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OPTIMALNI UVJETI DOBROBITI ŽIVOTINJA U OBJEKTIMA ZA TOV SVINJA U LJETNOM RAZDOBLJU

Sažetak

Osigurati optimalne uvjete okoliša jedna je od pretpostavki koja će imati pozitivan utjecaj na termoregulaciju svinja, zdravstveni status životinja te poboljšane rezultate u rasplodu svinja. Na temperaturu kao najvažniji okolišni čimbenik u svinjcu utječe relativna vlaga i protok zraka. Bliska je veza između vlage i temperature. Naši rezultati pokazuju da u 28,25 % i u 56,4 % vremena, unutarnja temperatura (14-22°C) i relativna vlaga (50-75%) bile u optimalnim rasponima. U promatranom vremenu, ukupni broj mikroba koji su kontaminirali zrak u svinjcu, kretao se od $1,04x10^4$ i $1,38x10^5$ CFU/m^3 zraka, dok se ukupni broj koliformnih mikroorganizama kretao od $1,57x10^2$ i $1,57x10^3$ CFU/m^3 zraka. Na osnovu mjerenja provedenih u ovom istraživanju može se zaključiti da u objektu za tov svinja relativno povoljna mikrobiološka slika može biti ostvarena pod ne standardnim fizikalnim uvjetima.

Ključne riječi: okoliš, mikroklimatski uvjeti, mikrobiološka kontaminacija

Primljeno: 10. 5. 2004.

UDK 636.03→614.9

Izlaganje sa znanstvenog skupa
Conference paper

TECHNOLOGY OF PROCESSING OF MANURE CONTAINING WASTES THE ENTERPRISES FOR MANUFACTURE OF CATTLE-BREEDING PRODUCTION

V. I. Piskun

Summary

The circuit of a technological line of processing of manure containing wastes of the enterprises for manufacture of cattle-breeding production and results of approbation of its elements is given.

Key words: animal wastes, technology, fodder additives

Introduction

The restoration of production of pig breeding in conditions of the market should be based on qualitatively new technological and technological level, which provides more complete realization of genetic potential animal, rational use of a fixed capital, reduction of industrial expenses, forages, working hours, power resources, reception of high-quality, ecologically clean, competitive products. The tendency of development of agricultural manufacture of the advanced countries of the world shows, that the proof tendency of a deepening of specialization is observed and the growth of concentration at production pig breeding is dependent from the forms of ownership and managing [1]. The specialization and concentration of production pig breeding has caused of use of industrial technology and connected with it without litter a way of the contents of animals and reception of cattle-breeding drains. However thus there is a number of problems, among which there is a problem of removal and recycling of the large volumes of drains. In the solutions of these questions there are complexities both technical and economic character, and also the danger of pollution of an environment is created. One of the important directions of development of

Rad je priopćen na 5. znanstveno stručnom skupu iz DDD-a s međunarodnim sudjelovanjem "Pouzdan put do zdravlja životinja, ljudi i njihova okoliša", Mali Lošinj, 5-8. svibnja 2004, Hrvatska.

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branch is the transition on energy and resource-saving and ecologically safe "know-how" of pork, and in particular, at removal and processing of cattle-breeding drains. On the basis of world experience and carried out researches some directions of recycling of drains were defined into the following groups: preparation of organic fertilizers, preparation of the fodder additives, manufacture of combustible materials and their combined use. The main direction in the decision of a problem of recycling of drains is their preparation for use as organic fertilizer. Thus use two essentially different systems of processing of drains. One of them provides processing drains without division them on a fraction, another - as one of the basic operations includes division of drains on a fraction. The long-term practice and analysis of the references shows, that most effective systems of preparation of drains to use provide fractionating of drains by machine methods [2]. At machine fractionating of drains use processes of thawing, filtering, condensation of a deposit of drains and it removal of moisture more often. The researches on cultivate on dense fraction manure of mushrooms, manufacture of bacteria on nutritious environments from liquid manure liquid fraction are carried out, cultivation of yeast [3,4,5]. However methods of preparation of drains to use as fertilizers with reception of the fodder additives have not found wide application in enterprises as abroad, and our country in connection with complexity of their realization. The purpose of development accessible to realization in conditions of enterprises of the technological circuit of preparation manure contained wastes of the enterprises for manufacture of cattle-breeding production to use with reception of organic fertilizers and fodder additives is put.

