Tabelle 8. Ursachenkomplexe für die in der Fleischgewinnung auftretenden Veränderungen
Reasons of the affections, seen in the meat inspection

Veränderungen	Mast	Transport	Schlachttechnologie
Untergewicht	X		
Entzündliche Veränderungen der Haut	X		
Entzündungen der Bursa sternalis	X		
Entzündliche Reaktionen der Federfollikel im sternalen Bereich	X		
Subkutante fibrinöse Ablagerungen	X		
Entzündliche Veränderungen von Leber/Herz	X		
Magen/Darm – Veränderungen	X		
Gelenksentzündungen	X		
Tumore	X		
Fütterungsbed. Leberveränderungen	X		
Frakturen, Gelenksläsionen	(X)	X	
Blutungen in Haut, Unterhaut, Muskulatur und Organen	X	X	(X)
Verfärbungen	X		X
Verschmutzungen	X	X	X
Unvollständiges Ausbluten	X	X	X
Nicht entfernte Teile			X
Mangelhafte Evisceration			X
Zerreißungen, Totalschaden	(X)		X

Tabelle 9. Eindrücke beim Einfangen
Impressions during catching

Parameter	Herde C_2 auffällig	Herde F_2 unauffällig
Einstreu	trocken	trocken
Kadaver	viele	wenig
Luft	schlecht, Augentränen	gut
Besonderheiten	Lahmheiten, Gelenke verdickt, Tiere ruhig bis träge	Tiere lebhaft

der Ursachen gegeben. Der Druck auf die im Schlachtbetrieb stattfindende Kontrolle kann damit gemindert werden.

6. *Zusammenfassung*

1. In einer Feldstudie wurden 16 Jungmastgeflügelherden klinisch betreut und nach der Schlachtung Untersuchungen hinsichtlich der Beschaffenheit der Schlachttierkörper vorgenommen.

2. Zwischen den Ergebnissen der ante-mortem-Untersuchung und denen der Untersuchung des frischen Geflügelfleisches ließ sich ein Zusammenhang darstellen: eine klinisch auffällige Herde erwies sich auch in der Fleischuntersuchung als deutlich auffällig.

3. Es wurden pathologisch-anatomische Veränderungen unterschiedlicher Gewichtung in unterschiedlicher Menge festgestellt. Besonders häufig waren Blutungen in der Haut, Hautveränderungen und Verletzungen.

Diese Veränderungen waren sowohl bei den untauglich beurteilten als auch bei den tauglich beurteilten Tierkörpern vorhanden. Die aufgetretenen Veränderungen lassen sich auf die Ursachenkomplexe Mast, Einfangen, Transport und Schlachttechnologie zurückführen.

Field trials on surveillance of poultry production
II. Meat insprection in various broiler flocks

D. Neumann-Fuhrmann, R. Fries, E. Aukes and E. Müller-Hohe

Summary

1. In a field investigation 16 broiler flocks were looked after clinically. Condition of carcasses was examined after slaughtering.

2. There was a connection between results of ante mortem and post mortem examination: a flock, clinically suspicious, was suspicious in the meat inspection, too.

3. Pathological-anatomical affections were registered in various degrees and frequencies. First of all there were observed bleedings and alterations of the skin and damages. These affections could be seen as well in condemned carcasses as in carcasses fit for human consumption.

The alterations can be originated to the fattening period, catching and caging, transport and slaughter.

