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**HEALTH OF WORKERS IN THE MIXED FEED
ENTERPRISES**

E. A. Mavrina

**Foreign Technology Division
Wright-Patterson Air Force Base, Ohio**

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| Block | Italic | Transliteration | Block | Italic | Transliteration |
|-------|------------|-----------------|-------|------------|-----------------|
| А а | <i>А а</i> | A, a | Р р | <i>Р р</i> | R, r |
| Б б | <i>Б б</i> | B, b | С с | <i>С с</i> | S, s |
| В в | <i>В в</i> | V, v | Т т | <i>Т т</i> | T, t |
| Г г | <i>Г г</i> | G, g | У у | <i>У у</i> | U, u |
| Д д | <i>Д д</i> | D, d | Ф ф | <i>Ф ф</i> | F, f |
| Е е | <i>Е е</i> | Ye, ye; E, e* | Х х | <i>Х х</i> | Kh, kh |
| Ж ж | <i>Ж ж</i> | Zh, zh | Ц ц | <i>Ц ц</i> | Ts, ts |
| З з | <i>З з</i> | Z, z | Ч ч | <i>Ч ч</i> | Ch, ch |
| И и | <i>И и</i> | I, i | Ш ш | <i>Ш ш</i> | Sh, sh |
| Й я | <i>Й я</i> | Y, y | Щ щ | <i>Щ щ</i> | Shch, shch |
| К к | <i>К к</i> | K, k | Ъ ъ | <i>Ъ ъ</i> | " |
| Л л | <i>Л л</i> | L, l | Ы ы | <i>Ы ы</i> | Y, y |
| М м | <i>М м</i> | M, m | Ь ь | <i>Ь ь</i> | ' |
| Н н | <i>Н н</i> | N, n | Э э | <i>Э э</i> | E, e |
| О о | <i>О о</i> | O, o | Ю ю | <i>Ю ю</i> | Yu, yu |
| П п | <i>П п</i> | P, p | Я я | <i>Я я</i> | Ya, ya |

* ye initially, after vowels, and after ъ, Ъ; e elsewhere.
 When written as ѐ in Russian, transliterate as yě or ě.
 The use of diacritical marks is preferred, but such marks
 may be omitted when expediency dictates.

HEALTH OF WORKERS IN THE MIXED FEED ENTERPRISES

E. A. Mavrina (Saratov)

Medical Institute

(Submitted for publication 8 July 1969)

Workers in mixed feed enterprises are exposed to certain unfavorable industrial factors in the course of their work. As raw materials for the production of mixed feeds, vegetable (cereal crops, waste products of hulled grain, oil extraction, and other products) and animal (fish, blubber, bonemeal) derivatives are used. Mineral substances (chalk, salt, finely ground shells), trace elements (iron sulfate, copper sulfate, zinc sulfate, cobalt carbonate, and others), vitamins C and group B, as well as the antibiotic biovitin, serve as additives to the feed. K. A. Galvina and A. S. Slutsker, M. I. Kaprova and coauthors point out the high dust content of the air environment in the process of producing mixed feeds.

We have conducted studies at the Saratov mixed feed plant where the concentrations of dust in the air during individual production operations (unloading raw materials, crushing, delivery of oil cake via conveyor, etc) reached 336-612 mg/m³. One of the bad sections is the preparation of the enriching mixture, which is produced by hand. In weighing out the micro-additives, in sprinkling them into the mixer and crumbling, the dust content of the air rises to 184 mg/m³. The content of trace elements in the environment exceeds

the PDK [ПДК - maximum permissible concentration] 1 1/2 - 2 times. A. V. Kozinevtsa observed a concentration of iron sulfate of 9.09 mg/m³. The content of biovitin was high - 320 mg/m³.

For the purpose of studying the effects of the enumerated unfavorable factors of mixed feed production on the health of the workers, a study was made of 72 persons from the main occupations (24 men, 48 women) from 30 to 60 years of age. The period of service in mixed feed production for the overwhelming majority of the subjects (52) exceeded 10 years. Only 9 of those examined (12.5%) presented no complaints whatsoever. The most widespread complaint was coughing, which bothered 38 persons (52.3%). For the majority of them a dry cough occurred periodically (36.1%), less frequently (in 16.6% of the cases) it was accompanied by emission of mucus. Labored breathing during rather light physical exertion bothered 22 workers (30.5%). In 4 of those examined (5.5%) asthma attacks occurred periodically, and 5 (6.9%) - pains under the shoulder blades, and 11 (15.2%) - a feeling of tickling in the throat.

