

USE of an ELEUTHEROCOCCUS In CATTLE BREEDING And SWINE-BREEDING

For rising efficiency, alongside with improvement of conditions of the contents and fodder base, it is necessary to improve breeding qualities of animals. The part of the manufacturers at stations of a synthetic insemination is rejected because of a low potency, small volume of an ejaculate with poor qualities of a semen. At the cows diagnosticate infertility, prolate service - period. All above mentioned reduces breeding opportunities of the bulls and cows, reduces terms of their use. With approach of sexual maturity in spermaries of male begin to ripen spermatozoa. The process goes continuously, but the intensity of it depends from physiological condition of an animal. Sexual activity of male, biological full value of an ejaculate (volume, concentration Of spermatozoa, their activity) are substantially defined by albuminous power supply of the getter. Moving of spermatozoa through appendages of spermaries is carried out by the nervous - muscle mechanism, which condition relates in a feedforward with a general condition of an animal, with its nervous system.

Influence of an eleutherococcus on production of a semen of the getters. The first researches on the preadolescent males of white mice have shown, that the introduction of an extract of roots (Брехман, 1960) or leaves of a plant (Кун-цман, 1963) enlarges mass of testicles. The addition in a forage to the bulls milled leaves of an eleutherococcus within 14 days on 20 g on a head per day has reduced duration on time of a sexual reflex per the first days of preparation application, and through 10 - 12 days were increased by(with) volume of an ejaculate (Максимов, 1964). The similar data are received by the author in 1963 - 1964 year, at treating to the bulls of an extract of roots of an eleutherococcus till 20 mls on a head within 14 days. In experiences on pig males have received similar results (Веселов, 1966). The author marked reduction of quantity of pathological spermatozoa in an ejaculate pig males after treating it with a powder of a root of an eleutherococcus in a dose 5 g on 100 kg of alive mass.

The author carries out a series of experiments (4 on the basis of Regional, 1 on Makushinskaya stations of a synthetic insemination of Kurgan area) on influence of a liquid extract of roots of an eleutherococcus on воспроизводительную ability of the bulls of Kurgan breed.

For the first experience have selected till 6 heads of the bulls - getters in experimental (I) and control (II) group. In each group was till 2 bulls with a dropped potency, subjects to a casting out. The contents and feeding of the bulls of all groups were similar. In the preparatory period (from July 1 till July 14, 1962) order the individual account of indexes of quality of production of a semen. In the experienced period (from July 15 till July 28) to the bulls of I group with potable water gave till 20 mls on a head per day of an extract of roots of an eleutherococcus. During an after-action (70 days) carried out the same account, as in first two periods. 574 ejaculates (tab. 1) are investigated.

In indexes of quality of an ejaculate of the bulls of control group there were no appreciable changes in all periods of its account. At the bulls of experienced group in the period of treating it with eleutherococcus marked augmentation of volume of an ejaculate at 12,5 % in comparison with the preparatory period and on 21,4 % in relation to control group. The concentration of spermatozoas in 1 ml of an ejaculate at the bulls of experienced group on 11,5 % was higher, than at control animals. Total of spermatozoas in an ejaculate of the bulls in the experienced period in I group was higher, than in II, 35,4 % and on 22,8 % in comparison with the preparatory period. During an after-action the reaction of an organism the stimulated bulls has not concluded.

Volume of an ejaculate at the bulls of I group in this period was on 15,7 %, the concentration of spermatozoas on 5,8 %, and their quantity on 15,3 % is higher, than in II to group. The analysis on week terms of observations has shown, that volume of an ejaculate at the bulls of experienced

group has increased per the first week (fig. 1). With the termination{*discontinuance*} of a summer residence of an eleutherococcus at the bulls the quantity{*amount*} of spermatozoas in an ejaculate was a little declined, but was higher, than at animal control group. Secondary augmentation of quantity{*amount*} of spermatozoas have noted on 8 - 12 weeks of experience. Thus is traced two-phase of action of a drug on quality of a semen of the bulls (fig. 2). In the first phase there is rising total amount of an ejaculate soon after application of an eleutherococcus. In second, which begins through 8 - 12 weeks, the quantity{*amount*} of spermatozoas, their concentration in a unit volume raises.