Stichworte

Broiler, Schlachtkörper, Qualität, Mast, Transport, Schlachtung, Hygiene, Beurteilung

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Anschrift der Verfasser: über P. D. Dr. R. Fries, c/o Institut für Lebensmittelkunde, Fleischhygiene und -technologie der Tierärztlichen Hochschule Hannover, Bischofsholer Damm 15, 3000 Hannover

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Performance of broiler chickens as influenced by a dietary enzyme complex with and without antibiotic supplementation

Die Beeinflussung der Broilerleistung nach Verfütterung eines Enzymkomplexes mit und ohne Antibiotikum-supplementierung

K. Elwinger and B. Teglöf

Manuskript eingegangen am 20. März 1990

1. Introduction

The effects of enzyme preparations affecting the utilization of poorly digested carbohydrates in diets for young broiler chickens have been demonstrated in several investigations during recent years, as reviewed by HESSELMAN (1989). This means that supplementation with enzymes will influence the conditions in the gastrointestinal tract and thereby the composition of the intestinal microflora. In this respect the enzyme preparations may interact with other feed additives used as growth promoters (i. e. feed antibiotics) as suggested by ELWINGER and SÄTERBY (1986). The importance of this interaction has often not been considered and in many experiments with enzyme preparations, it is not mentioned whether they are carried out with or without other feed additives. LUND (1987) reported positive interaction between antibiotics and enzymes for feed conversion efficiency and litter condition. These effects were not further discussed, however. FENGLER et al. (1988) found that a crude fungal (*Trichoderma viride*) preparation decreased, and penicillin addition increased, the excreta viscosities in chickens fed rye-containing diets. A possible interaction between these feed additives was not investigated, however. BROZ and FRIGG (1990) found improvement of body weight gain and feed conversion with supplementation of low levels of a *Trichoderma viride* enzyme complex to barley- oats based broiler diets. ROTTER et al. (1989) compared five different enzyme preparations in barley based diets and found a concentrate (Cellulase Tv) produced by the fungus *Trichoderma viride*, to be the most effective with maximal improvements at a very low concentration of enzymes.

The aim of this experiment was to evaluate the interaction effects of an enzyme complex, (Roxazyme G) produced by fermentation of *Trichoderma viride*, and a feed antibiotic (virginiamycin, Stafac® 500) on performance and health of broilers.

2. Material and methods

The trial included 3,744 commercial day-old Ross broiler chickens. The design was a 3x2-factorial experiment with three levels of the enzyme preparation (0, 100 and 200 ppm) and two levels of virginiamycin (0 and 20 ppm). Each treatment embraced 4 replicates (pens) randomly distributed on four blocks according to the location in the experimental room.

The diets were produced at the Agricultural University's feed mill. The grains were hammer-milled through 5.0 mm screens. All feed mixtures were steam-pelleted (3.0 mm). The diets were formulated to be iso-caloric with 11.6 MJ ME/kg, and a content of 20 % CP. The composition and calculated nutrient content of the basal diet are shown in Table 1.

Six experimental diets were manufactured, three without feed antibiotic and three with 20 ppm of virginiamycin (Stafac® 500). The enzyme preparation, Roxazyme G, was supplied by F. Hoffmann-La Roche Ltd., Basle, Switzerland. The preparation is a source of cellulase, beta-glucanase, xylanase, pectinase and amylase activities.

All the diets were supplemented with the coccidiostat lasalocid (Avatec®). The withdrawal diets were identical to the experimental diets except for the content of coccidiostat.

The chicks were feather-sexed, randomly distributed by equal numbers (78 males, 78 females) into 24 groups, weighed by group and placed in 24 floor pens (11 m²). Feed and water were available *ad libitum* (four feed tubes and two drinkers per pen). Wheat straw was used as litter. Temperature was regulated by a central heating system with an initial temperature of 35°C which was decreased by 1°C every second day to about 22°C after about 3 weeks.

The birds were weighed pen-wise and feed intake and feed conversion ratio (FCR) were recorded at days 21, 35 and at day of slaughter which was carried out between days 43 to 45 (8 groups per day). The birds were starved for 16 to 20 hours before slaughter. After slaughter the birds were weighed individually, including neck but without edible viscera.

The number of birds with droppings attached to the cloaca region (sticky droppings) was measured at day 7.