Material and methods

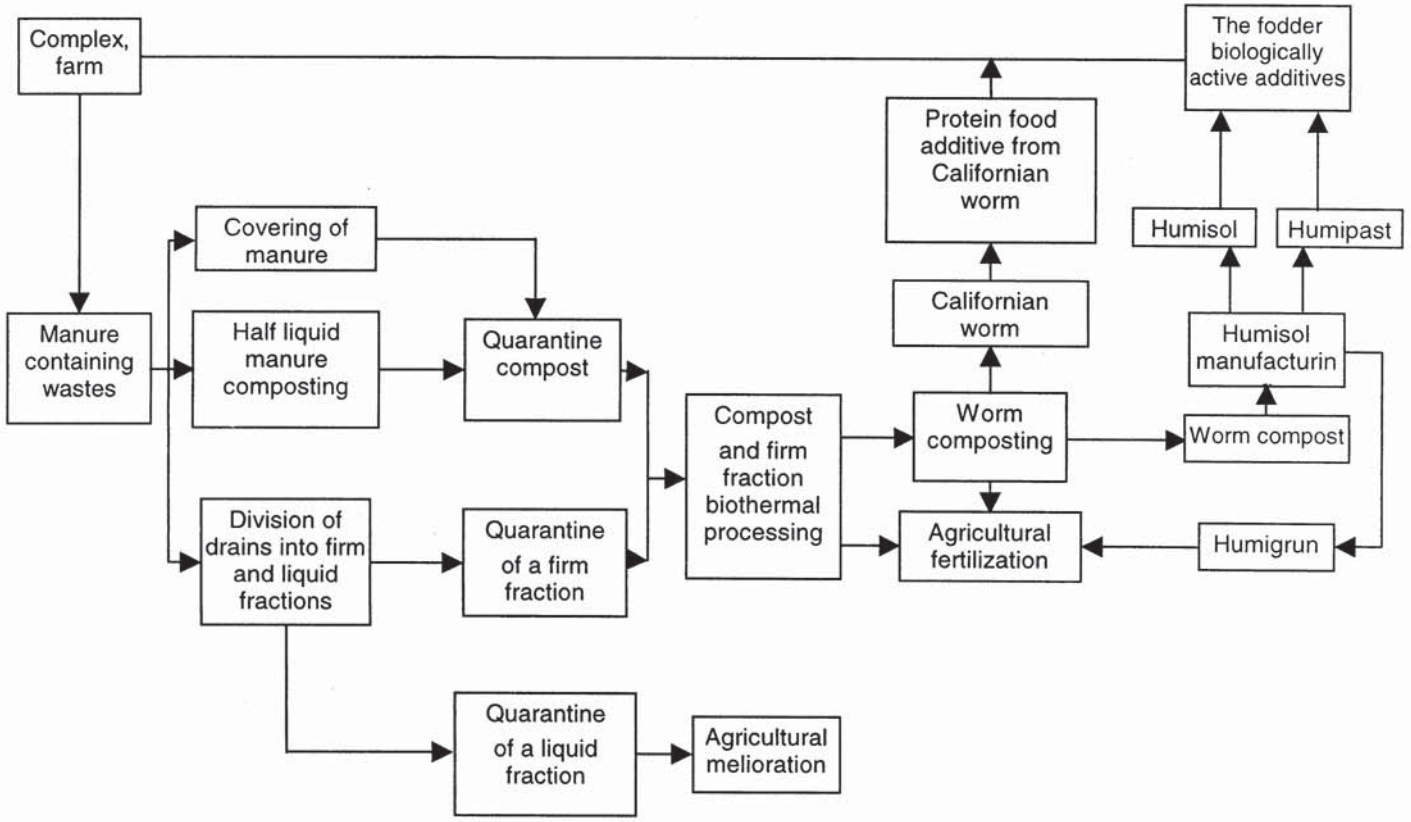
Was carried out in view of our researches development of the technological circuit of preparation to use with reception of organic fertilizers and fodder additives. The check of separate technological processes of the circuit on processing drains on the enterprises for manufacture of pork was carried out. The productivity of devices, which enter into a technological line of preparation of drains, was defined by a volumetric method. For an estimation of an overall performance of devices at the given productivity and constant mode of operations carried out selection mean - mixed of test of initial drains and liquid fraction. For definition of humidity of a deposit, which received from initial drains after its condensation, carried out average-proportional selection of tests of a deposit at its unloading in the dehydration bunker . For definition of qualitative and quantitative parameters of the dehydration process

