbau Kunstwiese
94	Fenchel	Zucchetti, Kürbis, Patisson	Fenchel	Chinakohl	Zucchetti, Kürbis, Patisson	Salate, Kopf-, Eis-, Lollo,	Gemüsebau
95	Winterweizen	Silomais	Winterweizen	Silomais	Silomais	Wintergerste	Ackerbau
96	Reben	Reben	Reben	Reben	Reben	Reben	Rebbau
102	Winterweizen	Soja	Winterweizen	Körnermais	Zuckerrüben	Kartoffeln	Ackerbau
103	Bohnen	Triticale	Wintergerste	Zuckerrüben	Winterweizen	Silomais	Ackerbau

Anhang 3: Räumlich interpolierte Werte der atmosphärischen Deposition (in g/ha Jahr; MW: Mittelwert; VK: Variationskoeffizient).

Standort-nummer	Standort	Cd MW	Cd VK	Pb MW	Pb VK	Cu MW	Cu VK	Zn MW	Zn VK
1	Tänikon	0.8	0.5	18.4	0.4	2.2	4.5	80.2	0.5
3	Payerne	0.6	0.6	19.2	0.4	4.3	2.3	79.0	0.5
4	Les Fougeres	0.5	0.7	17.4	0.4	7.0	1.4	98.9	0.4
5	Schafis	0.7	0.5	19.4	0.4	5.3	1.9	81.3	0.5
9	Binningen	1.1	0.3	20.5	0.4	3.5	2.9	96.6	0.4
10	Gais	0.7	0.5	18.9	0.4	6.8	1.5	93.6	0.4
11	La Sarraz	0.7	0.5	19.0	0.4	2.0	5.1	74.7	0.5
13	Wiedlisbach	0.8	0.5	21.1	0.4	4.9	2.1	102.9	0.4
15	Ins	0.6	0.6	19.0	0.4	5.7	1.8	75.9	0.5
17	Niedermuhlern	0.6	0.6	17.9	0.4	7.5	1.4	88.6	0.5
20	Esserswil	0.9	0.4	22.9	0.3	4.1	2.5	93.7	0.4
25	Schleitheim	0.7	0.5	17.1	0.5	1.6	6.4	80.6	0.5
26	Avully	0.7	0.5	20.2	0.4	2.9	3.5	82.3	0.5
28	Leuggern	0.8	0.5	19.0	0.4	1.7	5.8	91.9	0.4
29	Eschenbach	0.7	0.5	19.6	0.4	6.4	1.6	101.2	0.4
30	Ebikon	0.6	0.6	19.1	0.4	12.2	0.8	94.4	0.4
31	Coffrane	0.6	0.6	19.7	0.4	10.0	1.0	101.9	0.4
33	Mollis	0.6	0.6	18.8	0.4	8.0	1.3	91.0	0.5
35	Le Cerneux-Pequignot	0.6	0.6	17.8	0.4	5.8	1.7	78.4	0.5
36	Hochdorf	0.7	0.5	19.9	0.4	6.5	1.6	97.9	0.4
37	Ependes	0.6	0.6	18.4	0.4	5.4	1.9	78.9	0.5
38	Koppigen	0.8	0.5	20.7	0.4	4.6	2.2	95.2	0.4
44	Hendschiken	0.8	0.5	19.6	0.4	3.2	3.2	97.0	0.4
46	Vallon	0.7	0.5	18.8	0.4	5.7	1.8	80.0	0.5
48	Oberriet	0.8	0.5	20.2	0.4	5.4	1.9	92.4	0.4
49	Unterschächen	0.5	0.7	18.5	0.4	17.2	0.6	104.5	0.4
51	Wartau	0.5	0.7	18.3	0.4	7.7	1.3	78.4	0.5
54	Zuzwil	0.7	0.5	19.4	0.4	5.5	1.8	90.4	0.5
55	Nyon	0.7	0.5	19.7	0.4	2.2	4.7	80.8	0.5
56	Trub	0.7	0.5	19.2	0.4	6.9	1.5	102.2	0.4
60	Entlebuch	0.7	0.5	20.6	0.4	10.9	0.9	102.8	0.4
63	Oensingen	0.9	0.4	21.1	0.4	3.8	2.6	99.8	0.4
64	Duggingen	1.1	0.3	19.4	0.4	4.7	2.1	92.7	0.4
65	Cornol	0.9	0.4	17.9	0.4	6.7	1.5	85.1	0.5
68	Etoy	0.7	0.5	20.0	0.4	2.1	4.8	77.9	0.5
69	Attalens	0.6	0.6	20.4	0.4	2.6	3.9	77.7	0.5
74	Mörschwil	0.8	0.5	21.0	0.4	4.6	2.2	88.7	0.5
77	Paspels	0.5	0.7	20.6	0.4	9.8	1.0	106.5	0.4
78	Igis-Landquart	0.5	0.7	17.5	0.4	5.7	1.8	78.9	0.5
79	Pailly	0.6	0.6	19.2	0.4	2.5	4.0	75.7	0.5
80	Chevenez	0.8	0.5	17.3	0.4	8.2	1.2	80.5	0.5
86	Lützelflüh	0.6	0.6	18.9	0.4	8.6	1.2	100.7	0.4
87	Klarsreuti	0.7	0.5	19.0	0.4	3.7	2.7	82.6	0.5
94	S. Antonino	0.8	0.4	35.3	0.2	20.7	0.5	134.8	0.3
95	Coldrerio	0.9	0.4	39.5	0.2	22.8	0.4	135.0	0.3
96	Gudo	0.9	0.4	42.3	0.2	20.5	0.5	142.4	0.3
102	Vouvry	0.6	0.6	21.1	0.4	2.9	3.5	80.6	0.5
103	Härkingen	0.8	0.4	20.7	0.4	3.6	2.8	97.5	0.4
	Minimum	0.5	0.3	17.1	0.2	1.6	0.4	74.7	0.3
	Maximum	1.1	0.7	42.3	0.5	22.8	6.4	142.4	0.5
	Median	0.7	0.5	19.4	0.4	5.5	1.9	91.5	0.4

Anhang 4: Konzentrationsdaten für landwirtschaftliche Hilfsstoffe und Kulturen.

Nr	Kulturen	P2O5 (%)	Cd (mg/kg TS)	Pb (mg/kg TS)	Cu (mg/kg TS)	Zn (mg/kg TS)
2	Sommergerste	0.8	0.04	0.2	3.4	29.0
3	Hafer	0.8	0.16	0.5	6.5	55.0
5	Sommerweizen	0.8	0.08	0.2	3.2	36.0
6	Wintergerste	0.9	0.04	0.2	3.4	29.0
8	Roggen	0.8	0.03	0.2	3.9	45.0
9	Triticale	0.9	0.08	0.1	3.3	35.0
10	Winterweizen	0.8	0.08	0.1	3.3	35.0
11	Stroh Getreide	0.2	0.13	2.8	4.3	9.0
12	Stroh Roggen	0.3	0.13	2.8	4.3	9.0
13	Stroh Triticale	0.3	0.13	2.8	4.3	9.0
14	Stroh Sommerweizen	0.2	0.13	2.8	4.3	9.0
15	Stroh Wintergerste	0.2	0.13	2.8	4.3	9.0
19	Stro Winterweizen	0.2	0.13	2.8	4.3	9.0
29	Maiskorn	0.7	0.03	0.3	2.7	22.0
30	Kartoffel	0.2	0.23	0.7	6.3	21.0
31	Frühkartoffeln	0.2	0.23	0.7	6.3	21.0
32	Ackerbohnen	1.4	0.09	0.2	10.0	73.0
33	Eiweisserbesen	1.1	0.09	0.2	10.0	73.0
36	Colza	1.6	0.20	0.5	3.3	48.0
37	Soja	1.4	0.06	1.0	15.1	47.7
38	Zuckerrüben	0.1	0.25	1.0	5.0	30.0
39	Futterrüben	0.5	0.25	1.0	5.0	30.0
45	Silomais	0.6	0.20	3.8	4.2	32.0
46	Mais CCM	0.5	0.03	0.3	2.7	22.0
63	Sonnenblumen	1.5	0.06	0.1	15.1	47.7
76	Erdbeeren	0.1	0.00	0.0	4.4	25.0
77	Trauben	0.2	0.05	0.0	206.0	32.5
93	Gras und Klee	0.8	0.13	2.5	7.7	40.0
149	Blumenkohl	0.2	0.09	0.3	6.0	56.0
151	Bohnen	0.1	0.04	0.9	6.0	30.1
154	Chinakohl	0.1	0.50	3.8	6.0	164.0
160	Fenchel	0.2	0.09	0.3	8.0	46.0
166	Chou de garde	0.1	0.06	0.3	3.0	16.0
167	Karotten	0.1	0.23	0.5	5.0	19.0
184	Rosenkohl	0.3	0.04	0.4	4.0	25.0
186	Salat	0.1	0.00	0.3	20.5	59.8
193	Sellerie	0.1	0.14	0.4	4.0	17.4
197	Spargel	1.5	0.00	0.0	23.0	61.0
198	Spinat	0.2	0.30	2.3	12.0	136.0
203	Zucchetti	0.0	0.00	0.0	6.4	35.4
206	Zwiebel	0.1	0.11	0.5	6.0	18.0
450	Erbsen	0.3	0.09	0.2	10.0	73.0
456	Luzerne	0.8	0.13	3.3	8.6	40.0
639	Kirsche	0.2	0.00	0.0	5.8	5.1

Quellen: Vogler und Schmitt (1990); von Steiger und Baccini (1990); Jenka et al. (1996); Keller (2000); Schütze und Nagel (1998); IPE (1994); Reiner et al. (1996); Knoche et al. (1999); GRUDAF (2001);

Anhang 4: Konzentrationsdaten für landwirtschaftliche Hilfsstoffe und Kulturen. (Fortsetzung)

Nr	Hofdünger	P2O5 (%)	Cd (mg/kg TS)	Pb (mg/kg TS)	Cu (mg/kg TS)	Zn (mg/kg TS)
375	Hennenkot	1.15	0.31	2.2	35.2	425.3
393	Geflügelmist 60%	1.90	0.29	2.9	43.8	349.2
444	Harngülle 6%	0.07	0.32	7.0	29.3	127.0
445	Geflügelmist 45%	2.56	0.20	2.3	44.0	516.0
446	Laufstallmist 21%	0.22	0.17	3.8	23.9	117.7
447	Schaf-/Ziegenmist 29%	0.33	0.17	3.8	23.9	117.7
448	Laufstallmist 27%	0.23	0.15	2.8	22.0	91.1
449	Rindvieh Vollgülle 9%	0.17	0.17	3.0	52.5	244.7
462	Rindvieh Vollgülle Milchvieh 9%	0.18	0.18	3.8	37.1	162.2
463	Schweine Vollgülle 5%	0.38	0.21	1.7	116.5	746.5
618	Schweine Mist 27%	0.70	0.12	2.6	66.2	374.5
397	Rinder Gülle kotarm 7.5%	0.12	0.16	2.9	19.1	123.3
398	Rinder Stapelmist 19%	0.32	0.19	4.1	26.2	129.5
420	Trutenmist 60%	2.30	0.29	2.9	43.8	349.2

Quellen: GRUDAF (1994, 2001); Menzi et al. (1993, 1999); Kessler et al. (1994); Menzi und Kessler (1998) Nicholson et al. (1999); Schulthess et al. (2004);

Nr	Mineraldünger	P2O5 (%)	Cd (mg/kg TS)	Pb (mg/kg TS)	Cu (mg/kg TS)	Zn (mg/kg TS)
327	ORG Amendement 2.1.3.2	1.0	0.3	1.3	24.0	34.0
328	NPK Ammonfoskal 1, 8.20.30	18.3	3.6	2.6	11.0	68.0
329	N nitrate d'ammoniaque -Mg 23.0.0.5	0.0	0.0	1.9	7.1	50.0
330	N nitrate d'ammoniaque 27.5 %	0.0	0.0	1.9	7.1	50.0
332	N nitrate d'ammoniaque 33.5%	0.0	0.1	0.1	1.5	1.0
334	N sulfate d'ammoniaque 21.0 %	0.0	0.0	1.2	3.7	30.0
335	NPK Carodor neu 10.10.30	9.6	2.1	2.5	6.5	24.0
336	PK Ceral 0.14.28.+3 Mg	15.3	7.0	3.0	17.0	92.0
337	NPK Colrap 6.12.24	10.9	1.8	9.2	11.0	13.0
338	NPK Colzador 1, 5.15.25	16.7	8.7	22.0	16.0	68.0
339	NP Diammonphosphat 18.46.0	46.0	2.1	5.0	10.0	50.0
340	NP Diamonphosphat 18.46.0	47.2	13.0	2.4	5.2	60.0
341	CA Dolomit 10% Mg, 17% Ca	0.0	0.1	4.6	3.3	228.0
342	PK Elge 42 (0.18.24)	18.4	23.0	5.6	14.0	103.0
343	NPK Epidor 13.13.26	13.6	8.4	2.7	30.0	64.0
344	PK Exakt 0.18.10	18.0	13.4	7.5	11.0	190.0
345	NPK Fertisan S (12.6.18)	6.3	5.2	2.4	13.0	26.0
346	NPK Fertoplex 10.4.27	4.1	0.1	0.4	5.7	1.0
347	NP Fosam (DAP) 18.46.0	44.5	5.0	1.2	1.0	56.0
348	PK Foskal 0.15.30	15.0	2.1	10.0	20.0	50.0
349	PK Foskal 0.20.25	20.0	6.3	4.2	23.0	92.0
350	PK Foskal 2 neu 0.22.22	21.2	18.0	2.1	20.0	328.0
351	NPK Foskal 7.4.35	4.0	3.8	3.8	16.0	62.0
352	N Harnstoff 46.0 %	0.0	0.0	1.1	5.5	45.0
356	ORG Humatin 3.4.5	4.0	7.9	5.6	18.0	46.0
358	PK Hyperphoska. 0.15.25	15.0	10.5	3.2	13.0	205.0
359	PK Hyperphoska. 0.22.12	22.0	15.7	4.5	18.5	250.0
360	P Hyperphosphat 26 %	26.0	13.4	6.2	30.0	238.0
361	PK Kalfosan 0.20.30	21.8	10.0	2.8	29.0	133.0
362	K Kalisalpeter 13.0.44	0.0	0.6	2.1	3.4	45.0
363	K Kalisalz 40% Granulat	0.0	0.1	1.5	6.0	1.0
364	K Kalisalz 60 %	0.0	0.1	5.5	4.6	46.0
366	K Kalisulfat 50 %	0.0	0.1	3.3	0.5	32.0
368	N Kalkammonsalpeter 27.0 %	0.0	0.1	1.6	2.3	27.0

Anhang 4: Konzentrationsdaten für landwirtschaftliche Hilfsstoffe und Kulturen. (Fortsetzung)

