

TuMa - The production models for more productive agriculture

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In order to secure the income of the farmers, HANKKIJA has for many years been developing programs aiming to increase the profitability of farming and livestock husbandry.

These programs are called TuMa-production models for more productive agriculture. For the moment there are three of them : The farmer's TuMa for plant cultivation, Harvest Service for the marketing of the harvest, and the Expert's TuMa for livestock husbandry.

The TuMa-production models are based on the needs of the separate farms. They provide information for decision-making so that at each stage the farmer will be able to choose the most productive alternative for working. The farmer will receive information in a concentrated and easily available form.

The Farmer's TuMa

In autumn 1980, the first part of the TuMa-production models, the Farmer's TuMa, was published. It is a program in seven stages, each stage being joined to one another. The Farmer's TuMa is a comprehensive way to examine plant cultivation, beginning with soil analysis and ending in the marketing of the harvest.

Objectives

The TuMa program aims at the right and more effective use of inputs and, through that, to a higher profitability of crop growing in general. The concrete target of the program is to increase the net profit of an individual farm's crop husbandry by at least 300 Finmarks per hectare. Of this sum, 200 marks is composed of the six first steps of the program and 100 marks of the seventh step, i.e. the Crop Service.

The TuMa program concentrates the power resources of HANKKIJA and the interest groups (the agricultural centres, material suppliers and Viljavuuspalvelu oy, which provides soil testing service) and improves the expertise and working standard of its own staff.

Contents

The TuMa program is a logical chain of measures, in which each individual measure has an effect on the next one. When the farmer follows the recommendations of the program, he is himself able to set higher targets for his cultivation concerning both quantity and profit. In case one or several measures of the program have already been realised on the farm, the farmer may join the program at a suitable stage.

The first six steps of the TuMa program consist of the planning of cultivation and actual cultivation :

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1. The first step is SOIL TESTING, by means of which the growing qualities and the nutritive state of the soil are being surveyed. The farmer can order a soil test either from HANKKIJA or from an agricultural centre. These also instruct the farmer in the interpretation and use of the results.
2. The second step is LIMING. Soil testing shows the need for liming. HANKKIJA has a liming service that operates the year round. The lime is spread at a point of time that is most convenient for the farm.
3. The third step consists of the choice of plant species and variety. The farmer can choose the species and variety best suited for his field by means of HANKKIJA'S variety test and variety chart. The variety test is a computer program developed at HANKKIJA'S Plant Breeding Institute. It is based on information gathered from the official variety tests carried out in Finland during the last 12 years. The variety test also gives liming recommendations.
4. The fourth step contains RIGHT FERTILISING AND PLANT PROTECTION. The information of the nutritive state of the soil that is obtained by soil testing makes it possible to give instructions concerning choice of the right type of fertiliser. The right plant protection used at the right time means considerable increase in crop.
5. At the fifth step, a COMPLETE CULTIVATION PLAN is drawn. The cultivation plan is a program for the purchase and use of inputs separately for each farm. If it is put into practice effectively, it offers the possibility to find out which amounts should be purchased in order to cover the actual need, and consequently it facilitates the right and more efficient use of the inputs. When the plan has been made well in advance purchase benefits can be made use of in full.
6. At the sixth step, the production model ends up in SYSTEMATICAL PURCHASE OF INPUTS. On the basis of a carefully drawn cultivation plan, the farmer can easily purchase the right inputs at the right time. He can make use of the benefits of seasonal prices.
7. The seventh step of the TuMa program is the MARKETING OF THE CROP. A crop marketing model was made of this, suiting different conditions prevailing on individual farms. This model was called HANKKIJA'S CROP SERVICE.

HANKKIJA'S Crop Service

HANKKIJA'S Crop Service, the 7th step of the TuMa program, is a crop marketing model developed for the members of the agricultural co-operatives. It is constituted of HANKKIJA'S solutions, which help the farmer in the handling and marketing of his crop.

HANKKIJA'S solutions comprise a mode of action and services planned for the handling and marketing of the crop, and they have now been compiled by the Crop Service into one entity.

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Alternative measures are being offered for different crop marketing phases. These make it possible to raise the marketing value of the crop and these obtain the best possible result. The aim of the Crop Service is to increase the net profit by at least 100 marks per hectare.

Benefits of the Crop Service

The farmer can benefit from the Crop Service by joining it and making use of its services. Such benefits are :

1. A WRITTEN CROP MARKETING GUARANTEE which means that the farmer can feel secure in planning the cultivation and the marketing of his crop in the way most convenient from the farmer's point of view - each year independent of the quantity and quality of the crop.
2. INFORMATION SERVICES, which help the farmer in making better decisions in planning cultivation, harvesting and the use of crop. These services include variety tests, grain analysis and weather and falling number services.
3. PRIORITY RIGHTS, among which are :
 - the priority right of cultivation contracts concerning restricted plants,
 - the priority right of novel varieties or seeds of which there is otherwise a limited supply,
 - the priority right of limited grain services, such as the possibility of drying grain at HANKKIJA'S grain terminal or contract drier.
4. SPECIAL BENEFITS, which can be obtained, for instance, by storing or delivering grain in full lorry loads. The farmer is also entitled, free of charge, to have variety tests carried out according to the amount of grain he has delivered.
5. ADVANTAGES OF CONTRACT MARKETING :
 - accounting and delivery times which correspond to the needs of the farm,
 - coverage for the farm's investments,
 - certainty about the current price of the day when the grain is sold,
 - cost-saving delivery modes. The saving comes to the farmer himself.