The second experience have lead{*carried out*} from October 18, till January 23, 1963. In experienced (I) and control (II) of group has come till 2 bulls with a dropped potency from the first experience and until 2 bulls with a normal potency, which were not earlier under observation. The feeding and contents of the bulls of all groups was similar. Fed them on norms recommended for the breeding bulls. The bulls I of group received with potable water till 20 mls on a head per day of a liquid extract of roots of an eleutherococcus within 14 days in succession. The control group стимулятора did not receive. Investigated 229 ejaculates. At the bulls I of group volume of an ejaculate in the experienced period has increased on 10, 6 % in relation to the preparatory period and on 18, 5 % — in relation to the control. The bulls of experienced group having a dropped potency, were maintained by(with) 3 years, and control group cast out.

The following experience have lead{*carried out*} on the bulls of both groups of the first experience in 100 days after termination{*ending*} a summer residence by him{*it*} of an extract of an eleutherococcus. In each group has come till 4 bulls with a normal potency. The feeding and contents of animal all groups was similar, but in potable water of the bulls of experienced group added within 14 days till 20 mls on a head per day an extract of roots of an eleutherococcus. The period of an after-action proceeded 60 days. In total investigated 265 ejaculates. The indexes of production of a semen at the bulls of control group in all periods of the account had no sharp fluctuations. At the bulls of experienced group in 3 weeks volume of an ejaculate has raised{*increased*}. The quantity{*amount*} of spermatozoas in a nem has increased under the attitude{*relation*} to the preparatory period on 6, 3 %, and in relation to the control 6 % on the seventh week of the account was higher on 12.

The experiences on the bulls have shown efficiency of an eleutherococcus: volume of an ejaculate, quantity{*amount*} of spermatozoas in a nem has increased. A similar picture have noted at introduction to the bulls of Oxytocinum (Березнев, 1965). Consider{*count*}, that there is intensifying a secretion of Oxytocinum by a pituitary body, which will activate work of muscles of spermaries, протоков of spermaries and seminiferous tubulus. The augmentation of quantity{*amount*} of spermatozoas in an ejaculate should be attributed{*related*} at the expense of consuming rising of nutritious substances of a forage, improvement of a metabolism in an organism of stimulated bulls.

The stated assumption of augmentation of a retention of nitrogen of a forage, activity of some enzymes of protein metabolism at chickens stimulated by an extract of an eleutherococcus, is based on the data received{*obtained*} Пономаревой (1972). In experiences on the hens (Ляпустина etc., 1971) rising a level of the contents of nitrogen and nucleic acids in genesial bodies of layers stimulated by an extract of roots of an eleutherococcus fixed. In a liver and blood of chickens after application of a drug rising the contents of nitrogen and total of protein (Зориков, Ляпустина, 1973) is marked. Putting off{*taking out*} by an eleutherococcus of sexual inhibition at the bulls - manufacturers informed Семенов (1972).

Hence, for rising quality of production of a semen it is expedient to the bulls during 20 days to give an eleutherococcus in the form of an extract till 20 mls or in the form of a powder from leaves or root of a plant on 20 — 30 r on a head per day. All drugs can be brought in to a forage, and an extract besides to give with potable water. Repeatedly drug is expedient for applying after a break in 3 — 4 months.

Influence of an eleutherococcus on productive and genesial qualities of the cows. The lactic efficiency of the cows is defined{*determined*} by quantity{*amount*} of milk, received from them, and also his{*its*} greasiness. The reproductive function is defined{*determined*} for arrival the cow in the next hunt and fruitful insemination her{*it*}. At some cows these terms are removed on 2 — 3 months, that extends "«прохолост", reduces lactic efficiency of the cows, reduces quantity{*amount*} of a received get for calendar year.