Nr	Mineraldünger	P2O5 (%)	Cd (mg/kg TS)	Pb (mg/kg TS)	Cu (mg/kg TS)	Zn (mg/kg TS)
369	N Kalkstickstoff 20 % (Cyanamid)	0.0	0.1	1.2	11.7	31.0
370	N Kalkstickstoff gemahlen 20.0 %	0.0	0.1	1.5	5.2	1.0
371	PK Landor 0.20.30	20.4	19.0	4.7	42.0	163.0
372	NPK Landor 13.13.26	12.9	8.3	0.8	19.0	99.0
373	NPK Landor 15.15.15	15.9	11.0	0.5	18.0	120.0
374	NPK Landor 5.12.24	12.1	6.0	3.0	16.0	57.0
376	NPK Legumor 14.6.22	6.5	0.7	0.8	7.8	12.0
377	NPK Lemax-DG.01 (16.16.16)	16.1	3.2	1.0	24.0	90.0
378	ORG Mediflor 1,2.0,8.0,8.1,8	0.8	3.7	14.4	26.0	57.0
379	CA Meeralgenkalk 7,5% Mg 75% Ca	0.0	0.1	6.1	13.4	157.0
380	NPK Montisan 6.6.12	8.8	5.0	1.5	8.9	120.0
382	NPK Mulkaphos-N 6.12.20	12.0	2.8	23.8	16.0	64.0
383	NPK N.P.K. 13.13.26	13.2	4.1	1.1	34.0	25.0
384	NPK Nitroph.Perf.	5.3	1.9	6.0	11.0	64.0
385	NPK Nitrophosphatk. 9.10.15	9.9	9.4	2.0	13.0	51.0
386	NPK NPK 13.13.21	15.2	18.0	0.6	9.0	177.0
387	NPK NPK 16.16.16	16.0	1.7	4.9	17.0	129.0
388	ORG Orga Fertil 4.8.12	8.0	25.0	20.0	40.0	80.0
389	K Patentkali 0.0.26.5	0.0	0.1	3.0	45.0	40.0
390	PK PE-KA 0.25.25	24.7	30.0	2.4	33.0	222.0
391	N Perlka 19 % N 40 % Ca	0.0	0.1	6.4	4.3	46.0
392	PK PK 0.10.10	10.0	3.4	5.5	7.8	98.0
394	NPK Pratosol	11.7	23.0	1.2	17.0	287.0
395	NPK Printal 8.13.26	13.0	0.1	3.7	11.0	71.0
396	NPK Promosan 25.8.6	9.7	2.5	4.2	30.0	21.0
400	ORG Rador 4.4.5.1,5 35% OS	4.0	5.1	7.7	71.0	125.0
401	ORG Rebe PK 0.7,5.17.2 25% OS	7.5	2.1	2.1	18.0	43.0
402	CA Ricokalk	1.0	0.5	2.4	11.7	48.4
403	PK Rosier 0.20.30	20.0	13.2	7.0	18.0	211.0
404	ORG Royal Humus 1.1.0,2. 18% OS	1.0	1.1	40.0	180.0	400.0
409	P Superphosphat 19 %	19.0	10.1	110.0	23.0	162.0
410	NPK Suplesan 1, 20.8.8.2 2 Na	8.0	2.4	5.0	18.0	68.0
411	PK Thomaskali 11.20	11.0	2.8	3.9	14.0	100.0
412	PK Thomaskali 12.11	12.0	4.3	9.0	23.5	111.0
413	P Thomaskorn 24.0 %	24.6	18.0	26.0	26.0	118.0
415	P Thomasphosphat 15 %	15.0	0.2	11.7	40.0	68.0
416	ORG Trior 4.6.12	6.0	5.1	2.2	11.0	36.0
417	P Triple Super 46 %	46.0	52.0	3.5	45.0	299.0
421	NPK Vollkorn blau 12.12.17	12.3	7.5	4.4	10.0	289.0
422	NPK Vollkorn gelb 15.15.15	16.0	4.5	9.0	8.8	33.0
504	P Thomasmehl 17%, 1997	17.0	0.9	11.7	40.0	68.0
505	PK Plüssfert 0.13.26+2,5, 1997	13.0	4.0	3.7	11.0	71.0
510	NPK Vollkorn grün 13.13.21, 1997	13.0	5.2	0.6	9.0	177.0
512	PK Landor 0.20.30, 1997	20.0	4.8	4.7	42.0	163.0
513	PK Thomaskali 0.11.20+1,8, 1997	11.0	2.0	3.9	14.0	100.0
517	NPK Polyvalent 6.12.30+1,5, 1997	12.0	1.2	3.0	16.0	57.0
518	NPK Landor 13.13.21, 1997	13.0	0.7	0.6	9.0	177.0
519	P Superphosphat Mg 0.18.0+4,0, 1997	18.0	2.9	94.0	22.0	174.0
520	PK Ceral 0.14.28+3,0, 1997	14.0	1.9	3.0	17.0	92.0
521	P Stall Super plus 0.12.0+2,0, 1997	12.0	1.3	3.0	16.0	57.0
522	PK Foskal mit Kalk 0.13.26+2,5, 1997	13.0	3.1	10.0	20.0	50.0
523	NPK Exakt 13.13.21, 1997	13.0	2.4	5.0	18.0	68.0
525	NPK Pratosol 20.10.10, 1997	10.0	7.6	1.2	17.0	287.0
532	NPK Dünger 20.8.8+1,0, 1997	8.0	0.9	4.0	1003.0	58.0
533	NPK Vernal plus 20.6.6+2,0, 1997	6.0	0.6	4.2	30.0	21.0
535	NPK Promix 20.8.8+2 Mg, 1997	8.0	0.7	4.2	30.0	21.0
537	P Hyperphosphat 26%+4.4Mg, 1996	26.0	5.3	6.2	30.0	238.0
539	PK Hyperphos-Kali 13/25+2Mg, 1996	13.0	2.3	3.2	13.0	205.0
540	PK Hyperphos-Kali 14/20+2Mg, 1996	14.0	2.6	3.2	13.0	205.0
541	NP Diammonphosphat 18.46.0, 1996	46.0	5.1	5.0	10.0	50.0
542	P Granuphos 17%, 1997	17.0	7.5	4.9	17.0	129.0
543	P Triple Super 46 %, 1997	46.0	18.2	3.5	45.0	299.0
544	UDU Traubentrester	0.1	0.0	1.0	206.0	32.5
545	N Lonza-Sol N-flüssig 39%	0.0	0.0	1.9	7.1	50.0
546	K Kalimagnesia 30%+6%Mg	0.0	0.6	2.1	3.4	45.0

Quellen: BUWAL (1991, 1993); AG 1997; IUL (1997); Gsponer (1990); von Steiger und Baccini (1990); Mordtvedt (1996); Hackenberg und Wegener (1999); Boysen (1992);

Anhang 4: Konzentrationsdaten für landwirtschaftliche Hilfsstoffe und Kulturen. (Fortsetzung)

Nr	Pestizide	P2O5 (%)	Cd (mg/kg TS)	Pb (mg/kg TS)	Cu (mg/kg TS)	Zn (mg/kg TS)
424	CU Bordeaux Brühe	-	-	-	200000	-
425	ZN Captan Zineb	-	-	-	-	87875
426	CU Cuprofix 50%	-	-	-	500000	-
427	CU Cuprosan fluid	-	-	-	140000	-
428	CU Cuprosan Ultra 15%	-	-	-	150000	-
429	CU Cuprovit blau	-	-	-	350000	-
430	CU Cuproxat	-	-	-	190000	-
431	ZN Dithane DG	-	-	-	-	18750
432	ZN Dithane Ultra	-	-	-	-	20000
433	CU Euparen-Cu	-	-	-	150000	-
434	ZN Galben M	-	-	-	-	16250
435	ZN Mancozeb 80	-	-	-	-	20000
436	CU Phytokupfer 35%	-	-	-	350000	-
437	ZN Ridomil Fitorex, Gold	-	-	-	-	16000
439	CU Topas Multivino	-	-	-	150000	-
440	ZN Zineb	-	-	-	-	190000
589	ZN Acrobat MZ WG (66.7% Mancozeb)	-	-	-	-	16680
614	ZN Megapur Duo (66.7% Mancozeb)	-	-	-	-	16680
615	ZN Rover Star (27.5% Mancozeb)	-	-	-	-	6875
616	ZN Sandofan YM pépite (56% Mancozeb	-	-	-	-	14000
617	ZN Mancozeb combi (66.7% Mancozeb)	-	-	-	-	16680
620	ZN Galaxy WL (66.7% Mancozeb)	-	-	-	-	16680
622	ZN Remiltine pépite (46.5% Mancozeb)	-	-	-	-	11625
625	CU Cuprosan U-DG 18%	-	-	-	180000	-
626	CU Microperl 40%	-	-	-	400000	-
627	CU Kocide DF 40% (Bayer)	-	-	-	400000	-
628	ZN Patafol (64% Mancozeb v. Agroplant	-	-	-	-	16000
636	CU Kupfer 50%	-	-	-	500000	-
637	CU Molto 37.5%	-	-	-	375000	-
640	ZN Parasol (45.5% Mancozeb)	-	-	-	-	11375
644	ZN Antracol Combi (70% Propineb)	-	-	-	-	158200
649	CU Turbofal 11%	-	-	-	110000	-
650	CU Recop 50%	-	-	-	500000	-
981	ZN Mancozeb WG (60%)	-	-	-	-	12000
982	CU Vinipur Spezial 15%	-	-	-	150000	-

Quellen: FAW (1991, 1999); LANDI (2003); BLW (2004); und Produkteinformation des Herstellers;

Nr	Klärschlamm	P2O5 (%)	Cd (mg/kg TS)	Pb (mg/kg TS)	Cu (mg/kg TS)	Zn (mg/kg TS)
452	KS ARA Oensingen	0.27	1.3	79	295	902
460	KS ARA Zurzach	0.27	1.8	158	410	913
574	KS ARA La Sarraz	0.55	1.0	151	447	936
586	KS getrocknet ARA Roche	6.94	1.2	74	494	987
621	KS ARA Wangen/Wiedlisbach	0.12	2.0	192	382	1194
623	KS KS getrocknet ARA Falkenstein	2.64	0.8	41	168	449
624	KS KS getrocknet ARA Matzingen	0.30	2.5	73	284	783
634	KS getrocknet ARA Werdhölzli (ZH)	6.76	1.8	151	475	1064
638	KS ARA Gunzgen	0.40	2.0	116	347	1501
646	KS ARA Baden	0.31	15.3	123	368	1258
648	KOM Kompost aus Abfällen	0.35	0.3	52	42	232

Quellen: Klärschlammdatenbank des BLW; Palasthy (1983);

Anhang 5: Definition von unsicheren Bilanzgrössen für die Berechnung der Cadmiumbilanz (in mg/kg TS)

Nr	Hilfsstoff oder Kultur	Mittelwert (mg/kg)	Std.abw. (mg/kg)	Minimum (mg/kg)	Maximum (mg/kg)	Anzahl (1)
93	Gras und Klee	0.13	0.08	0.02	0.40	1027
10	Winterweizen	0.08	0.05	0.01	0.44	230
19	Stroh Winterweizen	0.13	0.01	0.04	0.64	221
45	Silomais	0.20	0.12	0.04	0.50	169
6	Wintergerste	0.04	0.02	0.01	0.18	144
15	Stroh Wintergerste	0.13	0.01	0.04	0.64	131
30	Kartoffeln	0.23	0.08	0.00	0.44	99
38	Zuckerrüben	0.25	0.16	0.04	0.75	75
36	Colza	0.20	0.05	0.12	0.19	55
9	Triticale	0.08	0.05	0.01	0.44	42
18	Stroh Triticale	0.13	0.01	0.04	0.64	41
198	Spinat	0.30	0.15	0.02	2.00	6
462	Vollgülle Milchvieh 9%	0.18	0.09	0.08	3.20	882
463	Vollgülle Schwein 5%	0.21	0.10	0.08	0.51	705
397	Rinderharngülle	0.16	0.08	0.08	1.46	509
398	Rinder Stapelmist 19%	0.19	0.10	0.04	3.41	327
446	Laufstallmist 21%	0.17	0.08	0.04	3.10	185
444	Harngülle 6%	0.32	0.24	0.12	0.59	97
393	Hennenmist 60%	0.29	0.15	0.11	0.76	40
449	Rindvieh Vollgülle 9%	0.17	0.08	0.08	0.80	22
618	Schweine Mist 27%	0.12	0.07	0.06	0.35	11
447	Schaf-/Ziegenmist 29%	0.17	0.08	0.04	3.10	11
375	Hennenkot	52.00	15.00	30.00	71.00	108
417	P Super Triple 46 %	52.00	15.00	30.00	71.00	136
413	P Thomaskorn 24.0 %	18.00	3.60	7.00	29.00	7
371	PK Landor 0.20.30	19.00	3.80	8.00	30.00	5
634	KS ARA Werdhölzli (ZH)	1.83	0.24	1.40	2.20	32
586	KS ARA Roche	1.20	0.43	1.10	1.60	16
646	KS ARA Baden	15.30	27.60	2.10	70.00	10
624	KS ARA Matzingen	2.50	6.00	0.94	15.00	3
460	KS ARA Zurzach	1.75	0.21	1.60	1.90	2

(1) Häufigkeit über alle Parzellen während des Bilanzzeitraums 1996 bis 2001

Anhang 5: (Fortsetzung) Definition von unsicheren Bilanzgrössen für die Berechnung der Bleibilanz (in mg/kg)

Nr	Hilfsstoff oder Kultur	Mittelwert (mg/kg)	Std.abw. (mg/kg)	Minimum (mg/kg)	Maximum (mg/kg)	Anzahl (1)
93	Gras und Klee	2.50	1.60	0.20	10.20	1027
10	Winterweizen	0.10	0.03	0.04	0.80	230
19	Stroh Winterweizen	2.80	1.15	2.00	6.20	221
45	Silomais	3.80	2.30	0.50	9.40	169
6	Wintergerste	0.20	0.10	0.10	0.70	144
15	Stroh Wintergerste	2.80	1.15	2.00	6.20	131
30	Kartoffeln	0.70	0.30	0.23	1.10	99
38	Zuckerrüben	1.00	1.10	0.10	12.10	75
9	Triticale	0.10	0.03	0.04	0.80	42
18	Stroh Triticale	2.80	1.15	2.00	6.20	41
198	Spinat	2.25	0.70	0.20	4.40	6
462	Vollgülle Milchvieh 9%	3.80	3.77	1.34	49.54	1014
463	Vollgülle Schwein 5%	1.70	1.33	0.50	15.80	816
397	Rinderharngülle	2.90	2.97	1.00	17.34	597
398	Rinder Stapelmist 19%	4.10	2.67	0.10	17.14	368
446	Laufstallmist 21%	3.80	2.43	0.09	15.58	199
444	Harngülle 6%	7.00	7.00	3.90	19.50	110
393	Hennenmist 60%	2.90	2.90	1.69	23.68	40
449	Rindvieh Vollgülle 9%	3.00	2.08	0.33	14.17	26
618	Schweine Mist 27%	2.60	1.45	1.02	9.87	13
447	Schaf-/Ziegenmist 29%	3.80	2.43	0.09	15.58	13
448	Laufstallmist 27%	2.80	2.00	1.30	11.90	8
330	N Nitrate d'ammoniaque 27.5 %	1.90	1.00	0.80	6.60	1465
364	K Sel de potasse 60 %	5.50	2.75	0.70	11.00	290
329	N Nitrate d'ammoniaque-Mg 23.0.0.5	1.90	1.00	0.80	6.60	279
543	P Super triple 46 %	3.50	1.75	2.10	5.20	136
352	N Urée 46.0 %	1.10	0.55	0.36	2.90	90
545	N Lonza-Sol liquide 39%	1.90	1.00	0.80	6.60	72
635	K P.R.P.	5.50	3.00	0.70	11.00	71
523	NPK Exakt 13.13.21, 1997	5.00	2.50	3.70	24.00	67
410	NPK Suplesan 1, 20.8.8.2 2 Na	5.00	2.50	3.70	24.00	60
334	N Sulfate d'ammoniaque 21.0 %	1.20	0.60	1.10	1.40	49
338	NPK Colzador 1, 5.15.25	22.00	4.40	8.00	35.00	17
522	PK Foskal mit Kalk 0.13.26+2,5, 199	10.00	2.00	4.00	16.00	8
413	P Thomaskorn 24.0 %	26.00	5.20	11.00	41.00	7
409	P Superphosphate19 %	110.00	22.00	44.00	176.00	3
634	KS ARA Werdhölzli (ZH)	151.10	33.58	113.00	211.00	36
586	KS ARA Roche	74.00	16.28	54.00	93.00	18
646	KS ARA Baden	123.00	37.70	86.00	220.00	12
621	KS ARA Wangen/Wiedlisbach	192.00	57.00	30.00	300.00	9
574	KS ARA La Sarraz	150.50	45.00	50.00	300.00	9
624	KS ARA Matzingen	73.00	18.00	62.00	117.00	3
460	KS ARA Zurzach	157.50	19.10	114.00	177.00	2
452	KS ARA Oensingen	79.00	13.00	64.00	98.00	2
638	KS ARA Gunzgen	116.00	29.00	30.00	203.00	1

(1) Häufigkeit über alle Parzellen während des Bilanzzeitraums 1996 bis 2001

Anhang 5: (Fortsetzung) Definition von unsicheren Bilanzgrössen für die Berechnung der Kupferbilanz (in mg/kg)