Changes on the part of the cardio-vascular system were characterized by pains in the region of the heart (for 36.1%), by the appearance of vascular dystonia (for 24%). Twenty-eight workers (38.8%) complained of a persistent headache which at first came on only while at work, and then assumed a permanent character. Pains in the stomach region bothered 15 workers (20.8%). We paid special attention to the complaints by certain examinees of considerable worsening of an ill feeling while performing work involved with direct contact with micro-additives (biovitin, trace elements). Nausea (in 10 persons) sialorrhea (in 3), unpleasant metallic taste in the mouth (in 4), vomiting (in 2), epiphora (in 6), head colds (in 3 a sensation of scratching in the throat), nosebleeds (in 5), itching of the skin of the hands (in 6), bore a temporary character. All these manifestations passed off after work. Four workers remarked on peeling of the skin of the hands and cracking, and 1 - a rash on the face, neck, and hands.

An overwhelming majority of those examined mentioned the irritating effect of micro-additives and the finished products containing them on the mucous membranes of the eyes and upper respiratory tract. It was no accident that for 58.1% chronic diseases of the upper respiratory tracts (rhinitis, laryngitis) were observed. The significant percentage of eosinophilia revealed in the examined workers, as well as the character of the complaints, points to the possible allergization of the workers by the organic dust and the anti-biotic.

Despite the high percentage of persons presenting complaints of the respiratory organs, lung diseases were diagnosed in only 8.3% of the cases, including chronic bronchitis in 4 persons (2 of these with asthmoid component), primary bronchial asthma in 1, and stage I pneumoconiosis in 1. The occupational origins of the manifested diseases raised no doubt. The sensitizing effects of mixed feed dust also lead to the appearance of allergic dermatitis in 4 workers (5.5%). Dysfunctions of the gastro-intestinal tract were noted which were expressed by pains, nausea, meteorism, constipation, etc. In the development of the disturbances indicated, as well as the skin affections and bronchial asthma, a certain role may be played by dysbacteriosis caused by prolonged contact with bicvitin. In this way, the changes we discovered in the health of the workers in the mixed feed plant are linked with the effect on the organism of the mixed composition of the mixed feed dust (the whole complex of component parts) suspended in the air of the industrial premises.

Conclusions

1. During prolonged industrial contact with mixed feed dust an outbreak of occupational diseases of the respiratory organs and skin is possible.

2. For prophylaxis of the occupational diseases among workers of the mixed feed industry, public health hygiene methods must be introduced directed towards improvement of working conditions and limiting contact with raw products, as well as regular medical inspections of workers and timely labor assignment of the ill.

3. In working out contra-indications when hiring, it is necessary to take into consideration diseases of the upper respiratory tracts and lungs, dermatoses, ailments of the gastro-intestinal tract, and the tendency to allergic reactions.

BIBLIOGRAPHY

Галкина К. А., Слуцкер А. С. В кн.: Актуальные вопросы гигиены труда и профессиональной патологии. Рига, 1968, с. 103. — Карпова М. И., Дубравина И. Л., Козничева А. В. В кн.: Труды 3-й научной конференции Саратовск. научно-исслед. ин-та сельской гигиены. Саратов, 1969, с. 43.

Любомудров В. Е. Рецензия на монографию А. М. Рашевской, К. П. Молоканова, Н. А. Сенкевич, Т. Н. Калитеевской. Лечение силикоза и силикотуберкулеза (современные методы лечения). Изд-во «Медицина». М., 1970, 168 с., тираж 4300 экз.

Lyubomudrov, V. E.: A Review of the Monograph by A. M. Rashevskaya, K. P. Molokanova, N. A. Senkevich, T. N. Kaliteevskaya. Treatment of Silicosis and Silicotuberculosis (Modern method of therapy) Publishing House "Meditsina". M. 1970, p. 168

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