The certain role in it is played by(with) a pathology of sexual bodies at the cows, and also nutritional reasons. On the data of inspection of the cows on Far East fixed, that 39 % of the cows remain farrow, from them 29,3 % in connection with перегулами and 9,7 % because of absence of sexual reflexes within three and more postnatal months. To the farrow cows (252 heads) within 10 days gave on 30 r per day the crushed root of an eleutherococcus moistened with water, in result within the first 34 days in a hunt 94,8 % of a population{*head*} has come. At the first insemination fertilized 80,6 % of a population{*head*}, at second — 13,8 % (Москаленко, 1969). Feeding the cows on 20 r on a head of a powder of leaves of a drug within 5 days promoted to that from 20 cows in a hunt came 13, or 65 % of a population{*head*}, in control group — 6 heads from 20, or 30 % of a population{*head*}. Fertilized in experienced troupe 11 heads, or 84,6 % of the cows who have come in a hunt, in control — 5 heads. Feeding to the cows of a forage containing oxidated Adepses and 30 r of a powder of leaves of an eleutherococcus, has improved reproductive ability of the cows of the given group similarly by what on a background of the same feeding received reproduction vitamin. The viability of a get in groups receiving an eleutherococcus and reproduction vitamin, was higher, than at analogues of control group (Максимов, 1972). The antioxidizing action, observable by the author, of an eleutherococcus on the cows proves to be true by the data on antiradical property of glycosides of an eleutherococcus received{*obtained*} Тхор, Тараненко etc. (1963). On the data Семенова (1972) feeding to the cows of a powder of leaves of an eleutherococcus in pause period on 25 — 30 g per day within 15 days pruned the period of weeding of patrimonial ways from left particles on 3 — 4 days, accelerated on 4 — 5 days term of closing of nick of a uterus, pruned on 14 — 19 days the service - period. Good development of the calves receiving till 5 mls of an extract of roots of an eleutherococcus, has noted Both. And. Брехман etc. (1965).

On the cows of Kurgan breed on base Educational pilot farms Kurgan CXII the author with the employees has lead{*carried out*} experience, for which in 5 days after a calving selected of cows - analogues. With an autumn calving (with 1. X on 30. IX) in experienced and control groups was till 19 heads, with a winter calving (with 1. I on 28. II) in experienced group 20 cows, in control — 17, with a spring calving (with 1. III on 21. IV) — 11 and 14 heads accordingly. In total in groups was till 50 cows - analogues. All conditions for the cows of both groups were similar. Since 5-th day after a calving and till 18 day after him{*it*} by an experienced animal have drunk out with water a liquid extract of roots of an eleutherococcus till 20 mls on a head per day. On 5 — 15 and 25 day from a beginning of a drinking up of an eleutherococcus carried out{*spent*} the account of temperature, pulse, respirations, and in a peripheric blood defined{*determined*} a haemoglobin content, erythrocytes, leucocytes, in Serum of a blood — the contents of protein, in contents of cicatrix — quantity{*amount*} of infusorians. The first 4 months after a calving monthly carried out{*spent*} control milk pumping, defined{*determined*} greasiness of milk. Regularly record behaviour of the cows, term of arrival them in the next hunt, fruitfulness of an insemination, term of the subsequent calving and mass of the newborn calves.

The analysis of the received{*obtained*} data has shown, that at the cows of both groups under the contents in a blood of a haemoglobin, erythrocytes and leucocytes of differences did not observe. On the fourth month of experience the augmentation of the contents of protein in Serum of a blood and on 7,6 % above in contents of cicatrix quantity{*amount*} of infusorians at the cows of experienced group is marked on 1,1 %.

On lactic efficiency the cows differed with autumn. After complete 15 weeks of a lactemia from each cow of experienced group have received till 1536 kg of milk by greasiness 3,54 %, from the cows of control group of 1412 kg and 3.42 % accordingly. In recalculation on one-percentage milk from the cows of experienced group is received{*obtained*} till 5448 kg, from the cows of control group till 4839 kg (fig. 3).