Nr	Hilfsstoff oder Kultur	Mittelwert (mg/kg)	Std.abw. (mg/kg)	Minimum (mg/kg)	Maximum (mg/kg)	Anzahl (1)
93	Gras und Klee	7.7	2.6	2.0	16.0	1027.0
10	Winterweizen	3.3	1.3	0.9	5.6	230.0
19	Stroh Winterweizen	4.3	1.0	2.0	10.0	221.0
45	Silomais	4.2	1.5	2.0	11.0	169.0
6	Wintergerste	3.4	1.1	1.1	6.3	144.0
15	Stroh Wintergerste	4.3	1.0	2.0	10.0	131.0
30	Kartoffeln	6.3	2.7	3.0	12.7	99.0
38	Zuckerrüben	5.0	2.0	2.2	11.4	75.0
36	Colza	3.3	0.4	2.9	3.6	55.0
9	Triticale	3.3	1.3	0.9	5.6	42.0
18	Stroh Triticale	4.3	1.0	2.0	10.0	41.0
198	Spinat	12.0	3.6	2.0	23.0	6.0
462	Vollgülle Milchvieh 9%	37.1	20.0	12.5	160.0	1014.0
463	Vollgülle Schwein 5%	116.5	58.0	30.0	376.0	816.0
397	Rinderharngülle	19.1	19.1	0.5	187.5	597.0
398	Rinder Stapelmist 19%	26.2	11.5	2.8	88.2	368.0
446	Laufstallmist 21%	23.9	10.4	2.5	80.2	199.0
444	Harngülle 6%	29.3	23.2	18.5	71.0	110.0
393	Hennenmist 60%	43.8	22.5	8.4	87.6	40.0
449	Rindvieh Vollgülle 9%	52.5	29.0	11.7	267.0	26.0
618	Schweine Mist 27%	66.2	66.0	37.9	501.0	13.0
447	Schaf-/Ziegenmist 29%	23.9	10.4	2.5	80.2	13.0
545	N Lonza-Sol liquide 39%	7.1	2.0	2.0	16.0	1465.0
330	N Nitrate d'ammoniaque 27.5 %	4.6	1.1	2.0	11.0	290.0
364	K Sel de potasse 60 %	7.1	2.0	2.0	16.0	279.0
329	N Nitrate d'ammoniaque-Mg 23.0.(	5.5	1.4	4.0	6.1	90.0
352	N Urée 46.0 %	7.1	2.0	2.0	16.0	72.0
543	N Lonza-Sol liquide 39%	45.0	12.0	10.0	79.0	136.0
533	K P.R.P.	30.0	8.0	5.0	54.0	26.0
523	NPK Exakt 13.13.21, 1997	18.0	5.0	5.0	50.0	67.0
410	NPK Suplesan 1, 20.8.8.2 2 Na	18.0	5.0	5.0	50.0	60.0
634	KS ARA Werdhölzli (ZH)	475.2	48.1	374.0	526.0	36.0
586	KS ARA Roche	494.0	115.0	300.0	585.0	18.0
646	KS ARA Baden	368.0	91.0	204.0	577.0	12.0
621	KS ARA Wangen/Wiedlisbach	382.0	96.0	200.0	600.0	9.0
574	KS ARA La Sarraz	447.0	112.0	200.0	600.0	9.0
624	KS ARA Matzingen	284.0	50.0	184.0	317.0	3.0
460	KS ARA Zurzach	410.0	48.0	376.0	444.0	2.0
452	KS ARA Oensingen	295.0	41.0	254.0	405.0	2.0

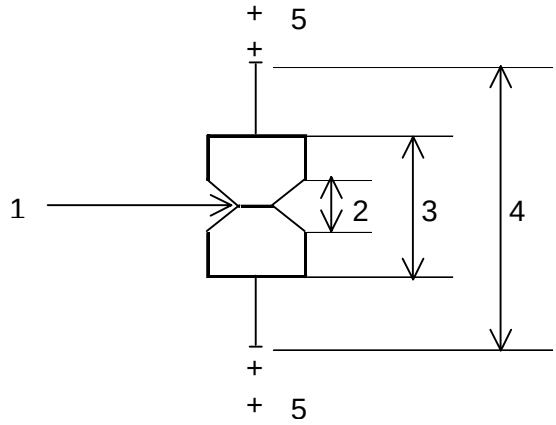
(1) Häufigkeit über alle Parzellen während des Bilanzzeitraums 1996 bis 2001

Anhang 5: (Fortsetzung) Definition von unsicheren Bilanzgrössen für die Berechnung der Zinkbilanz (in g/kg)

Nr	Hilfsstoff oder Kultur	Mittelwert (mg/kg)	Std.abw. (mg/kg)	Minimum (mg/kg)	Maximum (mg/kg)	Anzahl (1)
93	Gras und Klee	40	12	13	78	1027
10	Winterweizen	35	10	12	61	230
19	Stroh Winterweizen	9	2	3	16	221
45	Silomais	10	17	11	152	169
6	Wintergerste	29	8	20	54	144
15	Stroh Wintergerste	9	2	3	16	131
30	Kartoffeln	21	7	12	40	99
38	Zuckerrüben	30	12	15	57	75
36	Colza	48	2	46	50	55
9	Triticale	35	10	12	61	42
18	Stroh Triticale	9	2	3	16	41
198	Spinat	136	40	16	256	6
462	Vollgülle Milchvieh 9%	162	162	102	395	1014
463	Vollgülle Schwein 5%	747	339	337	2490	816
397	Rinderharngülle	123	75	44	716	597
398	Rinder Stapelmist 19%	129	65	45	453	369
446	Laufstallmist 21%	118	59	41	412	199
444	Harngülle 6%	127	104	67	270	110
393	Hennenmist 60%	349	97	52	438	40
449	Rindvieh Vollgülle 9%	245	166	88	938	26
618	Schweine Mist 27%	375	375	146	5513	13
447	Schaf-/Ziegenmist 29%	118	59	41	412	13
448	Laufstallmist 27%	91	88	49	448	8
375	Hennenkot 30%	425	58	379	533	8
445	Geflügelmist 45%	516	165	237	789	6
330	N Nitrate d'ammoniaque 27.5 %	50	10	27	63	1465
364	K Sel de potasse 60 %	46	10	1	70	290
329	N Nitrate d'ammoniaque-Mg 23.0.0.5	50	10	27	63	279
352	N Urée 46.0 %	45	9	25	65	90
545	N Lonza-Sol liquide 39%	50	10	27	63	72
635	K P.R.P.	46	10	1	70	71
523	NPK Exakt 13.13.21, 1997	68	14	30	211	67
410	NPK Suplesan 1, 20.8.8.2 2 Na	68	14	30	211	60
334	N Sulfate d'ammoniaque 21.0 %	30	6	9	45	49
518	NPK Landor 13.13.21, 1997	177	35	80	280	23
541	NP Diammonphosphat 18.46.0, 1996	50	10	27	63	22
546	K Kalimagnesia 30%+6%Mg	45	9	25	65	22
517	NPK Polyvalent 6.12.30+1,5, 1997	57	12	20	90	22
543	P Super Triple 46 %	299	60	200	450	136
537	P Hyperphosphate 26%+4.4Mg, 1996	238	50	90	390	14
634	KS ARA Werdhölzli (ZH)	1064	101	878	1256	36
586	KS ARA Roche	987	235	963	1130	18
646	KS ARA Baden	1258	146	1005	1461	12
621	KS ARA Wangen/Wiedlisbach	1194	299	299	2090	9
574	KS ARA La Sarraz	936	234	234	1638	9
624	KS ARA Matzingen	783	358	44	977	3
623	KS ARA Falkenstein	449	112	112	786	3
460	KS ARA Zurzach	913	180	786	1040	2
452	KS ARA Oensingen	902	114	810	1091	2
638	KS ARA Gunzgen	1501	126	1412	1590	1

(1) Häufigkeit über alle Parzellen während des Bilanzzeitraums 1996 bis 2001

Anhang 6: Legende zu der boxplot-Darstellung



1	Median	50 % Perzentilwert
2	Konfidenzintervall	95 % Vertrauensbereich für den Median
3	Interquartilsbereich	enthält die Werte zwischen dem 25 % und 75 % Perzentil, und somit 50 % aller Werte
4	Innerer Zaun	Maximal das 1.5 fache des Interquartilsbereichs
5	Aussenpunkte	Werte ausserhalb des inneren Zauns

Anhang 7: Cadmium-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 1							
Median	0.8	0	0.7	0.3	0	-1.9	0
Std.abw.	0.3	0	0.3	0	0	1	1
Minimum	0.3	0	0.4	0.3	0	-5	-3.3
Maximum	3.1	0	3.2	0.3	0	-0.3	4
N°: 3							
Median	0.7	0	0.4	0.5	0	-1.6	0.1
Std.abw.	0.3	0	0.2	0	0	0.7	0.8
Minimum	0.3	0	0.2	0.5	0	-3.7	-2.1
Maximum	3.3	0	1.7	0.5	0	-0.5	3.1
N°: 4							
Median	0.6	0	0	2.4	0	-0.1	2.9
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	2.4	0	-0.1	2.6
Maximum	3.8	0	0	2.4	0	-0.1	6.1
N°: 5							
Median	0.7	0	0	0	0	-0.1	0.6
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	0	0	-0.1	0.2
Maximum	3	0	0	0	0	-0.1	2.9
N°: 9							
Median	1.1	0	0.1	0	0	-0.1	1.2
Std.abw.	0.3	0	0	0	0	0	0.4
Minimum	0.4	0	0	0	0	-0.2	0.4
Maximum	3	0	0.6	0	0	0	3
N°: 10							
Median	0.7	0	0.2	0	0	-0.6	0.4
Std.abw.	0.3	0	0.1	0	0	0.3	0.5
Minimum	0.3	0	0.1	0	0	-1.7	-1
Maximum	3.4	0	0.8	0	0	-0.1	2.8
N°: 11							
Median	0.7	0	0.3	0.3	0	-1.6	-0.2
Std.abw.	0.3	0	0.1	0	0	0.3	0.5
Minimum	0.3	0	0.1	0.3	0	-2.7	-1.6
Maximum	3.4	0	1.6	0.3	0	-0.9	2.1
N°: 13							
Median	0.8	0	0.7	0.8	0.4	-2	0.7
Std.abw.	0.3	0	0.2	0	0	0.3	0.5
Minimum	0.3	0	0.3	0.8	0.4	-3.2	-0.8
Maximum	2.8	0	1.5	0.8	0.4	-1.2	2.8
N°: 15							
Median	0.7	0	0.2	6.8	0	-1.3	6.5
Std.abw.	0.3	0	0.1	1.6	0	0.4	1.7
Minimum	0.3	0	0.1	3.8	0	-2.5	2.6
Maximum	3	0	0.5	10.3	0	-0.6	10.8
N°: 17							
Median	0.7	0	0.7	0	0	-1.6	-0.1
Std.abw.	0.3	0	0.2	0	0	0.4	0.7
Minimum	0.3	0	0.2	0	0	-3.3	-1.8
Maximum	3.1	0	2.2	0	0	-0.6	2.7
N°: 20							
Median	0.9	0	0	0	0	-0.1	0.8
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	0	0	-0.1	0.2
Maximum	2.9	0	0	0	0	-0.1	2.8
N°: 25							
Median	0.7	0	0.8	0	0.8	-2.6	-0.2
Std.abw.	0.3	0	0.2	0	0.1	0.8	0.9
Minimum	0.3	0	0.3	0	0.6	-5.2	-3.2
Maximum	3	0	2.3	0	1	-1	2.6
N°: 26							
Median	0.7	0	0.5	1.2	0	-1	1.5
Std.abw.	0.3	0	0.2	0	0	0.1	0.4
Minimum	0.3	0	0.1	1.2	0	-1.4	0.7
Maximum	2.9	0	1.9	1.2	0	-0.6	4
N°: 28							
Median	0.8	0	0.4	0	4.2	-1.5	3.9
Std.abw.	0.3	0	0.1	0	3.7	0.4	3.7
Minimum	0.3	0	0.1	0	0.6	-2.9	-0.5
Maximum	2.9	0	1.2	0	20.7	-0.7	21.5
N°: 29							
Median	0.7	0	0.5	0	0	-2.3	-1
Std.abw.	0.3	0	0.2	0	0	0.7	0.8
Minimum	0.3	0	0.2	0	0	-4.8	-4.1
Maximum	3	0	1.7	0	0	-0.7	1.6

Anhang 7: (Fortsetzung) Cadmium-Bilanz der NABO-Parzellen (in g/ha Jahr)

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 30							
Median	0.6	0	1.2	0	0	-1.7	0.3
Std.abw.	0.3	0	0.4	0	0	0.9	1
Minimum	0.3	0	0.5	0	0	-4.5	-3
Maximum	3.2	0	5.2	0	0	-0.2	4.1
N°: 31							
Median	0.7	0	0.3	1.3	0	-1	1.3
Std.abw.	0.3	0	0.1	0	0	0.3	0.4
Minimum	0.3	0	0.1	1.3	0	-1.9	0.4
Maximum	3.4	0	1.3	1.3	0	-0.5	3.9
N°: 33							
Median	0.7	0	1.1	0	0	-1.6	0.4
Std.abw.	0.3	0	0.3	0	0	0.8	0.9
Minimum	0.3	0	0.5	0	0	-4.2	-2.9
Maximum	3.2	0	3.1	0	0	-0.2	3.4
N°: 35							
Median	0.7	0	0.7	0	0	-0.9	0.5
Std.abw.	0.3	0	0.2	0	0	0.5	0.6
Minimum	0.3	0	0.2	0	0	-2.5	-1.4
Maximum	3.7	0	2.7	0	0	-0.1	4.3
N°: 36							
Median	0.7	0	0.7	1.1	0	-1.3	1.3
Std.abw.	0.3	0	0.2	0.3	0	0.7	0.9
Minimum	0.3	0	0.4	0.6	0	-3.6	-1.4
Maximum	3.4	0	2.6	1.7	0	-0.2	4.6
N°: 37							
Median	0.7	0	0.6	0	0	-1.2	0.2
Std.abw.	0.3	0	0.2	0	0	0.6	0.7
Minimum	0.3	0	0.3	0	0	-3.2	-2
Maximum	3	0	1.6	0	0	-0.2	3
N°: 38							
Median	0.8	0	0.5	0.5	0	-2	-0.1
Std.abw.	0.3	0	0.1	0	0	0.4	0.6
Minimum	0.3	0	0.2	0.5	0	-3.6	-1.8
Maximum	2.8	0	1.4	0.5	0	-0.9	2.2
N°: 44							
Median	0.8	0	0.5	0.7	0	-1.3	0.8
Std.abw.	0.3	0	0.2	0	0	0.4	0.6
Minimum	0.3	0	0.2	0.7	0	-2.6	-0.9
Maximum	3	0	2.8	0.7	0	-0.6	3.6
N°: 46							
Median	0.7	0	0.1	0	0.2	-2	-0.9
Std.abw.	0.3	0	0	0	0	0.5	0.6
Minimum	0.3	0	0	0	0.2	-4	-3.2
Maximum	3.4	0	0.2	0	0.3	-0.8	1.9
N°: 48							
Median	0.8	0	0.3	1.8	0	-1.9	1
Std.abw.	0.3	0	0.1	0	0	0.3	0.5
Minimum	0.3	0	0.1	1.8	0	-2.8	-0.3
Maximum	3	0	0.9	1.8	0	-1.3	3.4
N°: 49							
Median	0.6	0	0.4	0	0	-1	0.2
Std.abw.	0.3	0	0.1	0	0	0.5	0.6
Minimum	0.3	0	0.2	0	0	-2.6	-1.7
Maximum	3.3	0	1.4	0	0	-0.1	3.1
N°: 51							
Median	0.6	0	0.3	0	0	-1.2	-0.2
Std.abw.	0.3	0	0.1	0	0	0.2	0.4
Minimum	0.3	0	0.1	0	0	-1.8	-1.2
Maximum	3.4	0	0.8	0	0	-0.7	2.7
N°: 54							
Median	0.7	0	0.2	0	0	-1.9	-0.9
Std.abw.	0.3	0	0.1	0	0	0.7	0.7
Minimum	0.3	0	0.1	0	0	-3.9	-3.4
Maximum	3.6	0	0.4	0	0	-0.6	2.6
N°: 55							
Median	0.8	0	0	0.8	0	0	1.5
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	0.8	0	0	1.1
Maximum	3.1	0	0	0.8	0	0	3.8
N°: 56							
Median	0.7	0	0.7	0	0	-1	0.4
Std.abw.	0.3	0	0.2	0	0	0.5	0.7
Minimum	0.3	0	0.3	0	0	-2.8	-1.5
Maximum	3.5	0	2.7	0	0	-0.1	3.2
N°: 60							
Median	0.7	0	0.7	0	0	-1.2	0.3
Std.abw.	0.3	0	0.3	0	0	0.6	0.7
Minimum	0.3	0	0.3	0	0	-3.2	-1.8
Maximum	3.3	0	2.9	0	0	-0.2	3.5
N°: 63							
Median	0.9	0	0.1	3.9	0	-1.5	3.5
Std.abw.	0.3	0	0	0.7	0	0.5	0.9
Minimum	0.3	0	0	2.2	0	-3	1
Maximum	2.9	0	0.2	6.1	0	-0.6	8.1

