

Development and marketing of herbicides in developing countries

Sampan Campiranon

Monsanto Thailand Limited, 2 Silom Road, 17th Floor Silom Center Building, Bangkok 10500, Thailand

Summary

The development and marketing of herbicides in developing countries are unique and strategies that have proved successful elsewhere may not guarantee the same success in developing countries. The popularity of herbicides together with the shortage of labour have caused a tremendous increase in herbicide usage, and herbicide manufacturers now pay more attention to the developing countries. Strategies for the development and marketing of herbicides have been implemented to ensure short term and long term success.

Introduction

Not so long ago, hand weeding was very common in developing countries. Agriculture has changed a lot during the past 10 years with less people farming and more people moving into towns to work in the factories. At the same time, a variety of herbicides have been commercialized and have proved more effective, convenient and less laborious.

Most herbicides used in developing countries are imported from manufacturers in well developed nations where crops, climates, practices and farmers' backgrounds are totally different. To optimize mutual benefits of both farmers and foreign suppliers, the development and marketing of herbicides must take into account the local economy and needs of farmers in the developing country.

Agriculture in developing countries

The agriculture in developing countries can be categorized as follows:

1. Mostly family type small holders

The land area owned by farmers is relatively small such as 1-2 ha for rice or 10-20 ha for rubber or oil palm. The labour force is mainly

from the family and the annual income generated is basically adequate for one year's living. The investment in land or farm equipment is relatively low.

2. Big estate development on some crops

A large amount of money has been invested in crops such as rubber, oil palm and tea. New technologies for growing, maintenance and harvesting have been introduced. The management is an estate-type business run by well educated and experienced managers. As far as the size per holder or estate is concerned, the estate type farm is much bigger than the family-type small holders.

3. Extensive cultural practice

For most small holders, cultural practices, such as land preparation, are not well managed. Even though crops can grow under such situations the maximum yield may not be achieved. Weeds are a key problem under poor land preparation. Good land preparation or clearing is a necessity for long term success.

4. Less mechanized farming

Land preparation or crop harvesting can be done by people, animals or small engine tractors. Large and sophisticated equipment cannot be deployed because of economic reasons. Farming is a laborious process and often faces serious problems when labour shortages arise.

5. Pesticides become more popular

Pesticides, whether they are insecticides, herbicides or fungicides, are popular and their use has increased. Most of them are imported. The popularity of pesticides can be attributed to their effectiveness in controlling pest problems in addition to the benefits gained by farmers from growing healthy crops. Prices of most pesticides are affordable and they are simple to use. Pesticides are normally used for both preventive and curative purposes.

Herbicide markets

Of the pesticides currently used in developing countries, herbicides play one of the most crucial role in agricultural development.

Weeds have long been one of the most important problems. In developing countries, the herbicide markets can be divided into two segments based on size and value as follows:

1. High end market

This market refers to medium/large plantations or high value small holders. The plantation managers or farm owners are knowledgeable and cost/benefit oriented. They have high purchasing power and always expect the best long term results.

2. Low end market

This market refers to most small holders with limited purchasing power. They are cost conscious and willing to consider the cost/efficacy trade-off concept. An acceptable control level set by this market is lower than that set by the high end market. The immediate impact of herbicides on weed control are of most interest.

Strategies of herbicide development

To optimize interests at all levels, herbicides are thus developed according to the needs in each segment.

For the high end market, development focuses on the premium features of weed control. These features include the broad spectrum of control, burndown enhancement and rainfastness. The herbicide so developed should not pose a potential threat to humans and the environment. High unit activity herbicides are favoured.

For the low end market, herbicides that provide optimum control are developed. As for high end markets, the environmentally friendly properties are desirable. Furthermore, herbicides for this market should be easy to use. Formulation and/or packaging must be designed to make the product easy to use under field conditions. One small pack/sachet of dry formulation per 18 L of water is good example. Farmers then only have to pour the herbicide from sachet into an 18 L capacity spray tank, mix well with water and spray. One can imagine the technical difficulty if the recommendation was 5.2 gm per 10 L of water.

Steps of herbicide development

1. Clarifying needs

The needs of farmers must be first identified. If the currently commercialized products can

not fulfil their needs, then new products must be developed. New products can be newly synthesized compounds or a modification of the currently commercialized products.