Litter condition was assessed at days 20 and 34 as to dryness and looseness using a scale from 1 to 10: (score 1 = completely dry and loose, score 10 = completely wet and cakey). The dry matter content of the litter was determined on samples taken in the middle of each pen at day 34. Water intake was recorded daily on a pen basis from days 1 to 39, with breaks for weekends from day 25.

The chickens' state of health was carefully observed. Most of the dead birds after the first week were examined for the presence of necrotic enteritis (NE). Autopsy of the dead

Department of Animal Nutrition and Management, Swedish University of Agricultural Sciences, Uppsala, Sweden

Table 1. Composition (%) and calculated nutrient content of the basal diet
Zusammensetzung (%) und Soll-Werte der Nährstoffe der Basaldiät

Barley	50.00
Wheat	11.0
Oats	10.00
Soybean meal (45 %)	20.00
Fish meal	3.00
Vegetable fat (Akofeed30)	2.00
Vitamin and trace elements premix[1])	1.00
Disodium phosphate	0.25
Dicalcium phosphate	1.20
Calcium carbonate	1.20
Salt	0.05
DL-methionine	0.18
L-lysine HCl	0.06
Coccidiostat (lasalocid)	0.06
	100.00

	Calculated content
ME, MJ/kg	11.6
Protein, %	20.0
Lysine, %	1.08
Methionine, %	0.51
Met + Cys, %	0.82
Fat, %	3.8
Linoleic acid, %	1.3
Crude, fibre, %	4.2
Calcium, %	0.91
Phosphorous, total, %	0.76
Sodium, %	0.16
Potassium, %	0.76
Chloride, %	0.16

1) The premix supplied per kg diet:
Vitamins
Vitamin A 15,000 IU, vitamin D_3 2,500 IU, vitamin E 25 mg, vitamin K_3 3 mg, vitamin B 1 mg, vitamin B_2 5 mg, vitamin B_6 3 mg, vitamin B_{12} 0.015 mg, biotin 0.075 mg, Ca-pantothenate 12 mg, niacin 25 mg, cholinechloride 300 mg, folic acid 1 mg
Trace elements
Mn 70 mg, I 1.5 mg, Co 0.3 mg, Zn 70 mg, Cu 5 mg, Fe 30 mg, Se 0.10 mg

birds was performed at the National Veterinary Institute. At slaughter condemnations due to liver lesions were notified.

Statistical analyses were performed using the Statistical Analysis System (SAS, 1985). The results at slaughter were adjusted to a mean age of 44 days by using age as a classified variable with three levels (43, 44 and 45). Relative frequencies (eg mortality and condemnation) were angular transformed before statistical analyses according to SNEDECOR and COCHRAN (1968).

The trial was performed between February 28th to April 13th 1989.

3. Results

The results of performance traits and statistical analyses are given in Table 2. The average mortality to slaughter was 6.0 %. There was a highly singificant ($p < .001$) difference between groups fed antibiotic-supplemented and non-supplemented diets (2.5 and 9.6 %, respectively). The main cause for this difference was an outbreak of NE in several non-medicated groups. There was an indication that enzyme supplementation decreased the rate of mortality ($p < .02$ and $p < .13$ at days 35 and 44, respectively).

Both antibiotic and enzyme supplementation highly significantly influenced growth rate during all growing stages. Birds fed antibiotic supplemented diets were, on average, 2.6, 2.6 and 3.6 % heavier than birds fed diets without antibiotic supplementation at days 21, 35 and 44, respectively. The corresponding effect of enzyme supplementation (100 ppm) on growth rate were 5.9, 3.4 and 1.7 %, respectively (constantly 40 to 50 g at each age). Significant or almost significant interaction effects ($p < .03$, .07 and .11 at days 21, 35 and 44, respectively) indicated a minor variation in the effect of enzyme when the diet was antibiotic supplemented.

Feed intake was significantly increased by enzyme supplementation during the first three weeks but not subsequently. Virginiamycin did not influence feed intake.

