

Methodology for calculating environmental payment rates

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- The principles and structure of the payment calculation
- Calculation of key figures in the modern farm management
- calculating agro-environment payments in Austria
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 - preservation of domestic animals
 - Natura 2000 payments
 - animal welfare payments
 - integrated production

Taking precautionary measures is better than repairing damage

- **Services** for society have to be paid (cultivation of land, low production intensity)
- A low production intensity is also regarded as service to the environment and therefore the farmer, who produces organically, is also compensated for

The AEP payment calculation has

- 2 levels:
 - Keeping low or reducing risks deriving from agriculture („extensification measures“, not formulated as aiming towards a specific target)
 - specific measures aiming at a specific target but with effects only in small areas
- high efficiency on larger areas only when both levels are combined!

The use of Enterprise budgeting in Calculations

- Enterprise budgeting contains four parts:
 - Gross income
 - Variable costs
 - Fixed costs
 - Measures of enterprise profitability

- Enterprise budgeting can be used to :
 - Assess the expected profitability of an enterprise
 - Compare the profitability of alternative enterprises
 - Develop a whole farm plan

Table 3.1 – Analysis of a tomato enterprise

Item	Number or quantity	Unit price (\$)	Amount (\$)
<i>Income</i>			
Tomato yield (tonnes per ha)	9.00		
Price		142.8	
(a) Total income			1 285.20
<i>Variable costs</i>			
<i>Labour (person/days)</i>			
Care of seedbeds	17.06	1.71	29.20
Ploughing	7.50	3.14	23.50
Harrowing	3.00	3.14	9.40
Furrowing	1.00	0.21	0.20
Transplanting	2.00	17.14	34.30
Cultivation	12.00	3.14	37.70
Weeding	36.00	1.71	61.60
Spraying /dusting	14.00	1.71	23.90
Harvesting	10.00	1.71	17.10
Sorting	4.00	1.71	6.80
<i>Sub - total</i>			243.70
<i>Materials</i>			
Seeds (g)	150.00	0.07	10.50
Fertilizer (kg)	200.00	0.60	120.00
Fungicide (litre)	3.00	4.80	14.40
Herbicide (litre)	4.00	17.50	70.00
Crates	250.00	0.14	35.00
Plastic covers	3		28.60
<i>Sub - total</i>			278.50
Interest on working capital*			+ 15.70
(b) Total variable cost			537.90
<i>Fixed costs</i>			
Depreciation			8.00
Rent			4.00
(c) Total fixed cost (allocable)			12.00
(d) Total cost (b + c)			549.90
Gross margin (a - b)			747.30
Enterprise profit (a - d)			735.30