In brief, HANKKIJA'S Crop Service is a marketing model which

- covers all the various stages of crop marketing,
- is adaptable for different circumstances on individual farms,

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- is based on advance planning of the marketing,
- gives instructions about modes of action that save costs,
- improves the profitability of the farm.

The 7 steps of TuMa

- 1 Soil testing
- 2 Lime spraying
- 3 Variety test for the selection of plants
- 4 Proper fertilising and plant protection
- 5 Complete cultivation plan
- 6 Planned purchase of agricultural supplies
- 7 Crop marketing

The goals of TuMa-program

- Aims at the correct and more efficient use of farming supplies.
- The target is a 200 mark improvement in the producer cost margin per hectare.
- Provides for increased planning and more comprehensive way of thinking in the trade of agricultural supplies.
- Combines all stages of the plant cultivation production process into an action chain in which plantbreeding and experimental know how are combined with agricultural experience from different branches.

HANKKIJA'S Crop Service

Step 7 Marketing model for more productive agriculture means to the farmer :

- Answers to all problems in the varying stages of crop marketing.
- Adaptive solutions to changing circumstances on separate farms.
- Making marketing plans in advance.
- Ways of acting which give lower costs.
- Increasing profits.

As a member of HANKKIJA'S Crop Service the farmer gets benefits and special advantages :

1. HANKKIJA takes responsibility for buying the farmer's crop also in a state of overproduction.

2. Always the price of the day.
3. Possibility to use ways of acting which lower costs.
4. Special bonus when storing crops in his own stores or selling grain in full truck-loads.
5. Priority rights to get limited commodities and cultivate special plants.
6. Information service :
 - Variety tests
 - Grain analysis
 - Information of falling numbers
 - Weather reports

The Expert's TuMa for piggeries and poultry-farms

In the beginning of 1982, the Expert's TuMa was published. This is a production model aiming at a better profitableness for swine husbandry and poultry farming. The Expert's TuMa model in three stages includes testing of the production room of the animals, and following-up of feeding and production. The first stage of the production model comprises egg and pork production. Later this year, the Expert's TuMa will also be applied to cattle farms.

The aim of the Expert's TuMa-model is to increase the profitableness of livestock husbandry through measures resorted to on each individual farm. The starting point is to have an animal stock of high quality to produce according to its abilities. This is achieved by improving the external circumstances of production, by utilizing the newest knowledge concerning feeding and by intensifying the follow-up of the production.

Mapping of the circumstances by using the Expert's Tests

An essential part of the Expert's TuMa production model is the testing of external production circumstances. HANKKIJA'S feed agents have at their disposal instruments for the necessary measurements. In piggeries and poultry farms measurements are carried out as to the relative humidity of the air, the velocity of the air current, the ventilation, the proportion of noxious gases in the air, the temperature, the illumination and the amount of dust. All these are factors which affect the contentment of the animals, and thus also the production.

The results of the measurements are compared with the optimum values. For comparison, a circle describing the circumstances has been drawn, which clearly and simultaneously shows the deviations from the optimum values.

For different circumstances factors the optimum ranges are defined by utilizing official standards, experts within the branch and literature. By extensive test measurements the usability of the instruments as well as the correctness of the optimum ranges has been confirmed.

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Most of the circumstances factors are easy to regulate so as to be in accordance with the optimum range. The results are seen as an immediate improvement of the production.

Feeds and feeding

The correcting of the deficiencies which have occurred in the Expert's tests provides an opportunity of utilizing the feeds to the full. Correcting the circumstances is, however, not enough, but also methodical feeding and accurate rationing is needed.

The newest knowledge concerning feeding is available for the farmer through HANKKIJA'S feed programs : Tipu-feeds for egg production and Nasu-feed for pigs. By using the cereal analysis service, the farmers can have the nutritive value of their feed grain analysed for the making of mixed feed.

HANKKIJA provides the fattening piggeries with tables and cards of daily rations, by means of which it is easy to carry out an accurate feed rationing in each individual box.

Follow-up

The Expert's TuMa-production model provides the farmer with the means for follow-up of the production. By using the Nasu-analysis intended for piggeries, and the result-checking form intended for the poultry farms, it is easy to estimate the profitableness of the production tight up to the contribution margin.

The production model idea emphasizes the importance of follow-up. The follow-up gives accurate information about the present situation, brings up things which are in need of improvement, and shows the effect of the improvements made.