FCR was significantly influenced by both virginiamycin and enzyme supplementation. There was also a highly significant interactive effect at days 21 and 35 which was almost significant at day 44 ($p < .12$). This indicated that enzyme supplementation improved FCR only for birds fed non-medicated diets, which is the same as there was a minor variation in the effect of virginiamycin if the diet was enzyme supplemented.

Carcass yield at slaughter was significantly improved by virginiamycin (69.8 compared with 68.9 %, $p < .001$) but not by enzyme supplementation.

The frequency of condemnation due to body deformation was numerically but not statistically ($p < .18$) lower in groups fed antibiotic medicated compared to non-medicated diets. There were significantly more cases of condemned livers among birds fed diet A without enzyme and antibiotic supplementation compared with other diets.

The frequency of sticky droppings among birds at day 7 was influenced by virginiamycin ($p < .001$) and the enzyme ($p < .001$) alone as well as by their combination ($p < .001$).

The addition of enzyme improved litter condition when judged at day 34 ($p < .001$) which was confirmed by the litter dry matter content. Virginiamycin had no effect in this respect.

The enzyme preparation decreased ($p < .001$) water intake by an average of 6.7 % and 9.1 % over the whole measuring period for the 100 and 200 ppm levels respectively. Virginiamycin did not affect water intake.

4. Discussion

In Sweden, the use of antibiotics as feed additives has been prohibited by law since 1986 and may only be used on veterinary prescription in serious disease situations. The withdrawal of feed antibiotics has exacerbated disease problems with temporary outbreaks of NE due to *Clostridium perfringens* type A infection. Acute outbreaks are today treated with penicillin. Sometimes subclinical infections may cause liver lesions and increased condemnation at slaughter. The occurrence of NE appears to be dependent on several interacting factors: diet composition and hygienic quality are probably the most important factors. According to indications from experiments and practice, the composition of Swedish broiler diets has changed considerably in recent years, i. e. decreased protein and energy contents, decreased levels of animal protein sources and barley. The grains are often only coarsely ground and some wheat may be included whole. Due to legislation regulating the control of salmonella infections the complete diet has to be steam-pelleted. The composition of the basal diet used in this experiment is typical of the diets used in Sweden except for a higher content of barley which was chosen for experimental reasons.

Table 2. Results of performance and statistical analyses
Leistungsergebnisse und statistische Prüfungsergebnisse

Diet	Age, days	Without virginiamycin Enzyme addition, ppm 0 A	100 B	200 C	With virginiamycin Enzyme addition, ppm 0 D	100 E	200 F	Statistical p-values Virginiamycin	Enzyme	Interaction
Mortality, %	7	1.0	0.6	0.5	0.6	0.5	0.3	.36	.36	.92
	21	3.0	2.6	2.4	1.4	1.9	1.3	.08	.49	.58
	35	7.9	3.5	2.7	1.9	2.6	1.4	.02	.02	.05
	44	12.3	7.5	9.0	2.7	2.7	1.9	.001	.13	.33
Live weight, g	21	611	661	656	643	667	673	.001	.001	.03
	35	1453	1531	1523	1525	1546	1552	.001	.001	.07
	44	1851	1926	1902	1947	1963	1985	.001	.006	.11
Feed intake, g	21	954	978	980	952	988	987	.34	.001	.61
	35	2695	2747	2720	2729	2758	2753	.12	.15	.81
	44	3962	3938	3911	3931	3960	3960	.59	.89	.41
Feed conversion ratio	21	1.56	1.48	1.49	1.48	1.48	1.47	.002	.002	.005
	35	1.86	1.79	1.79	1.79	1.78	1.77	.001	.001	.003
	44	2.14	2.04	2.05	2.02	2.02	1.99	.001	.04	.12
Slaughter, yield, %	44	68.5	69.1	69.0	69.8	69.8	69.8	.001	.46	.47
Condemnation, %	44	1.1	1.1	1.8	0.9	0.6	0.8	.18	.51	.57
Liver lesions, %	44	1.7	0.2	0.2	0.0	0.2	0.2	.06	.24	.04
Sticky droppings, %	7	34.6	4.3	1.0	8.7	2.1	1.4	.001	.001	.001
Litter condition, scores	20	2.8	1.3	2.0	2.0	1.3	1.5	.45	.26	.85
	34	9.0	6.8	6.5	8.8	6.0	6.3	.43	.001	.90
Litter dry matter, %	34	52.2	56.6	59.4	50.3	59.7	60.5	.62	.001	.41
Water intake, ml/bird	1–7	252	238	229	244	234	232	.45	.001	.43
	7–14	452	445	442	454	443	446	.82	.44	.93
	14–21	1012	926	917	990	933	906	.32	.001	.42
	21–25	790	703	681	762	699	682	.22	.001	.31
	29–32	790	715	697	786	721	706	.67	.001	.86
	35–39	1238	1196	1123	1245	1157	1139	.58	.001	.08