Anhang 7: (Fortsetzung) Cadmium-Bilanz der NABO-Parzellen (in g/ha Jahr)

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 64							
Median	1.1	0	0.3	0.3	0	-0.9	0.9
Std.abw.	0.3	0	0.1	0	0	0.5	0.6
Minimum	0.4	0	0.1	0.3	0	-2.3	-0.7
Maximum	3	0	1	0.3	0	-0.1	3.2
N°: 65							
Median	0.9	0	0.1	5.9	0	-1.4	5.6
Std.abw.	0.3	0	0	1.3	0	0.3	1.3
Minimum	0.3	0	0	3.5	0	-2.4	2.4
Maximum	3.3	0	0.5	8.8	0	-0.8	9.7
N°: 68							
Median	0.7	0	0.2	0	0	-1	0
Std.abw.	0.3	0	0	0	0	0.3	0.5
Minimum	0.3	0	0.2	0	0	-2.1	-1.3
Maximum	3.3	0	0.3	0	0	-0.3	2.4
N°: 69							
Median	0.7	0	0.7	0	0	-1.4	0.1
Std.abw.	0.3	0	0.3	0	0	0.7	0.8
Minimum	0.3	0	0.3	0	0	-3.7	-2.7
Maximum	3	0	3.1	0	0	-0.2	3.1
N°: 74							
Median	0.8	0	0.8	0	0	-1.6	0.1
Std.abw.	0.3	0	0.2	0	0	0.8	0.9
Minimum	0.3	0	0.3	0	0	-4.2	-2.9
Maximum	2.8	0	2.4	0	0	-0.2	3.2
N°: 77							
Median	0.6	0	0.7	0	0	-1.6	-0.2
Std.abw.	0.3	0	0.2	0	0	0.3	0.5
Minimum	0.3	0	0.2	0	0	-2.6	-1.7
Maximum	3.6	0	2.8	0	0	-1.1	2.6
N°: 78							
Median	0.6	0	0.6	0.4	0	-1.4	0.3
Std.abw.	0.3	0	0.2	0	0	0.3	0.5
Minimum	0.3	0	0.2	0.4	0	-2.5	-1
Maximum	3.2	0	1.9	0.4	0	-0.7	2.9
N°: 79							
Median	0.7	0	0	0.3	0	-1	0
Std.abw.	0.3	0	0	0	0	0.1	0.3
Minimum	0.3	0	0	0.3	0	-1.3	-0.5
Maximum	3.1	0	0	0.3	0	-0.7	2.3
N°: 80							
Median	0.8	0	0.4	1.3	0	-0.8	1.7
Std.abw.	0.3	0	0.1	0.3	0	0.1	0.5
Minimum	0.3	0	0.1	0.7	0	-1.2	0.5
Maximum	3.3	0	1.1	2	0	-0.5	4.1
N°: 86							
Median	0.7	0	0.3	0	0	-1	0
Std.abw.	0.3	0	0.1	0	0	0.4	0.5
Minimum	0.3	0	0.1	0	0	-2.3	-1.6
Maximum	3	0	1.3	0	0	-0.3	2.5
N°: 87							
Median	0.7	0	0.9	0	0	-1	0.7
Std.abw.	0.3	0	0.3	0	0	0.2	0.5
Minimum	0.3	0	0.3	0	0	-1.5	-0.5
Maximum	3.2	0	4	0	0	-0.7	4.3
N°: 94							
Median	0.8	0	0	0.4	0	-0.4	0.8
Std.abw.	0.3	0	0	0	0	0.1	0.4
Minimum	0.3	0	0	0.4	0	-0.6	0.2
Maximum	3.1	0	0	0.4	0	-0.3	3
N°: 95							
Median	0.9	0	0.6	0.3	0.2	-2.5	-0.3
Std.abw.	0.3	0	0.3	0.1	0	0.9	1
Minimum	0.3	0	0.2	0.2	0.2	-5	-3
Maximum	2.8	0	2.8	0.4	0.2	-0.9	3
N°: 96							
Median	0.9	0	0	1.3	0	-0.1	2.1
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	1.3	0	-0.1	1.6
Maximum	2.9	0	0	1.3	0	-0.1	4.1
N°: 102							
Median	0.7	0	0.1	2.7	0	-1.4	2.1
Std.abw.	0.3	0	0	0.2	0	0.3	0.5
Minimum	0.3	0	0	2.1	0	-2.4	0.7
Maximum	3.2	0	0.3	3.5	0	-0.6	4.6
N°: 103							
Median	0.8	0	0.3	0.5	0.5	-2.1	0.2
Std.abw.	0.3	0	0.1	0.1	0.4	0.6	0.8
Minimum	0.3	0	0.1	0.3	0.1	-4	-2.2
Maximum	3	0	1.5	0.8	2.2	-0.9	3.6

Anhang 8: Blei-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 1							
Median	21.7	0	14.2	0.3	0	-35.8	5.1
Std.abw.	3.5	0	8.1	0.1	0	19.8	22.9
Minimum	18	0	4.7	0.2	0	-97.5	-68.9
Maximum	41.8	0	136.2	0.7	0	-2.7	99.3
N°: 3							
Median	21.9	0	7.1	1.3	0	-30.5	3
Std.abw.	3.6	0	4.8	0.2	0	13.2	14.4
Minimum	18	0	2.1	0.9	0	-70.7	-44.5
Maximum	39.8	0	39.9	2.8	0	-7.4	53.6
N°: 4							
Median	21.5	0	0	1.8	0	-1.7	21.6
Std.abw.	3.3	0	0	0	0	0	3.3
Minimum	18	0	0	1.8	0	-1.7	18.1
Maximum	40.2	0	0	1.8	0	-1.7	40.3
N°: 5							
Median	22	0	0	0.2	0	-1.8	20.4
Std.abw.	3.6	0	0	0	0	0	3.7
Minimum	18	0	0	0.2	0	-1.8	16.4
Maximum	40.7	0	0	0.3	0	-1.8	39.1
N°: 9							
Median	22.4	0	2.6	0.4	0	-1.7	24.6
Std.abw.	3.9	0	1.8	0.1	0	0.9	4.6
Minimum	18	0	0.8	0.2	0	-4.5	16.9
Maximum	41	0	27.1	1.1	0	-0.1	51.8
N°: 10							
Median	21.9	0	4.3	0	0	-11.9	15.4
Std.abw.	3.5	0	2.2	0	0	6.6	7.8
Minimum	18	0	0.8	0	0	-32.5	-7.9
Maximum	40	0	17.2	0	0	-0.9	49.6
N°: 11							
Median	21.9	0	6.8	1.4	0	-18.8	12.6
Std.abw.	3.6	0	3.6	0.2	0	3.7	6.4
Minimum	18	0	1.3	1	0	-31.4	-4.9
Maximum	40.2	0	28.1	2.5	0	-11.3	38.9
N°: 13							
Median	22.7	0	15.3	2.4	39.4	-28.8	53.6
Std.abw.	4	0	5.9	0.4	10.6	6.8	14.3
Minimum	18	0	4.4	1.5	15.6	-46.5	13.9
Maximum	40.7	0	57	4.3	62.9	-10.3	118.5
N°: 15							
Median	21.9	0	2.3	2.5	0	-8	19.5
Std.abw.	3.6	0	1.3	0.7	0	2.5	5
Minimum	18	0	1	1.1	0	-16.7	7.2
Maximum	40.2	0	13.8	4.6	0	-4.7	41.3
N°: 17							
Median	21.6	0	16.8	0.3	0	-29.8	9.9
Std.abw.	3.4	0	7.5	0.1	0	9.3	13.1
Minimum	18	0	4.6	0.1	0	-57	-26.3
Maximum	40.4	0	57.7	0.9	0	-9	57.9
N°: 20							
Median	23.7	0	0	3.5	0	-1.5	25.7
Std.abw.	4.3	0	0	0.2	0	0	4.3
Minimum	18	0	0	3.2	0	-1.5	19.8
Maximum	40.7	0	0	4.5	0	-1.5	42.5
N°: 25							
Median	21.4	0	17.4	0.8	68.5	-29	82.9
Std.abw.	3.3	0	7.7	0.3	12.3	7.3	16.6
Minimum	18	0	4.4	0.3	50.8	-53.3	43.3
Maximum	40.5	0	58.6	2.7	94.8	-10.6	144.9
N°: 26							
Median	22.3	0	11	0.6	0	-16.8	18.2
Std.abw.	3.8	0	6.3	0.1	0	3.5	8.3
Minimum	18	0	1.5	0.4	0	-27.2	-2.5
Maximum	40	0	46.5	1	0	-10.9	54
N°: 28							
Median	21.9	0	7.9	0.2	37.9	-27	44
Std.abw.	3.6	0	3.7	0.1	9.5	7.4	13.2
Minimum	18	0	2.2	0.1	25.6	-49.6	6.4
Maximum	41	0	30.2	0.8	65.4	-9.4	85.2
N°: 29							
Median	22.1	0	8.7	0.3	0	-43.5	-10.3
Std.abw.	3.7	0	4.7	0.1	0	13.8	15.6
Minimum	18	0	2.6	0.1	0	-83.4	-54.6
Maximum	41.5	0	63.2	0.8	0	-9.1	50.8

Anhang 8: (Fortsetzung) Blei-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 30							
Median	21.9	0	22.7	0.5	0	-31.8	18.3
Std.abw.	3.6	0	13.7	0	0	17.6	24.7
Minimum	18	0	6.9	0.5	0	-86.8	-47.2
Maximum	40.4	0	212.8	0.5	0	-2.4	182
N°: 31							
Median	22.1	0	6.3	4.8	0	-16.8	18
Std.abw.	3.7	0	4.3	0.5	0	5.3	8.3
Minimum	18	0	1.8	3.7	0	-32.5	-4.1
Maximum	40.9	0	67.3	7.7	0	-6.9	72.4
N°: 33							
Median	21.8	0	24.6	0.1	0	-29.7	20.3
Std.abw.	3.5	0	9.3	0	0	16.4	20.5
Minimum	18	0	9.3	0	0	-80.9	-39.2
Maximum	40.2	0	130.8	0.2	0	-2.2	104.3
N°: 35							
Median	21.6	0	14.7	0.1	0	-17.7	20.8
Std.abw.	3.4	0	6.5	0.1	0	9.8	11.7
Minimum	18	0	3.6	0.1	0	-48.2	-19.3
Maximum	40.3	0	58.7	0.5	0	-1.3	75
N°: 36							
Median	22.2	0	15.7	0.6	0	-25.6	15.7
Std.abw.	3.7	0	7.9	0.2	0	14.2	17.7
Minimum	18	0	5.8	0.3	0	-69.8	-32.3
Maximum	41.3	0	104.6	1.4	0	-1.9	86.4
N°: 37							
Median	21.7	0	13.2	0.3	0	-22.5	15.9
Std.abw.	3.5	0	7	0.1	0	12.5	14.9
Minimum	18	0	3.9	0.1	0	-61.4	-28.4
Maximum	40.7	0	57.2	0.7	0	-1.7	62.1
N°: 38							
Median	22.5	0	10.4	2.1	0	-18.6	17.6
Std.abw.	3.9	0	4.5	0.1	0	6.1	9.1
Minimum	18	0	3.4	2	0	-36.1	-8
Maximum	40	0	52.6	2.5	0	-6.6	55.7
N°: 44							
Median	22.1	0	12.2	0.9	0	-23.3	14.6
Std.abw.	3.7	0	8.4	0.2	0	8.1	13.6
Minimum	18	0	3.6	0.5	0	-47	-18.2
Maximum	40.9	0	134.6	2	0	-7.3	124.3
N°: 46							
Median	21.8	0	1	1.1	11.7	-24.7	11.9
Std.abw.	3.5	0	0.5	0.4	1.9	7.4	8.4
Minimum	18	0	0.3	0.5	8.7	-48.1	-14.6
Maximum	40	0	5	2.7	14.9	-9.5	38.5
N°: 48							
Median	22.3	0	7.7	2.5	0	-20.6	13.2
Std.abw.	3.8	0	3.6	0.2	0	5.5	7.7
Minimum	18	0	2.1	2.1	0	-36.8	-7.3
Maximum	40.5	0	34.3	3.5	0	-9.2	45.2
N°: 49							
Median	21.7	0	9.1	0	0	-18.7	13.7
Std.abw.	3.5	0	4	0	0	10.3	11.4
Minimum	18	0	2	0	0	-50.9	-22.1
Maximum	40.5	0	32	0	0	-1.4	48
N°: 51							
Median	21.7	0	2.4	2.8	0	-5.4	22.3
Std.abw.	3.5	0	1.5	0.9	0	0.7	4.2
Minimum	18	0	0.6	1.1	0	-7.5	15.3
Maximum	40.5	0	17.2	6.7	0	-3.2	44.7
N°: 54							
Median	22	0	1.4	1	0	-12.2	13.1
Std.abw.	3.6	0	0.8	0.3	0	4.1	5.5
Minimum	18	0	0.4	0.4	0	-28.4	-1.7
Maximum	40.7	0	9.9	2.1	0	-4.8	34.7
N°: 55							
Median	22.1	0	0	9	0	-0.8	30.7
Std.abw.	3.7	0	0	1.8	0	0	4.1
Minimum	18	0	0	4.4	0	-0.8	23.4
Maximum	40.6	0	0	14.2	0	-0.8	48.2
N°: 56							
Median	22	0	15	0	0	-19.9	20.3
Std.abw.	3.6	0	7.6	0	0	11	14.4
Minimum	18	0	5.3	0	0	-54.2	-18.4
Maximum	40.9	0	119.3	0	0	-1.5	104.4
N°: 60							
Median	22.5	0	14.8	0.7	0	-22.5	18.8
Std.abw.	3.9	0	9.2	0	0	12.5	17.2
Minimum	18	0	4.3	0.7	0	-61.4	-28.9
Maximum	41.1	0	139.1	0.7	0	-1.7	122.5
N°: 63							
Median	22.7	0	1.7	8.9	0	-25.4	8.6
Std.abw.	4	0	0.9	1.2	0	10.3	10.9
Minimum	18	0	0.6	5.6	0	-54.8	-26.9
Maximum	40.4	0	9.3	13.3	0	-6.2	37.6