2.1 Getreide

Qualitätsweizen													
Angaben in Euro je ha Preis: 15,00 €/dt; Saatgut: 85 kg Originalsaatgut (0,50 €/kg) und 85 kg Nachbauseatgut (0,26 €/kg) 14,0 % Eiweißgehalt													
Ertrag dt/ha	35,0	40,0	45,0	50,0	52,5	55,0	57,5	60,0	62,5	65,0	67,5	70,0	
Leistung	525	600	675	750	788	825	862	900	938	975	1.012	1.050	
Saatgut	65	65	65	65	65	65	65	65	65	65	65	65	65
Handelsdünger 1)	133	146	159	172	178	185	191	198	204	211	217	224	
Pflanzenschutz 2)	14	23	49	70	76	82	87	93	98	104	110	115	
Hagelversicherung	17	17	17	17	17	17	17	17	17	17	17	17	17
Variable Maschinenkosten*	170	170	170	170	170	170	171	171	172	172	173	173	
Lohndrusch	100	100	100	100	100	100	100	100	100	100	100	100	100
Trocknung 3)	6	6	7	8	8	9	9	10	10	10	11	11	
Variable Kosten	505	528	567	602	615	628	641	654	666	679	692	705	
Deckungsbeitrag	20	72	108	148	173	197	222	246	271	296	320	345	
DB bei eigenem Mähdrescher	77	129	165	205	230	254	279	303	328	353	377	402	
DB bei € 13,00	-50	-8	18	48	68	87	107	126	146	166	185	205	
DB bei € 18,00	125	192	243	298	330	362	394	426	459	491	523	555	
DB bei € 20,00	195	272	333	398	435	472	509	546	584	621	658	695	
DB bei € 22,00	265	352	423	498	540	582	624	666	709	751	793	835	
* Berechnung der variablen Maschinenkosten siehe Anhang I													
1) Düngerkosten wurden ohne Wirtschaftsdüngergaben berechnet. Nährstoffrücklieferung durch Wirtschaftsdünger ist als Kosteneinsparung dem Gesamt-DB hinzuzurechnen. Nährstoffrücklieferung durch Ernterückstände wurde berücksichtigt.													
Nährstoffmengen in Beziehung zum Ertrag (kg/ha). Die angeführten Nährstoffmengen sind keine Düngeempfehlung!													
N	0,90 €/kg	74	84	95	105	111	116	121	126	132	137	142	148
P ₂ O ₅	0,49 €/kg	28	32	36	40	42	44	46	48	50	52	54	56
K ₂ O	0,43 €/kg	23	27	30	34	35	37	39	40	42	44	45	47
CaO	0,14 €/kg	300	300	300	300	300	300	300	300	300	300	300	300
2) Pflanzenschutzmittel (kg od. l pro ha). Anwendungsbeispiele:													
Herb. Banvel M		-	-	-	1,60	1,60	1,60	1,60	1,60	1,60	1,60	1,60	1,60
Herb. DuplosankV ne		-	1,50	2,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fung. Tilt 250 EC		-	-	-	0,10	0,15	0,20	0,25	0,30	0,35	0,40	0,45	0,50
Herb. Dicopur500 fl		1,20	0,60	-	-	-	-	-	-	-	-	-	-
Fung. Folicur		-	-	0,50	0,60	0,65	0,70	0,75	0,80	0,85	0,90	0,95	1,00
Fung. Cercobin fl		-	-	0,10	0,20	0,25	0,30	0,35	0,40	0,45	0,50	0,55	0,60
Insz. Karate Zeon		-	-	0,04	0,05	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08
3) Durchschnittliche Trocknungskosten € 0,159/dt													
Gesamtarbeitsbedarf bei Standardmechanisierung (inkl. Rüstzeiten, Kontroll- u. Betriebsführungsarbeiten): 8-10 Akh bei Lohndrusch 9-11 Akh bei eigenem Mähdrescher													
Quelle: RITTLER, LK NO												BMLFUW	
Datenverarbeitung: Bundesanstalt für Agrarwirtschaft												2007	

Evidence in the legislation on the subject of calculations(1)

- The calculations must be based on the measures, which - when appropriate - worked with typical model farms .
- All figures and calculations are average values and may differ for the individual farm or a single plot up or down
- The calculations must take into account long-term trends (7 years) for the most important parameters (e.g. trends in producer and input prices)

Evidence in the legislation(2) Structure and principle

- There are only compensated for services that go beyond CC.
- Overlap between other subsidies are excluded.
 - Specifically, the following aspects:
 - Additional expenses
 - Less yield
 - Price reduction by lower quality
 - Cost reducing
 - Higher product prices
 - Transaction costs

Evidence in the legislation(3) Structure and principle

- Additional expenses may arise from:
 - ❑ Increased working hours (e.g., seed for new grassland)
 - ❑ More expensive feedstuff (e.g. Organic farming)
 - ❑ More expensive plant protection products (e.g. integrated production)
 - ❑ Lease of additional land to compensate for lower yields
 - ❑ Training and records
 - ❑ Increased use of machinery

Evidence in the legislation(4) Structure and principle

- **Reduced yields may result from:**
 - ❑ Less Milk
 - ❑ Lower yields in agriculture through reduced or limited fertilization, plant protection.
 - ❑ Lower forage yields (eg lower fertilization or late first cut).
 - ❑ Poor quality (eg waiver or prohibition of fungicides).

Evidence in the legislation(5) Structure and principle

- **Reducing Costs can result from:**
 - ❑ Less feed requirement or purchase (eg, less feedstuff due to lower LSU)
 - ❑ Less purchase of mineral fertilizers
 - ❑ Less pesticide
 - ❑ Reduced working hours (eg through reduced harvest volumes)
- **Transaction Costs**
 - ❑ considered in the calculations if they are caused by the additional obligations of each measur

The basic approach:

Gross Margin (CC conditions)
- (minus)
Gross Margin (AEP-obligations)
=Required compensation
+ (plus)
Possible transaction cost
AEP-Payment