Fifty birds which died between 7 and 35 days of age were subjected to veterinary autopsy and diagnosed as follows: NE 20 %, acute death syndrome 42 %, ascites 2 %, leg disorders 14 % and miscellaneous 18 %. In total, 50 % of all opened dead birds were found to have suffered from NE. During the last three days before slaughter, 55 birds (1.5 %) were found dead. These birds were not examined but the majority of the mortality was thought to be due to NE.

The effect of virginiamycin on the incidence of NE found in this experiment is in agreement with the results of JANSSON et al. (1990). No cases of NE were found amoung birds fed diets supplemented with virginiamycin. The first birds with NE were diagnosed in week 2. The first outbreak occurred between weeks 2 and 3 in one pen with birds fed the diet without enzyme or antibiotic addition where total mortality to slaughter was 10.9 %. Outbreaks of NE occurred in the other pens of this treatment between days 23 and 41. The birds fed enzyme supplemented diets appeared to show symptoms of disease somewhat later than the others, mainly during the last week. That enzyme supplementation gives some but not complete protection against NE is in agreement with the findings in the experiment by JANSSON et al., (1987). From this investigation it also appears that regarding the effects on growth rate and FCR, virginiamycin may be replaced by an enzyme preparation in diets containing a high portion of barley and/or oats. This was suggested by ELWIGER and SÄTERBY (1986). The significant main effect (without interaction) of virginiamycin at 44 days of age was probably correlated to the variation in mortality, since feed intake was not adjusted for mortality.

The results of this experiment provide further evidence of the effects of an enzyme preparation with β-glucanase, pentosanase and cellulase activities. The higher feed intake, increased bodyweights and improved FCR during the first weeks were probably caused by an enhanced passage rate in the digestive tract due to partially degraded feed endosperm cell walls giving a more rapid and extensive digestion of starch, protein and other nutrients in the small intestine as established by PETTERSSON and ÅMAN (1989). Improved digestibility of organic matter, mainly fat, has also been shown by BROZ and FRIGG (1986 b), FENGLER et al. (1988) and ELWINGER and TEGLÖF (1988). An increase in the dietary content of metabolizable energy by enzyme supplementation was demonstrated by BROZ and FRIGG (1986 a and 1990), ELWINGER and TEGLÖF (1988) and PETTERSSON and ÅMAN (1989).

Additional effects of the type of enzyme preparation used in this experiment are the decreased frequency of sticky

droppings, improved litter condition and decreased water intake which are all related to the viscosity of the digesta. It is noteworthy that the effect on water intake was almost constant in all periods (except between 7 to 14 days of age).

The effect of virginiamycin on the incidence of sticky droppings found in this experiment agrees with the results of JANSSON et al. (1990) but are opposite to the results of the experiments by ELWINGER and SÄTERBY (1986). This may be due to the lower level (10 ppm) of virginiamycin used in the latter experiments.