Anhang 8: (Fortsetzung) Blei-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 64							
Median	22	0	4.7	0.3	0	-16.6	12.4
Std.abw.	3.6	0	2.9	0	0	9.2	10.2
Minimum	18	0	1.5	0.3	0	-45.2	-16.7
Maximum	39.9	0	24	0.3	0	-1.2	40.9
N°: 65							
Median	21.6	0	2.1	2.9	0	-24.8	3.2
Std.abw.	3.4	0	1.4	0.7	0	5.8	7.5
Minimum	18	0	0.6	1.4	0	-44.1	-17.7
Maximum	40.5	0	21.6	5.5	0	-11.2	28.9
N°: 68							
Median	22.2	0	1.8	1.1	0	-3.9	21.3
Std.abw.	3.8	0	0	0.3	0	2	4.1
Minimum	18	0	1.8	0.7	0	-11	11.4
Maximum	41	0	1.8	2.3	0	-1	41.3
N°: 69							
Median	22.4	0	14.7	0	0	-26.5	14.3
Std.abw.	3.8	0	9.5	0	0	14.7	18.7
Minimum	18	0	4.4	0	0	-72.2	-39
Maximum	41	0	157.2	0	0	-2	129.3
N°: 74							
Median	22.7	0	15.3	0.4	0	-30.1	10.2
Std.abw.	4	0	5.5	0	0	16.7	17.1
Minimum	18	0	5.4	0.4	0	-82.2	-50.3
Maximum	40.4	0	44	0.5	0	-2.3	61.7
N°: 77							
Median	22.5	0	14.8	0	0	-20.2	18
Std.abw.	3.9	0	6.4	0	0	6.3	10.1
Minimum	18	0	3.8	0	0	-39.2	-10
Maximum	40.8	0	50.1	0	0	-8.6	65.6
N°: 78							
Median	21.5	0	13	0.8	0	-23.7	12.8
Std.abw.	3.3	0	5.7	0	0	7.3	10
Minimum	18	0	3.4	0.7	0	-45	-12.2
Maximum	40.9	0	46.3	1.1	0	-8.3	50.3
N°: 79							
Median	22	0	0	0.8	0	-14.1	8.7
Std.abw.	3.6	0	0	0.2	0	2	4.1
Minimum	18	0	0	0.5	0	-20.1	-0.3
Maximum	41.4	0	0	1.8	0	-10.5	27.9
N°: 80							
Median	21.5	0	7.4	1	0	-14.6	16.2
Std.abw.	3.3	0	3.8	0.3	0	2.4	6
Minimum	18	0	1.5	0.5	0	-22	1.8
Maximum	41.1	0	28.6	2.5	0	-9.7	43.5
N°: 86							
Median	21.9	0	5.9	0	0	-17.5	12.5
Std.abw.	3.5	0	3.9	0	0	8.1	10.5
Minimum	18	0	1.8	0	0	-43.2	-20.4
Maximum	41.9	0	60.1	0	0	-3.7	53.9
N°: 87							
Median	21.9	0	20.2	0.1	0	-16.9	26.8
Std.abw.	3.6	0	9.1	0	0	3.1	10.8
Minimum	18	0	4.7	0.1	0	-26	5.3
Maximum	41.2	0	70.7	0.1	0	-10	77.1
N°: 94							
Median	34.6	0	0	0.6	0	-4.5	30.7
Std.abw.	4.3	0	0	0.1	0	1.2	4.5
Minimum	22.6	0	0	0.5	0	-8.3	17.5
Maximum	42	0	0	1.1	0	-2.5	40
N°: 95							
Median	37.6	0	13.3	0.7	28	-45.9	35.5
Std.abw.	3.4	0	7.3	0.2	0	17	19.1
Minimum	26.3	0	2.5	0.3	28	-91.2	-21.6
Maximum	42	0	54.2	1.8	28	-12.5	95.1
N°: 96							
Median	38.9	0	0	3	0	-1.8	40.1
Std.abw.	2.7	0	0	0.4	0	0	2.7
Minimum	26.1	0	0	1.9	0	-1.8	27.5
Maximum	42	0	0	4.3	0	-1.8	44.2
N°: 102							
Median	22.7	0	1.7	1.9	0	-9.4	17.2
Std.abw.	4	0	0.9	0.2	0	2.4	4.6
Minimum	18	0	0.2	1.6	0	-18.8	5.8
Maximum	40.7	0	7.1	3	0	-4.9	36.7
N°: 103							
Median	22.5	0	7.1	0.6	11.4	-28.3	14.7
Std.abw.	3.9	0	3.2	0.1	2	7.3	9.6
Minimum	18	0	1.7	0.4	9	-51.9	-13
Maximum	40.8	0	25.5	1.3	16.9	-12.5	43.8

Anhang 9: Kupfer-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 1							
Median	2.2	0	180.9	1.9	0	-103.4	84.4
Std.abw.	2.6	0	55.8	0.1	0	33	68.9
Minimum	0.1	0	69	1.5	0	-213.5	-98.8
Maximum	37.2	0	598.3	2.4	0	-36	507.9
N°: 3							
Median	3.9	0	43.2	5.4	0	-84	-25.5
Std.abw.	4.2	0	32.7	0.5	0	22.2	44.7
Minimum	0.1	0	2.1	4.3	0	-156.6	-139.3
Maximum	37.5	0	414.9	7.3	0	-40.2	361.8
N°: 4							
Median	6.5	0	0	4.7	0	-20.3	-9.1
Std.abw.	5.8	0	0	0	0	0	5.8
Minimum	0.3	0	0	4.7	0	-20.3	-15.3
Maximum	37.9	0	0	4.7	0	-20.3	22.3
N°: 5							
Median	4.8	2102.1	0	0.2	0	-370.1	1737.5
Std.abw.	4.8	155.8	0	0	0	0	154.3
Minimum	0.1	1890.1	0	0.2	0	-370.1	1522.8
Maximum	37.5	2309.7	0	0.3	0	-370.1	1966.1
N°: 9							
Median	3.2	0	23.4	1.3	0	-9	21.7
Std.abw.	3.6	0	11	0.3	0	1.5	13.8
Minimum	0.1	0	7.2	0.7	0	-14.1	-1.8
Maximum	37.5	0	94.2	2.9	0	-5.8	107.1
N°: 10							
Median	6.3	0	28.3	0	0	-34.5	3.1
Std.abw.	5.7	0	10	0	0	11	17.8
Minimum	0.2	0	10.3	0	0	-71.2	-52.2
Maximum	38.2	0	87.5	0	0	-12	63
N°: 11							
Median	2	0	44.1	6	0	-48.3	7.2
Std.abw.	2.4	0	17	0.5	0	6.4	20
Minimum	0.1	0	11.2	5.1	0	-73.6	-41.2
Maximum	37.5	0	139.5	8.3	0	-30.8	103.4
N°: 13							
Median	4.5	0	105.6	4.5	79.5	-56.2	142.9
Std.abw.	4.6	0	29.5	0.7	18.7	7.8	37.7
Minimum	0.1	0	44.2	2.9	42	-83.5	57.1
Maximum	37.8	0	241	7.6	125.6	-37	307.8
N°: 15							
Median	5.2	0	25.4	8.8	0	-38.7	2.4
Std.abw.	5.1	0	10.8	1.6	0	5.2	15.3
Minimum	0.1	0	5.5	5	0	-56.2	-33.1
Maximum	37.6	0	58.1	14.5	0	-30.7	55.4
N°: 17							
Median	6.9	0	143.1	0.9	0	-63.7	87.9
Std.abw.	6	0	38.4	0.3	0	13.5	40.7
Minimum	0.2	0	59.1	0.4	0	-107.5	-14.5
Maximum	37.9	0	365.5	2	0	-34.1	306.8
N°: 20							
Median	3.8	100	0	12.3	0	-18.2	100
Std.abw.	4.1	7.5	0	0.4	0	0	8.5
Minimum	0.1	90	0	11.4	0	-18.2	84.3
Maximum	37.5	110	0	14.4	0	-18.2	137.2
N°: 25							
Median	1.7	0	125.9	2.9	209.7	-63	278.2
Std.abw.	2	0	38.3	0.8	17.6	11.3	43.3
Minimum	0.1	0	43.7	1.1	168.2	-100.6	167.8
Maximum	37.2	0	276.5	6	236.5	-39	439.9
N°: 26							
Median	2.7	0	70.3	4.6	0	-42.2	38.6
Std.abw.	3.1	0	28.2	0.2	0	4.7	30
Minimum	0.1	0	17.6	4.2	0	-59	-20.8
Maximum	37.4	0	221.3	5.3	0	-29.7	184.6
N°: 28							
Median	1.8	0	49.3	0.8	108.9	-55.7	112.4
Std.abw.	2.2	0	17.5	0.2	25.2	9.5	34.7
Minimum	0.1	0	16	0.3	60.8	-89.2	16.8
Maximum	37.7	0	148.9	1.8	171.6	-33.6	265.1
N°: 29							
Median	5.9	0	173	1	0	-81.4	101.8
Std.abw.	5.5	0	58.8	0.2	0	16.8	62.9
Minimum	0.2	0	55	0.6	0	-139.9	-46.6
Maximum	37.9	0	488.5	1.6	0	-42.6	417.3

Anhang 9: (Fortsetzung) Kupfer-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 30							
Median	11.6	0	335.2	1.1	0	-92	256.2
Std.abw.	7.4	0	105	0	0	29.4	109.7
Minimum	0.5	0	105.2	1.1	0	-190	-36.8
Maximum	37.7	0	1105.7	1.1	0	-32	1033.1
N°: 31							
Median	9.4	0	55.7	10.8	0	-45.3	33.1
Std.abw.	6.9	0	27	0.8	0	8.2	28.7
Minimum	0.5	0	17.3	9.1	0	-72.9	-32.9
Maximum	37.7	0	200.4	14.3	0	-27.4	182.4
N°: 33							
Median	7.5	0	228	0.2	0	-85.8	148.3
Std.abw.	6.3	0	57.8	0.1	0	27.4	64
Minimum	0.4	0	106.2	0.1	0	-177.1	-26.9
Maximum	37.9	0	604.9	0.5	0	-29.9	532.9
N°: 35							
Median	5.3	0	95.7	0.5	0	-51	53.5
Std.abw.	5.2	0	34.3	0.1	0	16.3	38.8
Minimum	0.1	0	29.8	0.2	0	-105.4	-70.8
Maximum	37.7	0	296.2	1.2	0	-17.8	220.2
N°: 36							
Median	6	0	168.1	2.4	0	-74	103.4
Std.abw.	5.5	0	52.1	0.4	0	23.6	57.2
Minimum	0.1	0	55.2	1.5	0	-152.9	-59
Maximum	37.7	0	499.1	4	0	-25.8	423.1
N°: 37							
Median	4.9	0	88.6	0.7	0	-65.1	31.5
Std.abw.	4.9	0	41.5	0.2	0	20.8	50.1
Minimum	0.1	0	22	0.3	0	-134.4	-84.3
Maximum	37.5	0	432.2	1.5	0	-22.7	415.5
N°: 38							
Median	4.2	0	117.6	3.2	0	-65.4	62.5
Std.abw.	4.4	0	29.3	0.2	0	10.6	33.3
Minimum	0.1	0	53.2	2.9	0	-102.9	-26.5
Maximum	37.4	0	317.5	4	0	-38.7	267.1
N°: 44							
Median	2.9	0	107.8	3.5	0	-65.7	52.4
Std.abw.	3.4	0	50.7	0.5	0	13.4	53.8
Minimum	0.1	0	33.1	2.3	0	-112.2	-60.2
Maximum	37.8	0	408.7	5.8	0	-37.4	374
N°: 46							
Median	5.3	0	44	2.3	74.5	-69.6	59.6
Std.abw.	5.1	0	19.6	0.5	13	12.8	26.9
Minimum	0.1	0	12.1	1.2	48.2	-121.5	-17.2
Maximum	37.6	0	138.4	4.4	93.9	-37.9	166.2
N°: 48							
Median	5	0	57.9	10.4	0	-68.4	6.1
Std.abw.	4.9	0	18.1	0.4	0	10	21.2
Minimum	0.1	0	22.2	9.7	0	-101.5	-49.6
Maximum	37.8	0	138.4	12.1	0	-46.5	91.6
N°: 49							
Median	16.3	0	56	0	0	-54	20.1
Std.abw.	8	0	16.9	0	0	17.2	25.4
Minimum	2.1	0	18.7	0	0	-111.5	-52.1
Maximum	37.8	0	159.4	0	0	-18.8	125.6
N°: 51							
Median	7.1	0	161.2	5.7	0	-43.8	131.5
Std.abw.	6.1	0	74.4	1.2	0	5.1	74.2
Minimum	0.3	0	41.5	3.3	0	-61.2	-3.6
Maximum	38	0	530	10.9	0	-33.7	491.9
N°: 54							
Median	5.1	0	88.4	2	0	-49.3	49.8
Std.abw.	5	0	41.2	0.3	0	9.5	43
Minimum	0.1	0	24	1.2	0	-82.5	-29
Maximum	37.6	0	293.7	3.3	0	-29.4	276.1
N°: 55							
Median	2.1	2330.5	0	2.2	0	-164.4	2174.6
Std.abw.	2.5	96.1	0	0.1	0	0	95.8
Minimum	0.1	2114.6	0	2	0	-164.4	1961.3
Maximum	37.3	2534.6	0	2.7	0	-164.4	2380.7
N°: 56							
Median	6.4	0	137.3	0	0	-57.4	89.9
Std.abw.	5.7	0	46.3	0	0	18.3	50
Minimum	0.1	0	55.6	0	0	-118.6	-27.5
Maximum	37.5	0	462.5	0	0	-20	413.1
N°: 60							
Median	10.3	0	187	1.5	0	-65.1	135.1
Std.abw.	7.2	0	60.9	0	0	20.8	63.6
Minimum	0.9	0	64.1	1.5	0	-134.4	-12.7
Maximum	38	0	620.9	1.6	0	-22.7	579.3
N°: 63							
Median	3.5	0	19.4	11.2	0	-69.1	-31.8
Std.abw.	3.8	0	6.2	1.1	0	17.1	19.6
Minimum	0.1	0	5.9	8.7	0	-124.6	-97
Maximum	37.7	0	56.4	16.7	0	-30.8	26.7

Anhang 9: (Fortsetzung) Kupfer-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 64							
Median	4.3	0	58.9	2.3	0	-58.6	8.8
Std.abw.	4.5	0	26.2	0	0	15.3	34.1
Minimum	0.1	0	12.7	2.3	0	-109.6	-77.1
Maximum	37.6	0	246.1	2.3	0	-27.4	218.6
N°: 65							
Median	6.2	0	19.1	9.8	0	-42.7	-4.7
Std.abw.	5.6	0	9.3	1.6	0	5.3	13.1
Minimum	0.2	0	6.3	6.5	0	-65.4	-36.3
Maximum	37.7	0	72.4	15.2	0	-29.9	64.4
N°: 68							
Median	2.1	0	28.2	8	0	-25.2	14.3
Std.abw.	2.5	0	0	0.6	0	5	6.6
Minimum	0.1	0	28.2	6.5	0	-42.4	-7
Maximum	37.6	0	28.2	10.7	0	-13	51.5
N°: 69							
Median	2.4	0	158.6	0	0	-76.6	87.4
Std.abw.	2.9	0	59.7	0	0	24.4	66.7
Minimum	0.1	0	54.1	0	0	-158.2	-69.3
Maximum	37.2	0	569	0	0	-26.7	524.2
N°: 74							
Median	4.2	0	194.1	1	0	-87.2	117.1
Std.abw.	4.4	0	58.4	0	0	27.8	65.1
Minimum	0.1	0	75.5	0.9	0	-180	-71.1
Maximum	37.3	0	446.6	1.1	0	-30.3	365.3
N°: 77							
Median	9.3	0	106.6	0	0	-58.9	59.5
Std.abw.	6.9	0	33.5	0	0	10.3	37
Minimum	0.6	0	41.4	0	0	-92.8	-25
Maximum	37.8	0	291	0	0	-36.6	214
N°: 78							
Median	5.3	0	116.4	3.4	0	-63.3	62.2
Std.abw.	5.1	0	31	0.1	0	12.4	32.9
Minimum	0.1	0	44.5	3.2	0	-104.1	-19
Maximum	37.6	0	288.3	3.9	0	-38.2	243.1
N°: 79							
Median	2.4	0	0	2.2	0	-40.9	-35.3
Std.abw.	2.8	0	0	0.4	0	3	5
Minimum	0.1	0	0	1.5	0	-51.1	-48.7
Maximum	37.7	0	0	4	0	-33.3	1.5
N°: 80							
Median	7.7	0	81	3.7	0	-36.4	58.2
Std.abw.	6.3	0	25.9	0.7	0	3.8	26.8
Minimum	0.2	0	35.1	2.3	0	-50.7	-0.4
Maximum	37.6	0	232.5	6.4	0	-27.5	201.9
N°: 86							
Median	8	0	51.9	0	0	-52.7	10.2
Std.abw.	6.5	0	24.1	0	0	13.9	28.6
Minimum	0.4	0	16.3	0	0	-99.2	-67
Maximum	38.1	0	208.8	0	0	-24.9	179.9
N°: 87							
Median	3.4	0	125	0.2	0	-48.5	81.7
Std.abw.	3.7	0	45.5	0	0	5.5	47.2
Minimum	0.1	0	39.8	0.2	0	-65.9	-19.7
Maximum	37.7	0	345.2	0.2	0	-35.6	298.5
N°: 94							
Median	19.6	0	0	5.2	0	-49.6	-24.8
Std.abw.	8	0	0	0.2	0	2	8.4
Minimum	4.7	0	0	4.8	0	-56.4	-42.8
Maximum	38	0	0	6	0	-45.4	-3.9
N°: 95							
Median	21.4	0	86.3	2.6	22.6	-67.5	65.8
Std.abw.	7.9	0	33.8	0.5	0	11.9	38
Minimum	5.3	0	26.3	1.4	22.6	-119.1	-28.8
Maximum	37.9	0	282.4	4.7	22.6	-42	268.1
N°: 96							
Median	19.4	1809.2	0	11.6	0	-367.9	1472.4
Std.abw.	8	63.9	0	0.3	0	0	62.6
Minimum	4.2	1654.6	0	11	0	-367.9	1318.8
Maximum	38	1976.3	0	12.8	0	-367.9	1633.5
N°: 102							
Median	2.7	0	10.5	10.8	0	-42.1	-15.7
Std.abw.	3.1	0	4.2	0.4	0	5.9	9.4
Minimum	0.1	0	2.9	9.8	0	-62	-40.9
Maximum	37.5	0	32.7	12.6	0	-28.4	28.8
N°: 103							
Median	3.3	0	61.8	1.9	39	-57.3	51.5
Std.abw.	3.7	0	18.4	0.3	5.1	8.5	22.3
Minimum	0.1	0	24.1	1.2	26.7	-85.8	-6
Maximum	37.4	0	137.6	3.1	46.1	-38	145.9