2. In-house testing

Initially, the main emphasis is on weed control efficacy and crop safety. Acute-toxicological data is also generated at this time. If a technical fit is established, testing then focuses on the environmental impact so as to ensure human safety, no food residues and no ground or surface water contamination. Normally the efficacy and crop safety data are carried out by local representatives while the toxicological and environmental data/issues are conducted by parent companies.

3. Official testing

The official testing, as named, is conducted by the government officials. The main purpose is to gain their support for product registration, labelling and recommendation. Product efficacy and crop safety are the main focal points. For toxicological and environmental issues, the information produced from the company is acceptable.

4. Product registration

The products commercialized in most countries, if not all, must be registered. The registration requirements or procedures vary from country to country. Whatever the requirements, the ultimate aim is to maximize the benefits that farmers derive from products while minimizing the negative impact on crops, humans and the environment.

5. Market test

Prior to full commercialization, a market test is normally conducted. An effective marketing program must be designed to suit both product and market. In general, labelling, packaging, demonstration plots and training are major concerns. The testing area is carefully screened and best selected according to the criteria set for that product, such as small holders of the rice market. The area must be big enough to provide accurate information, but should not be too big to avoid loose interfaces between sales forces and farmers. At this stage, the technical and marketing men have to work closely to ensure success. All complaints must be immediately investigated.

6. Full commercialization

After a successful market test, a full commer-

cialization follows. Most of this work will be carried out by the marketing team while the participation from the technical staff is reduced.

Marketing of herbicide in developing countries

One of the key objectives of marketing is to optimize income through strategic pricing and gaining the largest market share. To achieve this, the following exercises are implemented:

1. Coverage maximization

The distribution of herbicide varies from country to country. Normally a single distributor is appointed when the country is small or the market is less complicated. For bigger area or complicated market, more distributors are appointed. Each distributor selling the same product may use the same brand name, or different brand name.

2. Competitive incentives at all levels

Incentives are well provided at all levels among farmers, sub-dealers and dealers to create demands (both to sell and to buy) in the market. It is important that the incentives offered are competitive with those given by competitors.

3. Strong promotion

Promotion is the basic practice used for marketing purposes. Promotional programs range from demonstration plots, leaflet, tin plate, radio and TV commercials. No matter what medium is used, it must be effectively conveyed the message to the target groups.

4. Netback optimization

Since the competition in the herbicide business is very tough, manufacturers/traders have set the cost of goods sold at an optimal level. The smaller margin gained is acceptable since it is offset by the bigger volume gained.

5. Flat distribution channel

To provide sufficient margin for retail outlets, the distribution channel from suppliers to retailers must be flat. It is not surprising that many manufacturers have switched to direct distribution.

Problem of herbicide development and marketing

1. Too many formulation options to cope with diversified markets

Due to diversified needs coupled with eco-

nomical reasons, many herbicide formulations are developed using the same active ingredients with modified active ingredient loading or with package mixtures.

Numerous herbicide formulations eventually result in farmer confusion and high cost of doing business for the manufacturer/distributor.

2. Inadequate funding for both registration and enforcement

Even though the regulatory controls are tightening, the implementation and enforcement can not be put into full effect yet due to inadequate funding and/or staffing.

3. Farmer's education

Most farmers have limited herbicide knowledge. Hence, herbicide misuse is common such as wrong weed or crop identification or the wrong rate or even the wrong herbicide used.

Intensive training programs for farmers are normally conducted by government officials and the industry to enhance user's knowledge but training does not extend to all farmers throughout the country.

4. Price competition

Since there are many identical or similar herbicides in the same market, traders have to fight hard to gain the largest share. Price cutting is one of the key strategies commonly used.

Conclusion

The developing countries are considered now as a dynamic, fast growing economic region. Countries are becoming industrialized and there is no doubt that agriculture will be changed. There will be fewer people engaged in farming and there will be an increased demand for high quality food.

To meet these needs, products developed for these countries must firstly meet the farmers' needs, be cost effective, provide good weed efficacy and crop safety and must not pose a threat to human safety or to the environment. These products should be offered in appropriate sized packages at an affordable price and they should be clearly labelled so that the recommendations are easily understood.