ELWINGER and SÄTERBY (1986) and MILES and HARMS (1984) reported a small but significant improvement in litter quality in pens that contained broilers fed virginiamycin. In the present experiment the litter was generally very caked and wet towards the end of the growing period. The reason may be related to the high content of barley in the diets. Under good conditions, the dry matter content remains above about 70 %. Supplementation with virginiamycin improved the litter condition numerically but not significantly.

The positive effect of virginiamycin on slaughter yield may partly be an indirect effect of the difference in body size of the birds but partly also of a reduction in intestinal weight as a result of feeding antibiotics as found by ELWINGER et al. (1981) and IZAT et al. (1989). LUND also found improved slaughter yields by using feed antibiotics but no effects using enzyme preparations. IZAT et al. (1989) reported that dietary antibiotic supplementation has little effect on carcass yield which is contradictory to our results. Probably there are interactive effects between diet fibre content and composition and feed antibiotics, which may explain the differences between the experiments.

In conclusion, the results of this experiment showed that in the diet which contained no virginiamycin the tested enzyme preparation was very active and it appeared that the lowest level tested (100 ppm) was sufficient for optimal performance. In the antibiotic supplemented diets, the effect of the enzyme preparation was not significant regarding growth rate, negligible for FCR but significant for water intake and litter condition.

Acknowledgements

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5. Summary

An enzyme complex (Roxazyme G) produced by the fermentation of *Trichoderma viride* was tested in broiler diets (20 % CP, 11.6 MJ/kg) where the cereal part consisted of barley (50 %), wheat (40 %) and oats (10 %). The design was a 2x3-factorial experiment with 2 levels of feed antibiotic (virginiamycin, 0 and 20 ppm) and 3 enzyme levels (0, 100 and 200 ppm). The experiment involved 3744 Ross broiler chickens and was carried out between 0 and 44 days of age.

The average performance of the birds was considered to be satisfactory despite the diet being based on barley. Average live weight, FCR and mortality were 1522 g, 1.80 and 3.3 %, respectively, at 35 days of age. Corresponding results at slaughter (44 days) were 1929 g, 2.05 and 6.0 %, respectively.

There was a highly significant difference in mortality between antibiotic-supplemented and non-supplemented groups (2.4 and 9.6 %), due to outbreaks of necrotic enteritis. There was an indication that, when no antibiotic was included, birds fed enzyme supplemented diets resisted illness longer than the others.

In diets without feed antibiotic, the enzyme preparation was very active and resulted in a 4 % increase in growth rate and improved FCR. It also decreased water intake, the frequency of sticky droppings, mortality, condemnating due to liver lesions and improved litter condition. The lower tested level (100 ppm) appeared to be sufficient for optimal performance.

In the antibiotic supplemented diet, the effect of the enzyme preparation was not significant for growth rate, negligible for FCR but significantly decreased water intake and improved litter condition.

Die Beeinflussung der Broilerleistung nach Verfütterung eines Enzym-Komplexes mit und ohne Antibiotikasupplementierung.

Elwinger, K. und B. Teglöf

Zusammenfassung

In einer Mastkükendiät (20 % RP, 11,5 MJ UE) mit den Getreideanteilen 50 % Gerste, 40 % Weizen und 10 % Hafer wurde ein Enzymkomplex (Roxazyme G) geprüft, das mit *Trichoderma viride* durch Fermentation hergestellt wurde. Der Versuch war faktoriell mit 2 Antibiotikaniveaus (Virginiamyzin, 0 und 20 ppm) und 3 Enzymniveaus (0, 100 und 200 ppm) angelegt, er umfaßte 3744 Ross-Mastküken im Abschnitt 0 bis 44 Lebenstage.

Trotz der Verwendung von Gerste konnten die durchschnittlichen Mastergebnisse als befriedigend bezeichnet werden. Beim Alter von 35 Tagen betrugen durchschnittlich das Lebendgewicht 1522 g, die Futterverwertung 1:1,80 und die Mortalität 3,3 %. Die entsprechenden 44-Tageswerte betrugen 1929 g, 1:2,05 und 6,0 %.