Anhang 10: Zink-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 1							
Median	92.7	0	1023.8	7.6	0	-542.3	603.4
Std.abw.	20.5	0	296.3	0.6	0	159.3	330.8
Minimum	70	0	556.8	5.9	0	-1010.2	-100.8
Maximum	149.5	0	2033.3	9.2	0	-175.5	1703.4
N°: 3							
Median	92.4	0	285.7	28.8	0	-442.2	-12.4
Std.abw.	20.4	0	148.4	1.8	0	105.5	186.5
Minimum	70	0	95.2	24.7	0	-754.4	-408.3
Maximum	149.8	0	1336.2	35	0	-191.3	1068
N°: 4							
Median	100.4	0	0	61	0	-188.8	-27.4
Std.abw.	22.9	0	0	0	0	0	22.9
Minimum	70	0	0	61	0	-188.8	-57.8
Maximum	149.9	0	0	61	0	-188.8	22.1
N°: 5							
Median	93	105.7	0	2	0	-58.4	142.4
Std.abw.	20.7	7.5	0	0.1	0	0	20.8
Minimum	70	94.9	0	1.7	0	-58.4	109.4
Maximum	149.6	116	0	2.3	0	-58.4	206.9
N°: 9							
Median	99.3	0	116.3	9.1	0	-31.7	199.3
Std.abw.	22.7	0	50.8	1.3	0	7.4	57.4
Minimum	70	0	57.4	5.9	0	-53.4	102.2
Maximum	149.8	0	262.9	12.4	0	-14.7	371.9
N°: 10							
Median	97.8	0	140.9	0	0	-180.8	64.7
Std.abw.	22.3	0	55.4	0	0	53.1	82.9
Minimum	70	0	56	0	0	-336.7	-181.5
Maximum	149.8	0	447.2	0	0	-58.5	507.8
N°: 11							
Median	91.4	0	218.2	33.9	0	-283.7	71.1
Std.abw.	19.9	0	89.3	2	0	36.1	103.1
Minimum	70	0	80.8	28.1	0	-404.2	-161.6
Maximum	150	0	670.2	38.9	0	-174	540.9
N°: 13							
Median	102.7	0	539.4	36.4	249.9	-332.3	607.1
Std.abw.	23.2	0	141.1	2.9	60.2	40.2	163.4
Minimum	70	0	249.2	28.8	109.5	-463.3	222.6
Maximum	149.8	0	1138	43.3	436.8	-211.3	1278
N°: 15							
Median	91.6	17.2	197	64.9	0	-262.2	111.1
Std.abw.	20	0.7	45.3	8.2	0	28.6	55.6
Minimum	70	15.4	86.2	47.9	0	-333.9	-28.9
Maximum	149.7	18.7	289.5	89	0	-215.3	270.5
N°: 17							
Median	95.6	0	753.5	6.4	0	-354.1	499.6
Std.abw.	21.7	0	205.3	1.1	0	65.9	213.5
Minimum	70	0	357.6	3.4	0	-569.5	46.8
Maximum	149.7	0	1682.6	9.1	0	-177.5	1447.6
N°: 20							
Median	97.8	0	0	141.8	0	-169.3	70.3
Std.abw.	22.4	0	0	1.9	0	0	22.1
Minimum	70	0	0	137.1	0	-169.3	40.5
Maximum	149.9	0	0	146.1	0	-169.3	124
N°: 25							
Median	92.8	0	616.8	19.3	477.5	-377	839
Std.abw.	20.6	0	185.9	3.5	42.1	61.1	192.5
Minimum	70	0	269.2	10	394.9	-575.1	412.8
Maximum	149.6	0	1569.7	27.5	564.4	-204.4	1849.6
N°: 26							
Median	93.3	0	348.6	22	0	-186.4	284
Std.abw.	20.8	0	159.1	0.7	0	24.5	159.7
Minimum	70	0	116	19.8	0	-259.5	9.5
Maximum	149.5	0	1193.8	24.1	0	-119.9	1125
N°: 28							
Median	97	0	251.9	5.7	371.1	-331.1	405.5
Std.abw.	22.1	0	94	1	37	47.6	115.2
Minimum	70	0	89	3	299.6	-496.7	129.3
Maximum	149.8	0	741.6	7.9	435.3	-198	902.2
N°: 29							
Median	101.7	0	1035.9	7.5	0	-468.4	674.8
Std.abw.	23.1	0	310.8	0.8	0	81.2	327.6
Minimum	70	0	496.6	5	0	-741.2	56.9
Maximum	149.9	0	2620.8	9.9	0	-213	2322.3

Anhang 10: (Fortsetzung) Zink-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 30							
Median	98.1	0	1880.9	13.1	0	-482.7	1538.3
Std.abw.	22.4	0	554.6	0	0	141.8	578.8
Minimum	70	0	965.6	13.1	0	-899.2	427.8
Maximum	149.6	0	4069.6	13.1	0	-156.2	3668.4
N°: 31							
Median	102.1	0	278.1	68.6	0	-259.6	199.7
Std.abw.	23.1	0	121.9	3.5	0	39.8	135.4
Minimum	70	0	139.6	58.7	0	-395.1	-62.9
Maximum	149.6	0	640.2	81.4	0	-157.2	616.7
N°: 33							
Median	96.6	0	1201.3	1.4	0	-449.9	875.4
Std.abw.	22	0	282.9	0.3	0	132.1	326.6
Minimum	70	0	699.3	0.8	0	-838.1	130.2
Maximum	149.5	0	2343.6	2.1	0	-145.6	2117
N°: 35							
Median	92.2	0	518.1	3.6	0	-267.8	367.7
Std.abw.	20.3	0	173.9	0.6	0	78.7	191
Minimum	70	0	192.8	2	0	-498.9	-64.5
Maximum	149.8	0	1286.6	5.1	0	-86.7	1203.2
N°: 36							
Median	99.9	0	924.8	16.4	0	-388.3	661.3
Std.abw.	22.8	0	250.1	2	0	114.1	280.9
Minimum	70	0	486.2	11	0	-723.4	58.4
Maximum	149.7	0	1744.1	22.4	0	-125.7	1525.6
N°: 37							
Median	92.4	0	514.1	5.6	0	-341.4	279.4
Std.abw.	20.3	0	174.1	0.8	0	100.3	195.2
Minimum	70	0	210.1	3.7	0	-636.1	-231.8
Maximum	149.5	0	1491.9	7.4	0	-110.5	1398.9
N°: 38							
Median	98.5	0	651.7	10.5	0	-320.6	445
Std.abw.	22.5	0	166.1	0.8	0	50.9	180.5
Minimum	70	0	339.3	8.7	0	-497.2	65.3
Maximum	149.8	0	1374.3	12.2	0	-180.4	1135.3
N°: 44							
Median	99.4	0	545.8	27.7	0	-359.4	321.7
Std.abw.	22.7	0	237.8	1.8	0	64.7	250.8
Minimum	70	0	271.2	22.6	0	-562.3	-93.1
Maximum	149.8	0	1219.6	34.4	0	-189.8	1068.6
N°: 46							
Median	92.7	0	283.1	17.1	167.1	-386.7	179.1
Std.abw.	20.5	0	108.2	2.3	9.7	63.9	130.9
Minimum	70	0	119.6	10.4	154.7	-621.4	-118.3
Maximum	149.6	0	840.7	23.8	181.5	-202.4	764.7
N°: 48							
Median	97.2	3.4	293.7	49.1	0	-352.6	98.2
Std.abw.	22.2	0.3	84.8	1.7	0	44.3	98.2
Minimum	70	3.1	133.9	44.3	0	-489.7	-161.7
Maximum	149.7	3.8	674.6	53.7	0	-233.4	522.8
N°: 49							
Median	103.7	0	283.7	0	0	-283.2	111.4
Std.abw.	23.3	0	101.1	0	0	83.2	132.6
Minimum	70	0	111.3	0	0	-527.6	-277.8
Maximum	149.7	0	783.8	0	0	-91.7	732.5
N°: 51							
Median	92.2	59.3	1055.6	41.7	0	-305.1	952.3
Std.abw.	20.3	2.8	430.7	5.5	0	36	437.2
Minimum	70	53.5	445.1	25.9	0	-410.7	300.6
Maximum	149.4	64.9	3445.7	55.5	0	-203.6	3304.8
N°: 54							
Median	96.3	48.7	581.4	15.2	0	-268.5	473.1
Std.abw.	21.9	3.6	234.4	1.6	0	46.3	244
Minimum	70	43.8	234.8	10.6	0	-393.2	96.3
Maximum	149.6	53.5	2005.2	21	0	-172.7	1811.7
N°: 55							
Median	92.9	0	0	17.5	0	-25.9	84.4
Std.abw.	20.6	0	0	0.5	0	0	20.8
Minimum	70	0	0	16.3	0	-25.9	61.2
Maximum	149.8	0	0	18.7	0	-25.9	141.7
N°: 56							
Median	102.3	0	714	0	0	-301.3	531.5
Std.abw.	23.2	0	215.6	0	0	88.5	243.9
Minimum	70	0	393.6	0	0	-561.2	32.7
Maximum	150	0	1400.7	0	0	-97.5	1248.2
N°: 60							
Median	102.7	0	1035.4	17.8	0	-341.4	832.9
Std.abw.	23.2	0	317.3	0	0	100.3	337.2
Minimum	70	0	506	17.7	0	-636.1	110.4
Maximum	149.9	0	2101.1	17.8	0	-110.5	1905.4
N°: 63							
Median	100.9	0	112.3	66.1	0	-376.6	-94.3
Std.abw.	23	0	29.1	5.1	0	80.3	87.5
Minimum	70	0	53.4	53.6	0	-632.8	-321.2
Maximum	149.9	0	249.5	79.5	0	-175.5	149.1

Anhang 10: (Fortsetzung) Zink-Bilanz der NABO-Parzellen (in g/ha Jahr).

Standort	Deposition	Pestizide	Hof-dünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
N°: 64							
Median	97.3	0	370.8	9	0	-260.6	224.6
Std.abw.	22.2	0	123.1	0	0	73.7	150.6
Minimum	70	0	158.2	9	0	-477.2	-109.6
Maximum	149.8	0	1234.3	9	0	-90.8	1065.5
N°: 65							
Median	94.3	0	95.2	68.3	0	-254	12.5
Std.abw.	21.2	0	41.7	7.3	0	32.4	57.9
Minimum	70	0	48.5	50.3	0	-362.2	-136.8
Maximum	149.6	0	218	90.8	0	-173.3	190.3
N°: 68							
Median	92.1	0	346.9	23.4	0	-221	249.5
Std.abw.	20.2	0	39.2	2.5	0	33.2	55.8
Minimum	70	0	278.3	16.7	0	-315.4	108.5
Maximum	149.4	0	465.4	29.4	0	-122.5	433.1
N°: 69							
Median	92.1	0	853.3	0.1	0	-401.7	557.9
Std.abw.	20.2	0	286.4	0	0	118	320.4
Minimum	70	0	424.9	0.1	0	-748.3	-69.6
Maximum	149.7	0	1825.2	0.1	0	-130	1516.5
N°: 74							
Median	95.6	0	1149.4	10.9	0	-457.2	807.9
Std.abw.	21.6	0	328.4	0.1	0	134.3	353.5
Minimum	70	0	571.9	10.5	0	-851.8	28.3
Maximum	149.7	0	2843.6	11.1	0	-148	2586
N°: 77							
Median	104.9	0	575.8	0	0	-315.5	370.7
Std.abw.	23.3	0	178.7	0	0	50	191.8
Minimum	70	0	255.7	0	0	-471.6	-65.9
Maximum	149.9	0	1291.4	0	0	-199.4	1107.7
N°: 78							
Median	92.4	8.4	618.9	22.2	0	-315.9	429
Std.abw.	20.3	0.6	164.6	1.1	0	56.6	179.8
Minimum	70	7.5	306.8	19.4	0	-492.4	63.6
Maximum	149.4	9.2	1447	25.5	0	-159.8	1319.9
N°: 79							
Median	91.5	0	0	17.3	0	-239.3	-128.5
Std.abw.	20	0	0	1.7	0	15.1	24.2
Minimum	70	0	0	13.3	0	-290.4	-198.1
Maximum	149.7	0	0	21	0	-195	-50.9
N°: 80							
Median	92.8	0	451.7	26.3	0	-205.6	370
Std.abw.	20.6	0	145.4	3	0	18.4	147.5
Minimum	70	0	180.8	18.3	0	-269.9	94.7
Maximum	149.5	0	1270.8	34.7	0	-150.4	1184.6
N°: 86							
Median	101.5	0	263	0	0	-275.1	99.8
Std.abw.	23	0	109.3	0	0	66.4	130.1
Minimum	70	0	133.7	0	0	-472.2	-221.1
Maximum	149.9	0	570.7	0	0	-122.5	497
N°: 87							
Median	93.4	0	635.3	3	0	-241.6	485.3
Std.abw.	20.8	0	233.4	0.6	0	24.2	233.9
Minimum	70	0	234.9	1.6	0	-315.9	68.7
Maximum	149.5	0	1796.7	4.7	0	-171.2	1619.1
N°: 94							
Median	123.4	16	0	11.3	0	-287	-136.7
Std.abw.	19.4	1.2	0	0.8	0	9.8	21.8
Minimum	70	14.4	0	9.2	0	-315.9	-201.8
Maximum	149.9	17.6	0	13.1	0	-264.4	-93.1
N°: 95							
Median	123.5	0	428.3	19.4	125	-427.8	280.2
Std.abw.	19.4	0	184.5	2.1	0	82.4	207.2
Minimum	70	0	148	13.7	125	-669.9	-155.3
Maximum	149.9	0	1459.3	25.4	125	-225.5	1193.4
N°: 96							
Median	127.6	0	0	33.3	0	-58	102.7
Std.abw.	17.5	0	0	1.2	0	0	17.4
Minimum	74	0	0	30.2	0	-58	49.6
Maximum	150	0	0	36	0	-58	126.9
N°: 102							
Median	92.8	45.6	51.5	72.1	0	-233.6	36.7
Std.abw.	20.6	2.1	22.9	2	0	30.9	43.8
Minimum	70	41.4	16.1	66.9	0	-320	-78
Maximum	149.8	49.7	181.6	76.6	0	-147.4	232
N°: 103							
Median	99.7	0	343.3	14	96	-338.6	220
Std.abw.	22.7	0	104.3	1.3	30.3	45.9	118.6
Minimum	70	0	161.2	10.5	29.1	-498.3	-79.6
Maximum	149.7	0	716.2	17.6	142	-200.6	631.6