At the cows of a winter calving stimulated by an extract of an eleutherococcus, the difference in greasiness of milk in comparison with the control has made 0,07 %, spring — 0,08 %. In a drawing 3 the curve of a yield of milk in recalculation on 1 % is shown at a stimulation of the cows of an autumn calving by an extract of roots of an eleutherococcus since the second week of a beginning of experience. The termination{*discontinuance*} of a summer residence of a drug to the cows has not changed an index of total of milk to the cow, his{*its*} greasiness, which in all terms remained on more high level, than with the cows of control group which was not receiving of a drug.

For 300 days of a lactemia (at the cows of all three seasons of researches) on the average on feeding cow on experienced group was received by(with) 3508 kg of milk, control 3006,2 kg. For the same term from the cows of experienced group is received{*obtained*} till 137,4 kg of lactic Adeps, from the cows of control group till 110,9 kg.

The service - period of the cows of experienced group has made 62 days, control — 69 days. Duration on following{*next*} стельности 281 and 285 days accordingly. In alive mass of the newborn calves of an essential difference between groups is not revealed. Mass of heifers in experimental group of the cows made 32,1 kg, control — 32,5 kg, бычков — 34,7 and 34 kg accordingly.

Hence, the stimulation of the cows by an extract of an eleutherococcus raises a total yield of milk, his{*its*} greasiness, reduces term of arrival of the cows of experienced group in a hunt to 7 days (on the data Семенова on 5 — 10 days), term of the service - period on 14 — 29 days. The economic efficiency of a stimulation of the cows by an eleutherococcus makes from 22 up to 37 roubles on an animal (Семенов, 1972). ' On the data of the author, on a stimulation one cow 280 mls of an extract of roots of an eleutherococcus of cost 2.24 roubles are spent. The padding collecting of milk makes 27 litres on the cow, that completely pays back the charges on a stimulation.

By zoovetirinary rules for state farms and collective farms. Khabarovsk territories and Byelorussian SSR use of drugs of an eleutherococcus (extract from roots with a rootstock, powder of leaves and root of a plant) for large horned cattle during 14 — 20 days is stipulated with the purpose of rising lactic efficiency and stimulation of function of reproduction at the cows and bulls - manufacturers.

Dose of an extract — 20 mls, dry drugs — 20 — 30 г on an animal. Give them with a forage, and the extract can be given with potable water.

Application of an eleutherococcus in a swine-breeding. One of the earliest branches of animal industries — a swine-breeding. The pigs quickly react to stimulators of a various nature and well pay them. Concerning drugs of an eleutherococcus there are separate reports that at rats they enlarge the contents of a hydrochloric acid in contents of a stomach (Мещерская, 1962), enlarge consuming of a forage (Шулятьева etc., 1963). However action it{*him*} costs{*stands*} in direct dependence on a dose of a drug. By experiences. Н. Ратимова (1962) fixed, that the raised{*increased*} dose (5 mls of an extract of roots of an eleutherococcus on 1 kg of alive mass) at a pig - сосунов has not raised{*increased*} привесов, whereas the summer residence 1 — 2 mls on 1 kg of alive mass has increased привесы by 237 %. At use 5 mls of an extract of roots of an eleutherococcus on 1 kg of mass have not received a positive take, and the application 5 г of a powder of a root a plant on 100 kg of alive mass has given follow-up to the control привес in 13 % (Pots etc., 1963).

In experiences Веселова (1966) on the boars - manufacturers with alive mass 226 kg the application of a powder of a root of an eleutherococcus in a dose 5 г on a head has

raised{*increased*} a sexual potency, has increased volume of an ejaculate by 25 %, concentration of spermatozoas on 47 % in relation to the control. At 10 hours the fastness of spermatozoas of boars of experienced group to influence by a cold has raised{*increased*}.