Es ergab sich ein hochsignifikanter Einfluß der Antibiotikaverabreichung auf die Mortalität, hauptsächlich als Folge nekrotischer Enteritis von 2,4 % (mit A.) gegenüber 9,6 % (ohne A.). Es lagen Anzeichen dafür vor, daß bei Nichtverabreichung des Antibiotikums die enzymsupplementierten Tiere eine bessere Widerstandskraft aufweisen als diejenigen ohne.

Die Enzymsupplementierung übte in der antibiotikumfreien Diät einen aktiven Einfluß aus und verbesserte die Zuwachsrate und Futterverwertung um 4 %. Sie verringerte die Wasseraufnahme, das Verkommen von kleistrigen Exkrementen, Mortalität sowie Kassation aufgrund Leberschäden und verbesserte die Einstreuqualität. Das geringere Supplementierungsniveau (100 ppm) schien für eine optimale Wirkung ausreichend.

Bei Verabreichung der antibiotikumversetzten Diät erwies sich der Einfluß der Enzymzugabe als nicht signifikant auf die Zuwachsrate und Futterverwertung, jedoch signifikant senkend auf die Wasseraufnahme und verbessernd auf die Einstreuqualität.

Stichworte

Broiler, Fütterung, Zusatz, Enzym, Antibiotika, Gerste, Weizen, Mastleistung, Zunahme, Futteraufwand, Wasserverbrauch, Mortalität, Kotkonsistenz, Einstreu

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Deutsche Gruppe der Weltvereinigung
für Geflügelwissenschaft
(World's Poultry Science Association – WPSA)

Niederschrift über die Mitgliederversammlung am 5. März 1991 in Bad Zwischenahn

Beginn: 16.00 Uhr.

Der Präsident begrüßt die Teilnehmer und Gäste und gedenkt der 1990 verstorbenen Mitglieder: Frau Prof. Dr. Irmgard Gylstorff, München und Dr. Reinhard Günther, Elsnigk.

1. Zusammenschluß de beiden deutschen Gruppen der WPSA

Der Präsident berichtet, daß anläßlich einer Zusammenkunft mit dem Vorstand der WPSA-Gruppe der ehemaligen DDR während der Herbst-Exkursion am 7. Oktober 1990 in Merbitz mitgeteilt wurde, daß die DDR-Gruppe aufgelöst und den Mitgliedern anheimgestellt wird, sich der Deutschen Gruppe der WPSA (BRD) anzuschließen. Ein Vermögen war in der DDR-Gruppe der WPSA nicht vorhanden.

Inzwischen haben sich 34 Mitglieder aus der ehemaligen DDR bei unserer Gruppe gemeldet.

2. Zuwahlen zum Vorstand

Der Präsident erläutert den Vorschlag des Vorstandes, zwei Mitglieder aus den neuen Bundesländern bis zur nächsten Vorstandswahl, die alle drei Jahre ansteht, dazuzuwählen. (Die nächsten Vorstandswahlen finden nicht 1992, wie irrtümlich angegeben, sondern erst im Frühjahr 1993 statt).

Die anwesenden Mitglieder aus den neuen Bundesländern werden gebeten, im Verlauf dieser Tagung zwei ihrer Mitglieder für den Vorstand zu benennen. Es wurden Prof. Bonitz, Merbitz und Prof. Pingel, Leipzig, benannt, die somit als weitere Mitglieder dem Vorstand angehören.

3. Satzungsänderung

Allen Mitgliedern wurde fristgerecht die im Einvernehmen mit dem Finanzamt Celle vorbereitete Satzungsänderung übermittelt.