Anhang 11: Cadmium-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
1 SG							
Median	0.7	0	0.2	0.6	0	-0.7	0.9
Std.abw.	0.3	0	0.1	0	0	0	0.3
Minimum	0.3	0	0.1	0.6	0	-0.7	0.4
Maximum	3	0	0.7	0.6	0	-0.7	3.1
2 WG							
Median	0.7	0	0.2	1.3	0.1	-0.9	1.4
Std.abw.	0.3	0	0	0.2	0	0.1	0.4
Minimum	0.3	0	0.1	0.9	0.1	-1.2	0.5
Maximum	3	0	0.4	1.7	0.1	-0.5	3.5
3 HA							
Median	0.7	0	0.3	3.2	0.3	-1.5	3.1
Std.abw.	0.3	0	0.1	0.8	0	0	0.8
Minimum	0.3	0	0.1	1.8	0.3	-1.5	1.4
Maximum	3	0	0.7	4.9	0.3	-1.5	5.5
4 WT							
Median	0.7	0	0.1	0.7	0.1	-1.3	0.3
Std.abw.	0.3	0	0	0.1	0	0.2	0.4
Minimum	0.3	0	0.1	0.5	0.1	-2.2	-0.9
Maximum	3	0	0.3	0.8	0.1	-0.4	2.7
5 SW							
Median	0.7	0	0.1	1.4	0	-1.1	1.2
Std.abw.	0.3	0	0	0.2	0	0	0.4
Minimum	0.3	0	0.1	1	0	-1.1	0.4
Maximum	3	0	0.3	1.9	0	-1.1	3.3
6 WW							
Median	0.7	0	0.1	1.3	0.1	-1.2	1
Std.abw.	0.3	0	0	0.2	0	0.2	0.4
Minimum	0.3	0	0.1	0.9	0.1	-2	-0.2
Maximum	3	0	0.2	1.7	0.1	-0.7	3.2
7 RD							
Median	0.7	0	0.1	1.2	0	-0.5	1.5
Std.abw.	0.3	0	0	0.2	0	0	0.4
Minimum	0.3	0	0	0.8	0	-0.5	0.8
Maximum	3	0	0.3	1.7	0	-0.5	3.7
8 KM							
Median	0.7	0	0.6	1.2	0	-0.2	2.4
Std.abw.	0.3	0	0.1	0.2	0	0	0.4
Minimum	0.3	0	0.3	1	0	-0.2	1.6
Maximum	3	0	1.2	1.6	0	-0.2	4.5
9 SM							
Median	0.7	0	0.8	1.1	1.7	-3.3	1.4
Std.abw.	0.3	0	0.2	0.2	1.2	1.7	2.2
Minimum	0.3	0	0.3	0.8	0.5	-7.8	-4.6
Maximum	3	0	1.9	1.5	7	-0.6	8.7
10 ZR							
Median	0.7	0	0.4	2.1	0.2	-3.6	0
Std.abw.	0.3	0	0.1	0.4	0	1.9	2
Minimum	0.3	0	0.2	1.3	0.2	-9.8	-6.5
Maximum	3	0	0.9	3	0.5	-0.6	4.8
11 FR							
Median	0.7	0	0.4	2.7	0.1	-4	0
Std.abw.	0.3	0	0.1	0.4	0	0	0.5
Minimum	0.3	0	0.1	2	0.1	-4	-1.2
Maximum	3	0	1.2	3.7	0.1	-4	2.1
12 KA							
Median	0.7	0	0.5	1.4	0	-2	0.8
Std.abw.	0.3	0	0.1	0.2	0	0.7	0.8
Minimum	0.3	0	0.2	1.1	0	-3.7	-1.2
Maximum	3	0	1.3	1.9	0	0	3.6
13 FK							
Median	0.7	0	0.5	0.7	0	-1.3	0.7
Std.abw.	0.3	0	0.2	0	0	0	0.4
Minimum	0.3	0	0.1	0.7	0	-1.3	0
Maximum	3	0	1.8	0.7	0	-1.3	3
14 RA							
Median	0.7	0	0.4	2.6	0.1	-0.8	3.2
Std.abw.	0.3	0	0.1	0.3	0	0.1	0.4
Minimum	0.3	0	0.2	2.2	0.1	-0.9	2.2
Maximum	3	0	1.1	3.2	0.2	-0.7	5.2

Anhang 11: (Fortsetzung) Cadmium-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
15 SO							
Median	0.7	0	0	4	0	-0.1	4.7
Std.abw.	0.3	0	0	0.9	0	0	0.9
Minimum	0.3	0	0	2.3	0	-0.1	2.7
Maximum	3	0	0	6	0	-0.1	7.4
16 EE							
Median	0.7	0	0.1	5.2	0	-0.4	5.7
Std.abw.	0.3	0	0	1.3	0	0	1.3
Minimum	0.3	0	0	2.9	0	-0.4	3.1
Maximum	3	0	0.2	7.9	0	-0.4	9.1
17 SB							
Median	0.7	0	0.7	1.3	0	-0.2	2.6
Std.abw.	0.3	0	0.1	0.3	0	0	0.5
Minimum	0.3	0	0.4	0.8	0	-0.2	1.5
Maximum	3	0	1.6	2	0	-0.2	4.7
18 Wie							
Median	0.7	0	0	0	0	-0.3	0.5
Std.abw.	0.3	0	0	0	0	0.1	0.4
Minimum	0.3	0	0	0	0	-0.8	-0.3
Maximum	3	0	0	0	0	0	2.8
19 Wim							
Median	0.7	0	0.4	0.2	0.1	-1.1	0.3
Std.abw.	0.3	0	0.1	0	0	0.6	0.7
Minimum	0.3	0	0.2	0.1	0.1	-3.1	-1.7
Maximum	3	0	0.8	0.3	0.1	-0.2	2.9
20 Wil							
Median	0.7	0	0.7	0.2	0	-1.6	0.1
Std.abw.	0.3	0	0.2	0	0	0.8	1
Minimum	0.3	0	0.4	0.2	0	-4.5	-2.7
Maximum	3	0	1.8	0.3	0	-0.2	3.1
21 Wee							
Median	0.7	0	0	0	0	-0.3	0.5
Std.abw.	0.3	0	0	0	0	0.1	0.4
Minimum	0.3	0	0	0	0	-0.8	-0.2
Maximum	3	0	0.1	0	0	0	2.9
22 Wem							
Median	0.7	0	0.4	0.3	0	-1	0.6
Std.abw.	0.3	0	0.1	0	0	0.5	0.6
Minimum	0.3	0	0.2	0.2	0	-2.7	-1.3
Maximum	3	0	1	0.4	0.1	-0.1	3.2
23 Wei							
Median	0.7	0	0.6	0.1	0	-1.3	0.3
Std.abw.	0.3	0	0.1	0	0	0.7	0.8
Minimum	0.3	0	0.3	0.1	0	-3.6	-2.1
Maximum	3	0	1.5	0.1	0	-0.2	2.9
24 BE							
Median	0.7	0	0.4	1.2	0	-0.1	2.4
Std.abw.	0.3	0	0.1	0.2	0	0	0.4
Minimum	0.3	0	0.2	0.7	0	-0.1	1.4
Maximum	3	0	1.4	1.7	0	-0.1	4.5
25 DG							
Median	0.7	0	0.1	0.3	0	-0.6	0.6
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	0.2	0	-0.7	0.1
Maximum	3	0	0.3	0.4	0	-0.6	2.8
26 RE							
Median	0.7	0	0	0.7	0	-0.1	1.4
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	0.7	0	-0.1	0.9
Maximum	3	0	0	0.7	0	-0.1	3.6
29 AP							
Median	0.7	0	0	1.2	0	-0.1	1.8
Std.abw.	0.3	0	0	0	0	0	0.3
Minimum	0.3	0	0	1.2	0	-0.1	1.4
Maximum	3	0	0	1.2	0	-0.1	4.1
28 KI							
Median	0.7	0	0.3	0.3	0	-0.9	0.5
Std.abw.	0.3	0	0.1	0	0	0.5	0.6
Minimum	0.3	0	0.1	0.3	0	-2.4	-1.2
Maximum	3	0	1	0.3	0	-0.1	3

Anhang 12: Blei-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
1 SG							
Median	22.5	0	5.5	1.5	0	-12.1	18
Std.abw.	3.9	0	2.3	0.2	0	0	4.4
Minimum	18	0	1.9	1.2	0	-12.1	10
Maximum	40.3	0	17.8	2.5	0	-12.1	37.5
2 WG							
Median	22.5	0	3.5	1.5	8.7	-17.4	19.2
Std.abw.	3.9	0	1.2	0.2	1.3	4.5	6.2
Minimum	18	0	1.2	1	6.2	-32.1	-0.8
Maximum	40.3	0	13.8	2.6	11.9	-11	43.6
3 HA							
Median	22.5	0	4.4	1.5	29.6	-19.7	39.6
Std.abw.	3.9	0	1.8	0.4	8	0	9.3
Minimum	18	0	1.6	0.7	9.2	-19.7	14.8
Maximum	40.3	0	16.6	2.7	47.2	-19.7	65.5
4 WT							
Median	22.5	0	3.1	1.7	3.7	-22.2	9.4
Std.abw.	3.9	0	1.2	0.4	0.6	6.1	7
Minimum	18	0	1	1.1	2.7	-42.3	-14.6
Maximum	40.3	0	10.5	4	4.7	-14.1	31.2
5 SW							
Median	22.5	0	2.3	1.5	0	-16.3	10.3
Std.abw.	3.9	0	0.9	0.3	0	0	3.8
Minimum	18	0	0.7	1	0	-16.3	4.3
Maximum	40.3	0	7.1	2.9	0	-16.3	28.3
6 WW							
Median	22.5	0	2	1.7	8.3	-20.4	14.7
Std.abw.	3.9	0	0.7	0.3	1.1	5.5	6.3
Minimum	18	0	0.8	1.1	6.2	-38.9	-6.1
Maximum	40.3	0	9.9	3	11.1	-13	37.1
7 RD							
Median	22.5	0	2	0.9	0	-9.3	16.8
Std.abw.	3.9	0	1	0.1	0	0	4.2
Minimum	18	0	0.7	0.6	0	-9.3	10.5
Maximum	40.3	0	16.7	1.5	0	-9.3	35.6
8 KM							
Median	22.5	0	10.8	1.6	0	-1.9	33.8
Std.abw.	3.9	0	3.2	0.2	0	0	5.1
Minimum	18	0	4.3	1.1	0	-1.9	23.7
Maximum	40.3	0	27.5	2.4	0	-1.9	56.6
9 SM							
Median	22.5	0	16.7	1	39.6	-62.8	19.1
Std.abw.	3.9	0	6.1	0.2	3.6	32.8	34
Minimum	18	0	5.7	0.7	31.5	-146.9	-73.7
Maximum	40.3	0	42.6	1.8	51.5	-7.9	93.7
10 ZR							
Median	22.5	0	8	2.1	18.9	-17.4	35
Std.abw.	3.9	0	2.3	0.4	2.5	11.8	12.7
Minimum	18	0	3.6	1.2	13.7	-58.5	-10.7
Maximum	40.3	0	20.2	3.3	25.6	-1.4	65.6
11 FR							
Median	22.5	0	7.8	2.5	8.9	-15.8	26.9
Std.abw.	3.9	0	3.1	0.2	2.4	0	5.6
Minimum	18	0	2	2	2.8	-15.8	13.5
Maximum	40.3	0	22.9	3.2	14.2	-15.8	49
12 KA							
Median	22.5	0	10.1	2.5	2.2	-5.9	32.5
Std.abw.	3.9	0	3.2	0.3	0.6	2.1	5.5
Minimum	18	0	4.1	1.7	0.7	-9.4	20.4
Maximum	40.3	0	23.6	3.7	3.5	-2	55
13 FK							
Median	22.5	0	10.2	2.8	0	-3.8	32.7
Std.abw.	3.9	0	5.8	0.2	0	0	7.3
Minimum	18	0	1.4	2.5	0	-3.8	20.6
Maximum	40.3	0	39.9	3.6	0	-3.8	71
14 RA							
Median	22.5	0	9.5	5	10.6	-2.3	46.2
Std.abw.	3.9	0	3.4	0.6	1.3	0	5.4
Minimum	18	0	3.2	3.4	7.2	-2.3	34.7
Maximum	40.3	0	22.9	7.4	14.2	-2.3	69.8

Anhang 12: (Fortsetzung) Blei-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
15 SO							
Median	22.5	0	0	1.2	0	-1.8	21.8
Std.abw.	3.9	0	0	0.2	0	0	3.9
Minimum	18	0	0	0.7	0	-1.8	17.2
Maximum	40.3	0	0	1.8	0	-1.8	39.7
16 EE							
Median	22.5	0	0.8	1.1	0	-0.7	24
Std.abw.	3.9	0	0.4	0.3	0	0	3.9
Minimum	18	0	0.4	0.4	0	-0.7	19
Maximum	40.3	0	3.2	2.1	0	-0.7	42.5
17 SB							
Median	22.5	0	9.5	1.1	0	-0.2	33.8
Std.abw.	3.9	0	4	0.3	0	0	5.9
Minimum	18	0	3.5	0.6	0	-0.2	23.9
Maximum	40.3	0	31.2	1.9	0	-0.2	63.7
18 Wie							
Median	22.5	0	0.1	0	0	-5.3	17.5
Std.abw.	3.9	0	0.1	0	0	2.9	4.7
Minimum	18	0	0	0	0	-15.1	4.1
Maximum	40.3	0	1.2	0	0	-0.4	35.7
19 Wim							
Median	22.5	0	7.9	0.2	5.6	-21.3	16.3
Std.abw.	3.9	0	2.6	0	1	11.6	12.7
Minimum	18	0	3.4	0.1	4.2	-60.1	-27.7
Maximum	40.3	0	28.6	0.3	7.8	-1.9	49.2
20 Wii							
Median	22.5	0	14	0.6	0.5	-30.6	10.2
Std.abw.	3.9	0	5.5	0.1	0.1	16.9	18.8
Minimum	18	0	5.8	0.4	0.4	-86.9	-52.2
Maximum	40.3	0	80.2	0.9	0.7	-2.3	71.3
21 Wee							
Median	22.5	0	0.6	0	0	-5.3	18.1
Std.abw.	3.9	0	0.3	0	0	2.9	4.7
Minimum	18	0	0.1	0	0	-15.1	4.5
Maximum	40.3	0	2.7	0	0	-0.4	36.6
22 Wem							
Median	22.5	0	8.6	0.4	4	-18.2	19.5
Std.abw.	3.9	0	3.3	0.1	0.7	10.1	11.4
Minimum	18	0	3.7	0.3	3	-51.9	-20.5
Maximum	40.3	0	50.7	0.8	5.6	-1.4	51.8
23 Wei							
Median	22.5	0	14	0.8	1.9	-24.7	16.6
Std.abw.	3.9	0	4.9	0.1	0.3	13.7	15.3
Minimum	18	0	5.4	0.7	1.4	-70.3	-35.6
Maximum	40.3	0	52.3	1.2	2.6	-1.9	59
24 BE							
Median	22.5	0	10	0.5	0	-0.6	33.4
Std.abw.	3.9	0	4.4	0.1	0	0	6.1
Minimum	18	0	3.6	0.4	0	-0.6	22
Maximum	40.3	0	64.8	0.8	0	-0.6	84.3
25 DG							
Median	22.5	0	1.2	1	0	-2.2	22.8
Std.abw.	3.9	0	0.7	0.2	0	0.1	3.9
Minimum	18	0	0.3	0.5	0	-2.4	17.3
Maximum	40.3	0	6.1	1.7	0	-2	39.8
26 RE							
Median	22.5	0	0	3.5	0	-1.6	24.5
Std.abw.	3.9	0	0	0.5	0	0	3.8
Minimum	18	0	0	2.1	0	-1.6	19.4
Maximum	40.3	0	0	5	0	-1.6	42.8
29 AP							
Median	22.5	0	0	2.4	0	-1.5	23.4
Std.abw.	3.9	0	0	0.1	0	0	3.9
Minimum	18	0	0	2.3	0	-1.5	18.8
Maximum	40.3	0	0	2.8	0	-1.5	41.3
28 KI							
Median	22.5	0	4.7	0.3	0	-16.6	12.8
Std.abw.	3.9	0	2.8	0	0	9.2	10.6
Minimum	18	0	1.4	0.3	0	-47.2	-22.4
Maximum	40.3	0	25.3	0.3	0	-1.2	39.5