of a deposit in the dehydration bunker selected average-proportional tests of a firm fraction and filtrate. The parameters of quality of technological process had been defined according to OCT 10.20.8-86. With the use of the multi factorial experiment the optimization of process of reception humisol was carried out. The experience by definition of efficiency of use of the fodder biologically active additive "Humisol" on the feeding of pigs was carried out in the district special breeding farm of Sakhnovschansky district, Kharkov region. On a method of pairs - analogues the selection in control and skilled groups till 9 heads of pregnant sows of large white breed since 54-th day of pregnancy was carried out which received the basic diet balanced on nutrients in identical quantity and according to the circuit of experience: the additives - 10 mg of sodium humate on 1 kg of alive weight (skilled group №2) and 60 mg of humisol per 1 kg mixed food (skilled group №3). Sucking piglets from 10-th till 60-th day of life received the same additives, in the same dozes, that theirs sows, in the structure of the dry prestarters During the first 4 days of experience , sows and piglets had been accustomed to humisol, a doze of humisol had been increased on 20 ml/kg of mixed food or prestarter. Piglets had been weighted at once after birth, on the 21-day's and 60-day's age - up to morning feeding. Piglets were weaned in the age of 60-th days of age. Statistical processing of the received data have been carried out with the use of the software packages Microsoft Excel.

Results and discussion

The technology of processing of manure containing wastes (fig. 1) includes such a processes: processings of drains or semi liquid manure, quarantine of the received products and covering of manure, biothermal processing of a firm part of the wastes of the enterprises for manufacture of cattle-breeding production, partial it with reception worm compost and protein of the additive from Californian worm, received from worm compost of the fodder biologically active additives and use them on the feeding of animals with use of products of processing for fertilizer and agricultural melioration. The industrial check of separate technological processes has shown, that the productivity of division of drains with reception of firm and liquid fractions has made 60 м3 /hour with humidity of a firm fraction 75 ... 78 % and its further processing [6]. The optimized process of reception humisol has allowed to extract from worm compost about 94 % of dry substance. The researches on study of efficiency of use of humisol at pig feeding shown, that total number of alive newborn piglets on the farrowing on control group was 10.22 (100 %),

Fig. 1. - THE CIRCUIT OF MANURE WASTES PROCESSING OF THE ENTERPRISES FOR MANUFACTURE OF CATTLE-BREEDING PRODUCTION



and skilled - 10.56 (103.3 %) echoing group and 11.11 heads (108.7 %) third group accordingly. Average live mass of a newborn pig was equaled accordingly 1.12 kg (100 %), 1.20 kg (107.1 %) and 1.15 kg (102.7 %, P < 0,05). Average weight of a newborn jack, accordingly has made 11.45 kg (100 %), 12.62 kg (110.2 %) and 12.69 kg (110.8 %, P < 0.0.5). Average live weight of a jack for 21-th day of life (average milk productivity of the sow) were 43.16 kg (100 %), 47.70 kg (110.5 %) and 50.95 kg (118.8 %, P < 0.0.5) accordingly on control and skilled groups; the average safety of pigs for the sucking period (up to 60-th day of age) on groups accordingly were 82.2 %; 90.9 and 88.6 % from the total number of piglets which were born alive. Daily average gains for the sucking period on groups were 216.6 r (100%0, 216.6 r (99.9 and 219.5 r (101.3 %, P < 0.10)) accordingly in control and skilled groups. Average alive weight of a jack at the weaning at 60-day's age were 125.14 kg (100 %), 133.41 kg (106.6 %, P < 0.10) and 136.75 kg (109.3 %, P < 0.0.5) accordingly in control and skilled groups. Total number of the diseases on humisol group was reduced twice, at humate group - at 1.53 of time (with 26 up to 17 cases on group). After the period of application of biologically active substances (BAS) at pigs of all skilled groups marked "consequence", which was shown in increase daily average gains in comparison with the control during 2 months after the termination of a summer residence BAS. Greatest "consequence" is marked for humisol and was higher, than control on 340.3 r (or 4.6 %), smaller for sodium humate up to 332.8 r (or on 2.3 %). At the expense of application of biological active substances was in addition received of cattle-breeding production: in the second skilled group 10 dollars on farrowing or 1 dollar on a pig, in the third skilled group 15,6 dollars on farrowing or 1,56 dollars on a pig in comparison with the control.

Conclusion

Thus researches have shown expediency of use of the technological circuit at processing at processing manure drains. The circuit allows to carry out recycling manure drains with reception of nutritious substances for manufacture cattle-breeding and plant production.

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TEHNOLOGIJA DOBIVANJA GNOJA KOJI SADRŽI OTPAD - PODUHVAT ZA PROIZVODNJU U UZGOJU GOVEDA

Sažetak

Kruženje tehnologije u proizvodnji gnoja koji sadrži otpad - poduhvat u uzgoju goveda kao i rezultati njegove potvrde dani su u ovom radu.

Ključne riječi: animalni otpad, tehnologija, dodaci hrani

Primljeno: 10. 5. 2004.