Influence of an eleutherococcus on body height and development of pigs. The author carried out{*spent*} experiment on a Pig farm of an Educational pilot farm Kurgan СХИ for finding - out of influence of an extract of roots of an eleutherococcus entered into an organism of a sow, on body height and weights addition of pigs - сосунов. In experienced group was 32, in control — 31 pigs of one-day age. To sows after a farrow within 10 days gave with potable water till 5 mls on 100 kg of alive mass of a drug. Within the first 30 days of cultivation of pigs weighed each decade. The account has shown, that the eleutherococcus has not rendered influence on weights addition of pigs, but the safety them in experienced group was higher, than in the control on 4, 8 %.

On a Pig farm of collective farm by him{*it*}. Ленина of Kurgan district of Kurgan area have lead{*carried out*} experience. For this purpose have selected 2 groups of pigs. In I to group 33 heads with average alive mass 2371 g, in II (control) — 35 heads with average alive mass of 2385 were (experienced). The sows of experienced group of pigs received with a forage an extract of an eleutherococcus till 5 mls, and pigs till 4 mls on 100 kg of alive mass and current 10 days. The control group of pigs and sows of an eleutherococcus did not receive. The feeding and contents of animal both groups was identical. The pigs in groups were from uterus of one age. Observation order up to taking off piglets. The safety of pigs I of group has made 100 %. II — 91, 4 %, daily average weight addition 225 g and 201 r accordingly. The sows which have received an extract of an eleutherococcus, in the period ма аууыртп зпндыеы Fertilized. In control group one sow has appeared "«throwaway" up to the end of observation. Hence, the extract of an eleutherococcus promoted reduction of term between farrows. The stimulation by an eleutherococcus of pigs - suckers has enabled to receive higher weights addition and to keep completely population{*head*} up to take off.

Influence of an eleutherococcus on body height and weights addition of the pigs during a stall-feed. On base Shumikhinsky feeding state farm of Kurgan area the author tested influence of an extract of roots of an eleutherococcus for weights addition of the pigs during their 30-day's stall-feed. In experienced and control groups have selected till 50 heads of pigs - analogues. Into a forage of animal experienced group entered till 5 mls on 100 kg of alive mass of an extract of roots of an eleutherococcus within 10 days. The ration of both groups contained: 25 % of barley, 12 % cotton press cake, 16 % milled viki, 16 % of by-products of grind of a grain, 28 % of bran, 2, 9 % of a chalk and 0, 1 % of salt. A day time dose of a drug on group admixed with a forage, which displayed on feeders. The weight addition of each pig of experienced group for all period of observation has made 19, 2 kg, daily average weight addition 640 g, control group 15, 8 kg and 526, 6 G accordingly. The general{*common*} padding weight addition of the pigs of experienced group has made 170 kg. In experienced group the safety of a population{*head*} was 100 %, in control — 98 %, or is lower 2 %.

External display of a condition of health of an animal, work of Ferri lactases of the digestive device and digestion as a whole is of appetite. At pigs of appetite is shown by rate and completeness eating of a forage. The timekeeping of rate eating of a forage by the pigs of both groups has shown, that the animals receiving an extract of an eleutherococcus, more completely, highly and are faster ate a forage. In 10 days the ambassador of a beginning of experience or at the end of the period of feeding a forage with an eleutherococcus in experienced group for one minute animal ate 122 g of a forage, in control — 113 g, in 30 days — 375 g and 322 r accordingly. More complete eating of a forage by the pigs of experienced group was reflected and in final mass, which was higher, than at analogues of control group which was not receiving of a drug.

Thus by experiences on 120 pig - suckers and 100 pigs during a stall-feed fixed, that the extract of roots of an eleutherococcus in a dose 4 mls on 100 kg of alive mass to pigs - сосунам and till 5

mls on 100 kg of alive mass to the pigs and sows entered into a forage 10 — of 14 days, is enlarged by(with) safety of a nursing, daily average weight addition. It is explained to more complete поеданием of a forage, best mastering of nitrogen of a forage by an organism of animals receiving an eleutherococcus. Besides is noticed, that the sows receiving an extract of an eleutherococcus, came in a hunt and more fruitfully faster fertilise to receive per one year not one, and 1,5 - two farrows.