Der Präsident verliest einen Vorschlag von Prof. Petersen, Bonn, zur klareren Formulierung des § 1, 2. und des § 3, 3., der einstimmig, ebenso wie alle weiteren vorgelegten Satzungsänderungen, angenommen wird.

Weiterhin wird über eine Änderung des Namens der Vereinigung diskutiert und der Vorschlag „Deutsche Vereinigung für Geflügelwissenschaft e. V." (Deutsche Gruppe der World's Poultry Science Association – WPSA –) mit 70 Ja-Stimmen, 0 Nein-Stimmen und 2 Stimmenthaltungen angenommen.

4. Jahresabschluß 1990

Der Jahresabschluß wird von der Sekretärin in Form der Gewinn- und Verlustrechnung und der Gesamtbilanz vorgelegt und erläutert. Die Kassenprüfung erfolgte am 1. März 1991 durch Herrn Hilbrich und gab keinen Anlaß zu Beanstandungen. Dem Vorstand wird einstimmig Entlastung erteilt.

Aufgrund der Satzungsänderung ist ein zweiter Kassenprüfer zu wählen sowie zwei Stellvertreter. Als zweiter Kassenprüfer wird Herr Dr. Lüders vorgeschlagen und einstimmig gewählt. Herr Dr. Lüders nimmt das Amt an. Als Stellvertreter werden vorgeschlagen: Herr Dr. Scheelje und Herr Risch, sie werden einstimmig gewählt. Ihr Einverständnis ist noch einzuholen.

5. Haushaltsvoranschlag 1991

Der Haushaltsvoranschlag wird vorgelegt, erläutert und einstimmig genehmigt.

6. Mitgliederstand

Mitgliederstand am 1. 1. 1990: 1 Patron, 36 Affiliates, 219 Einzelmitglieder, davon 2 Ehrenmitglieder und 11 Studenten = 256 Mitglieder insgesamt.

Neue Mitglieder 1990: Dr. Bachmeyer, Straubing; Prof. Kirchgeßner, Weihenstephan; Frau Annette Menke, Bonn; Frau Margret Meyer, Cloppenburg; Dr. Onken, Stadland; Herr Poteracki, Lippstadt; Herr Poweleit, Neumünster (Student); Herr Ramaker, Wassenberg-Ophoven; Herr Risch, Hannover; Dr. Salisch, Hannover; Herr Tapphorn, Brockdorf; Herr Wallner, Hebertshausen; Deutscher Bauernverband, Bonn.

Ausgeschiedene Mitglieder 1990: Dr. Ameli, Göttingen (keine Beitragszahlung); Frau Friederike Baare, Studentin, Kiel (keine Beitragszahlung); Prof. Bronsch, Berlin (Ruhestand); Frau Andrea Buhrmann, Studentin, Linden (keine Beitragszahlung); Frau Prof. Gylstorff, München (verstorben); Dr. Harnisch, Celle (Ruhestand); Prof. Hartfiel, Bonn (Ruhestand); Herr Kleybold, Herr Möhlenpage, Edewecht (Firmenaufgabe); Herr Maus, Stuttgart (ohne Angabe von Gründen); Frau Anneliese Renneberg, Ehrenmitglied (aus Altersgründen).

Mitgliederstand am 31. 12. 1990: 1 Patron, 37 Affiliates, 220 Einzelmitglieder, davon 1 Ehrenmitglied und 7 Studenten = 258 Mitglieder zusammen.

Neue Mitglieder 1991: Dr. Paul, Berlin; Dr. Vogel, Altenbuch; Dr. Wilms-Schulze-Kump, Visbek; Heidemark Putenschlachterei, Garrel sowie 34 Mitglieder aus der ehemaligen DDR. Die Liste dieser Mitglieder ist gesondert aufgeführt (siehe unten).

7. Veranstaltungen im Herbst 1991 und Frühjahr 1992

Herbst 1991: Es wird mehrheitlich beschlossen, die Herbstexkursion Anfang Oktober 1991 nach Frankreich in die