Anhang 13: Kupfer-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
1 SG							
Median	6.1	0	48.1	68.4	0	-31.9	92.4
Std.abw.	5.6	0	12.1	0.4	0	0	14
Minimum	0.2	0	21.2	67.4	0	-31.9	63.2
Maximum	38	0	93.6	69.7	0	-31.9	152.5
2 WG							
Median	6.1	0	49.4	9.3	24.9	-40.8	51.1
Std.abw.	5.6	0	14.3	0.5	2	7.6	18.3
Minimum	0.2	0	22.2	7.7	20.3	-71.3	1.1
Maximum	38	0	113.4	11	29.1	-20.7	117.8
3 HA							
Median	6.1	0	36.3	5.1	59.6	-56.7	54.8
Std.abw.	5.6	0	11.9	0.9	14	0	20.7
Minimum	0.2	0	11.5	3.1	31.5	-56.7	6.9
Maximum	38	0	70.5	7.8	94.1	-56.7	122.3
4 WT							
Median	6.1	0	27.9	5.9	23.5	-46.4	19.1
Std.abw.	5.6	0	6.9	0.7	4.1	9.2	13.3
Minimum	0.2	0	12.5	3.8	15.2	-80	-32.4
Maximum	38	0	58.8	9.1	29.6	-24.9	67.3
5 SW							
Median	6.1	0	25.5	5.8	0	-38.5	0.8
Std.abw.	5.6	0	7.1	0.6	0	0	10
Minimum	0.2	0	10.1	4.1	0	-38.5	-17
Maximum	38	0	54.8	8.8	0	-38.5	45.1
6 WW							
Median	6.1	0	26	6	33.4	-44.1	30.2
Std.abw.	5.6	0	6.6	0.6	2.9	8.1	13.2
Minimum	0.2	0	12.3	4.2	25.3	-78.1	-7.3
Maximum	38	0	55.1	8.4	39.5	-20.5	76.6
7 RD							
Median	6.1	0	26.1	3.6	0	-23.7	14.5
Std.abw.	5.6	0	8.6	0.4	0	0	11.9
Minimum	0.2	0	8.9	2.5	0	-23.7	-8.2
Maximum	38	0	65.1	4.9	0	-23.7	57.4
8 KM							
Median	6.1	0	151.3	4.1	0	-17.3	147
Std.abw.	5.6	0	42.6	0.3	0	0	44.4
Minimum	0.2	0	66.8	3.2	0	-17.3	57.6
Maximum	38	0	364.4	5.1	0	-17.3	364.1
9 SM							
Median	6.1	0	126.9	8.1	110.2	-66.4	187.2
Std.abw.	5.6	0	29.2	0.4	8.5	22.2	38
Minimum	0.2	0	60.9	7.1	88	-168.8	68.7
Maximum	38	0	240.6	9.4	134.9	-31.4	326.8
10 ZR							
Median	6.1	0	100.2	6.4	57.2	-68.1	105
Std.abw.	5.6	0	24.6	0.5	3.8	24.6	35.7
Minimum	0.2	0	57.2	4.9	47.2	-153.6	-11.6
Maximum	38	0	239.9	8.2	66.2	-30.3	273.4
11 FR							
Median	6.1	0	47.8	7.2	17.9	-80.1	2.4
Std.abw.	5.6	0	13.7	0.5	4.2	0	17.1
Minimum	0.2	0	21.4	5.9	9.5	-80.1	-36.4
Maximum	38	0	116.9	9	28.3	-80.1	71.1
12 KA							
Median	6.1	530.4	108.2	11	4.4	-53.8	608.9
Std.abw.	5.6	15	25.5	0.4	1	19.7	38.1
Minimum	0.2	491.8	51.7	9.9	2.3	-108.4	510.3
Maximum	38	568.1	218.7	12.4	7	-25.7	758.4
13 FK							
Median	6.1	0	64.5	7	0	-34.3	46.1
Std.abw.	5.6	0	26.1	0.3	0	0	27.8
Minimum	0.2	0	16.5	6.2	0	-34.3	-7.8
Maximum	38	0	212.3	8.4	0	-34.3	210.9
14 RA							
Median	6.1	0	66.1	9	37.9	-11.3	110.9
Std.abw.	5.6	0	15.6	0.6	3.6	0.7	17.6
Minimum	0.2	0	32.6	6.9	27.7	-12.3	68.7
Maximum	38	0	135.4	11.9	46.5	-10.3	187.8

Anhang 13: (Fortsetzung) Kupfer-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
15 SO							
Median	6.1	0	0	6.5	0	-27.6	-14.9
Std.abw.	5.6	0	0	0.8	0	0	5.4
Minimum	0.2	0	0	4.5	0	-27.6	-21.8
Maximum	38	0	0	9.3	0	-27.6	17.8
16 EE							
Median	6.1	0	7.8	6	0	-40.3	-18.5
Std.abw.	5.6	0	2.4	1.2	0	0	7.5
Minimum	0.2	0	4.9	3.5	0	-40.3	-29.3
Maximum	38	0	34.1	10	0	-40.3	18.4
17 SB							
Median	6.1	0	82.8	3.4	0	-39.1	56.6
Std.abw.	5.6	0	17.7	0.4	0	0	20.4
Minimum	0.2	0	51.6	2.4	0	-39.1	20
Maximum	38	0	179.1	4.7	0	-39.1	154.7
18 Wie							
Median	6.1	0	1.1	0	0	-15.3	-7.3
Std.abw.	5.6	0	0.5	0	0	4.9	7.5
Minimum	0.2	0	0.3	0	0	-31.9	-28
Maximum	38	0	4.7	0	0	-5.3	31
19 Wim							
Median	6.1	0	69.1	1.2	17.2	-61.5	35.5
Std.abw.	5.6	0	15.7	0.1	1.4	19.4	25.2
Minimum	0.2	0	36.7	1	13.8	-127.3	-49.2
Maximum	38	0	156.9	1.4	19.4	-21.7	127.6
20 Wil							
Median	6.1	0	163.4	2	1.6	-88.3	90.1
Std.abw.	5.6	0	45.2	0.1	0.1	28.2	55.5
Minimum	0.2	0	66.3	1.7	1.3	-183.9	-67
Maximum	38	0	364.8	2.5	1.9	-30.3	285.7
21 Wee							
Median	6.1	0	4	0	0	-15.3	-4.2
Std.abw.	5.6	0	1.6	0	0	4.9	8
Minimum	0.2	0	0.9	0	0	-31.9	-28.1
Maximum	38	0	13.1	0	0	-5.3	34.4
22 Wem							
Median	6.1	0	75.4	1.4	12.3	-52.7	46.2
Std.abw.	5.6	0	21.1	0.1	1	16.9	27.4
Minimum	0.2	0	37.8	1	9.9	-109.8	-42.2
Maximum	38	0	197.8	2	13.9	-18.1	165.6
23 Wei							
Median	6.1	0	121.8	4.5	5.8	-71.4	71
Std.abw.	5.6	0	30.8	0.5	0.5	22.8	38.7
Minimum	0.2	0	53.2	3.2	4.6	-148.8	-51.9
Maximum	38	0	304.7	6.2	6.5	-24.5	236.4
24 BE							
Median	6.1	0	94	2.1	0	-7.8	98.1
Std.abw.	5.6	0	27.3	0.3	0	0	30
Minimum	0.2	0	37.7	1.5	0	-7.8	41.3
Maximum	38	0	254.4	2.9	0	-7.8	258
25 DG							
Median	6.1	0	62.2	3.3	0	-24.2	49.2
Std.abw.	5.6	0	27.6	0.3	0	0.4	28.4
Minimum	0.2	0	16.7	2.5	0	-25.4	-2.2
Maximum	38	0	202.2	4.4	0	-23.4	186.7
26 RE							
Median	6.1	2049.5	0	5	0	-317.9	1747
Std.abw.	5.6	60.7	0	0.1	0	0	61.4
Minimum	0.2	1895.9	0	4.7	0	-317.9	1587.3
Maximum	38	2205.4	0	5.5	0	-317.9	1895.6
29 AP							
Median	6.1	41.6	0	7.5	0	-17.7	37.9
Std.abw.	5.6	3.1	0	0.2	0	0	6.2
Minimum	0.2	37.5	0	7	0	-17.7	28.1
Maximum	38	45.8	0	8.3	0	-17.7	72.9
28 KI							
Median	6.1	0	59.5	2.3	0	-47.9	23.7
Std.abw.	5.6	0	26.8	0	0	15.3	33.3
Minimum	0.2	0	13.3	2.3	0	-99.8	-54.5
Maximum	38	0	265.1	2.3	0	-16.4	221

Anhang 14: Zink-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
1 SG							
Median	97.1	0	255.7	29	0	-160.4	224.9
Std.abw.	22.1	0	59.9	1.5	0	0	62.5
Minimum	70	0	134.3	25.2	0	-160.4	75
Maximum	149.7	0	481.9	33.8	0	-160.4	451.8
2 WG							
Median	97.1	0	285.2	33.2	59.7	-206.6	273.8
Std.abw.	22.1	0	74.8	2.2	5	35.8	88.1
Minimum	70	0	146.1	28	48.5	-321.2	53.8
Maximum	149.7	0	688.4	40	73.5	-135.8	700.1
3 HA							
Median	97.1	0	243.4	35.1	187.4	-311.4	256.8
Std.abw.	22.1	0	46.9	4.3	45.2	0	67.9
Minimum	70	0	112.3	25.5	85.3	-311.4	68
Maximum	149.7	0	425.5	48.9	326.4	-311.4	517
4 WT							
Median	97.1	0	150.8	46.1	52.6	-241.9	109.7
Std.abw.	22.1	0	33	4.8	3.1	50.6	62.1
Minimum	70	0	78.1	34.8	48.8	-401.7	-65.1
Maximum	149.7	0	293.2	59.5	57.2	-117.2	344.3
5 SW							
Median	97.1	0	143.9	45.6	0	-216	74.7
Std.abw.	22.1	0	38.5	3	0	0	44
Minimum	70	0	73.8	37.8	0	-216	-17.5
Maximum	149.7	0	390.8	53.9	0	-216	304.1
6 WW							
Median	97.1	0	147.4	37.3	75.6	-233.6	129.5
Std.abw.	22.1	0	33.6	2.7	3.8	48.8	65.3
Minimum	70	0	74.2	30.1	66.5	-379.8	-42.2
Maximum	149.7	0	308.4	44.3	85.4	-96.9	343.9
7 RD							
Median	97.1	0	147.9	21.6	0	-146.2	124.4
Std.abw.	22.1	0	40	1.5	0	0	44.9
Minimum	70	0	74	17.3	0	-146.2	22.8
Maximum	149.7	0	290	27	0	-146.2	288
8 KM							
Median	97.1	0	922.9	29.9	0	-140.9	913.8
Std.abw.	22.1	0	258.7	1.4	0	0	262.4
Minimum	70	0	453	25.1	0	-140.9	412.6
Maximum	149.7	0	2283.6	34.6	0	-140.9	2254.7
9 SM							
Median	97.1	0	672.1	23.1	327	-506.2	627.1
Std.abw.	22.1	0	154	1.6	15	154	229.9
Minimum	70	0	350.5	18.6	289.8	-986.8	-52.4
Maximum	149.7	0	1354	28.7	371.8	-172.9	1309.7
10 ZR							
Median	97.1	0	583.7	39.7	130.5	-422.3	442.7
Std.abw.	22.1	0	132.9	2.6	10.4	138.5	197.1
Minimum	70	0	308.4	32.1	103.7	-770.6	-114
Maximum	149.7	0	2218.2	48.4	158.7	-197.4	2117.3
11 FR							
Median	97.1	0	245	36.1	56.3	-476	-34.7
Std.abw.	22.1	0	73.3	2.3	13.6	0	76.8
Minimum	70	0	104.1	30.7	25.6	-476	-207
Maximum	149.7	0	595	44.7	98	-476	291.7
12 KA							
Median	97.1	180.1	593.3	36.3	13.9	-186.1	738.2
Std.abw.	22.1	5	143.5	2	3.4	51.1	155
Minimum	70	167.3	314	31	6.3	-334.5	393
Maximum	149.7	194.2	1960.9	43.8	24.3	-102.9	2146.8
13 FK							
Median	97.1	9.4	320.1	21.4	0	-114.3	335.8
Std.abw.	22.1	0.7	145.4	1.6	0	0	146.1
Minimum	70	8.4	105	17.6	0	-114.3	104
Maximum	149.7	10.3	1141.4	25.2	0	-114.3	1156.8
14 RA							
Median	97.1	0	365.5	49	93	-145.8	462.1
Std.abw.	22.1	0	79.4	2.7	7	3.7	81.7
Minimum	70	0	196.2	42.1	75.7	-151.5	290.7
Maximum	149.7	0	681.4	58.6	115.8	-140.1	817

Anhang 14: (Fortsetzung) Zink-Bilanz der Kulturen in g/ha Kulturdauer

(Abkürzungen der Kulturen siehe Tabelle 3).

Standort	Deposition	Pestizide	Hofdünger	Mineral-dünger	Klär-schlamm	Ernte-gut	Nettoflux
15 SO							
Median	97.1	0	0	40.9	0	-87.2	51.3
Std.abw.	22.1	0	0	4.4	0	0	22.3
Minimum	70	0	0	32.3	0	-87.2	16.8
Maximum	149.7	0	0	54.5	0	-87.2	111.7
16 EE							
Median	97.1	0	80.2	38.2	0	-294.1	-75.5
Std.abw.	22.1	0	12.3	6.1	0	0	27.9
Minimum	70	0	55.5	24.9	0	-294.1	-125.3
Maximum	149.7	0	165.9	58.2	0	-294.1	33.3
17 SB							
Median	97.1	0	716.8	22	0	-123.7	714.2
Std.abw.	22.1	0	115.2	2.3	0	0	116.5
Minimum	70	0	477.3	15.7	0	-123.7	469.2
Maximum	149.7	0	1272.6	29.2	0	-123.7	1265.7
18 Wie							
Median	97.1	0	5.7	0	0	-80.3	25.5
Std.abw.	22.1	0	2.5	0	0	23.6	31.6
Minimum	70	0	2.8	0	0	-151	-63.4
Maximum	149.7	0	12.7	0.1	0	-26	112
19 Wim							
Median	97.1	0	371.2	5.8	39.1	-322	198.2
Std.abw.	22.1	0	71.9	0.3	3.4	93.3	119.5
Minimum	70	0	208.7	5	32.3	-601.3	-137.7
Maximum	149.7	0	656.9	6.9	46.2	-107.2	591.5
20 Wii							
Median	97.1	0	917.1	12	3.8	-462.9	579.5
Std.abw.	22.1	0	208	0.6	0.3	135.8	247.6
Minimum	70	0	479.4	10.6	3.1	-869.2	-32.7
Maximum	149.7	0	1914.1	13.3	4.4	-150.1	1610.4
21 Wee							
Median	97.1	0	19.7	0	0	-80.3	40.5
Std.abw.	22.1	0	9	0	0	23.6	33.6
Minimum	70	0	6.2	0	0	-151	-47.6
Maximum	149.7	0	70.7	0	0	-26	143.5
22 Wem							
Median	97.1	0	400	11.3	28.1	-276.3	268.2
Std.abw.	22.1	0	93.3	0.7	2.5	81.1	125.8
Minimum	70	0	232.9	9.4	23.2	-519.1	-52.2
Maximum	149.7	0	723.7	13.2	33.2	-89.4	725.2
23 Wei							
Median	97.1	0	669.8	13.4	13.1	-374.3	432.4
Std.abw.	22.1	0	149.1	0.7	1.2	109.9	187.8
Minimum	70	0	345.9	11.3	10.8	-703.3	-40.2
Maximum	149.7	0	1296.1	15.2	15.5	-121.1	1155
24 BE							
Median	97.1	0	507.5	11.8	0	-49.1	570.4
Std.abw.	22.1	0	130.9	1.2	0	0	133.1
Minimum	70	0	263.8	8.9	0	-49.1	330.1
Maximum	149.7	0	989.5	15.6	0	-49.1	1045.1
25 DG							
Median	97.1	64.1	402.8	17.1	0	-116.6	467.3
Std.abw.	22.1	2.6	164.4	1.2	0	4.4	159.5
Minimum	70	59	169.3	13.9	0	-129.3	219.9
Maximum	149.7	68.6	1273.9	21	0	-103.4	1335
26 RE							
Median	97.1	39.5	0	17.6	0	-50.1	103.9
Std.abw.	22.1	3	0	0.6	0	0	21.8
Minimum	70	35.6	0	16.2	0	-50.1	74
Maximum	149.7	43.5	0	18.9	0	-50.1	159.7
29 AP							
Median	97.1	0	0	89.6	0	-165	21.6
Std.abw.	22.1	0	0	0.8	0	0	22.2
Minimum	70	0	0	87.6	0	-165	-6.5
Maximum	149.7	0	0	91.4	0	-165	75.5
28 KI							
Median	97.1	0	371.1	9	0	-251.1	238
Std.abw.	22.1	0	125	0	0	73.7	144.6
Minimum	70	0	151.7	9	0	-471.7	-97.2
Maximum	149.7	0	1037.7	9	0	-81.3	924.5