Table II. Recovery of Known Amounts of Reserpine from Poultry Products

Tissue	Reserpine, P.P.B. Added	Reserpine, P.P.B. Found[a]	Mean Recovery, %
Blood (pooled)	10	8.9	89
Carcasses (ground)	5	5.2 ± 0.3(6)	104
Eggs (whole)	2	2.5 ± 0.1(2)	125
	3	3.3 ± 0.3(2)	110
	5	5.3 ± 0.6(2)	106
	10	8.3 ± 0.1(2)	83
Eggs (homogenized frozen)	10	8.6 ± 0.1(2)	86
Fat (pooled)	2	2.6 ± 0.1(3)	130
	3	3.4 ± 0.2(3)	113
	5	5.3 ± 0.3(3)	106
	10	8.9 ± 0.6(4)	89
Gizzard (pooled)	10	8.7 ± 0.3(3)	87
Heart (pooled)	10	7.2	72
Liver (pooled)	10	7.8 ± 0.8(3)	78
Muscle (leg + breast)	2	2.0 + 0.2(3)	100
	3	3.2 ± 0.2(3)	107
	5	5.0 ± 0.3(3)	100
	10	9.2 ± 0.8(4)	92

[a] Numbers in parentheses refer to number of determinations involved.

Table III. Reserpine Residues in Chickens and Eggs from Medicated Birds

Tissue	No. Analyzed[a]	Reserpine Feed Schedule: Concn., p.p.m.	Reserpine Feed Schedule: Duration, weeks	Reserpine Found, P.P.B.
Blood (pooled)	2	2	8	<2
	2	4	8	<2
	1	40	2	2
Carcasses	7	4	8	<2
Eggs				
Whole	6	2	8	<2
	6	2	9	<2
Homogenized	7	2	8	<2
Whites	5	2	4	<2
Yolks	5	2	4	<2
Fat (pooled)	1	40	2	4
Heart/gizzard (pooled)	2	2	8	<2
	1	40	2	4
Livers (pooled)	2	2	8	<2
	6	10	4	<2
	2	40	2	2
Muscle				
Breast + leg	3	40	2	<2
Light	3	2	8	<2
Dark	3	2	8	<2
Skin	1	40	2	4

[a] Each sample from a different bird or separate pool of birds.

mulate during the feeding of the formulation, the observance of a withdrawal period is not necessary. This paper demonstrates that no reserpine is present, or is nondetectable, in either poultry tissues or eggs of birds on a medicated diet containing recommended levels of reserpine. Confirmatory investigations by some of our associates with tritium-labeled reserpine indicated no detectable drug in chicken tissues after a diet containing 2.5 mg. per kg. of feed for 9 weeks.

To demonstrate differences, if any, in the way in which reserpine is metabolized in turkeys, similar experiments were initiated with this species. The birds were fed a complete ration containing 2 p.p.m. of reserpine for several months with no withdrawal. The residue studies showed no reserpine present in any tissues and there was no evidence that turkeys differ from chickens.

To broaden the spectrum of coverage, antibiotics were combined with reserpine in commercial feed formulations. This required tissue residue levels for each agent and for each combination. However, it was necessary to restrict the number of combinations, as it would have been impractical to clear all possible combinations of established therapeutic agents. Broad trials were run in the field with reserpine in combination with penicillin and streptomycin, zinc bacitracin, and chlortetracyline. Studies were designed for long-term and short-term feeding of therapeutic levels and prophylactic levels of antibiotics in the feeds of broilers, layers, and turkeys. Tissues and eggs were collected for antibiotic studies as well as for reserpine determinations. Since all antibiotics tested were established feed additives, clearance became a cooperative effort with other companies.

These studies showed no statistically significant residues of any antibiotics in samples of blood, muscle, liver, kidney, heart, gizzard, and eggs. Also, discontinuance of use before slaughter was not indicated. No difference could be demonstrated between birds fed the antibiotic alone and birds fed the antibiotic in combination with reserpine. Likewise, our results indicated no detectable concentration of residual reserpine in any of the tissues and eggs. Thus, the presence of antibiotics in the diet of chickens and turkeys did not effect the retention of reserpine. In summary, the total results are the same for the combination groups as for those treated with one agent.

Literature Cited

(1) Belloff, G. B., Abstracts, Texas Nutrition Conference, 1959.
(2) *Feedstuffs* **35** (4), 254 (1963).
(3) Glazko, A. J., Dill, W. A., Wolf, L. M., Kazemko, A., *J. Pharmacol. Exptl. Therap.* **118,** 337 (1956).
(4) Haycock, R. P., Sheth, P. B., Mader, W. J., *J. Am. Pharm. Assoc.* **48,** 479 (1959).
(5) Hess, S. M., Shore, P. A., Brodie, B. B., *J. Pharmacol. Exptl. Therap.* **118,** 84 (1956).
(6) Mader, W. J., Haycock, R. P., Sheth, P. B., Connolly, R. J., *J. Assoc. Offic. Agr. Chemists* **43,** 291 (1960).
(7) Poet, R. B., Kelly, J. W., Abstract 203, Division of Biological Chemistry, 126th Meeting, ACS, New York, N. Y., September 1954.
(8) Sheppard, H., Wagle, G. L., Plummer, A. J., *Federation Proc.* **13,** 404 (1954).
(9) Tishler, F., Sheth, P. B., Giaimo, M. B., *J. Assoc. Offic. Agr. Chemists* **46,** 448 (1963).

Received for review March 18, 1966. Accepted April 30, 1966.

Correction

The Determination of the Vapor Pressures of Some Phenoxyacetic Herbicides by Gas-Liquid Chromatography

In this article by David J. Jensen and E. D. Schall [J. AGR. FOOD CHEM. **14,** 123 (1966)], Equations 1, 4, and 5 should be changed by adding a minus sign before each log term on the right side of the equation. These changes also require inversion of Equation 6 to read $\alpha = z_1/z_2 = p_2^0/p_1^0$.

These equations then read:

$$\log V_{21} = -\log (p_1^0/p_2^0) - \log (\gamma_1/\gamma_2) \quad (1)$$

$$\log (z_1/z_2) = -\log (p_1^0/p_2^0) - \log (\gamma_1/\gamma_2) \quad (4)$$

$$\log (z_1/z_2) = -\log (p_1^0/p_2^0) \quad (5)$$

$$\alpha = z_1/z_2 = p_2^0/p_1^0 \quad (6)$$