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FACT SHEET

Integrated Pest Management

Peter Burgess, Integrated Pest Management *April 2002*

Integrated pest management, or IPM, is a sustainable approach to managing pests. It involves a detailed pest management plan customized for individual fields to control pests using all possible control methods. It combines biological, cultural, physical and chemical approaches to minimize economic, health, and environmental risks, while optimizing quality and production

An IPM program consists of five main components: 1) Knowledge: an IPM system requires the grower to know more about the crop they are growing, along with all the possible pests and possible control methods which could limit chemical inputs; 2) Record keeping: when done correctly provides a clear history of specific field management and species populations, this allows the producer to make informed decisions about management strategies and provides a clear and traceable production history for the consumer; 3) Flexibility: the grower must be able to adapt to changing conditions like site specific herbicide applications and the implementation of new and safer control techniques to help you adjust to changing pest problems and changing market demands; 4) Monitoring: the grower must keep track of insect, disease and weed distributions along with crop health, through simple scouting and sampling techniques; and 5) Action Thresholds: the IPM system uses pesticides, but only when pest levels get to a point where a financial loss would be greater than the cost of the pesticide application.

So, why should growers use IPM? It can save you money! With the increasing costs of chemical products, applying these products only when required reduces farm expenditures, in the long run. Environmental concerns and food safety issues are becoming the most important problems facing producers today. IPM directly addresses these issues through the implementation of a responsible and minimized risk system. IPM systems are preventative in their approach to major production problems. For example, a fully implemented IPM system will minimize the risk of the development of resistant weed populations. IPM systems also directly impact long-term sustainability of farm practices.

Still, many growers wonder if the effort required to develop a fully integrated pest management system is justified. Researchers and extension workers from across North America claim that an IPM system will save the producer money and reduce environmental impacts, through decreased inputs and improved production and quality. They also claim crop sustainability will be improved with this integrated approach. However, theoretical modeling and advice from a desk in an office building are not well received by most producers. Most producers need proof in their hands that a management strategy will work.

Here are some examples of a wide range of IPM practices from throughout North America that have improved both crop sustainability and the producer's bottom line.

- Controlling weeds in Ohio's soybean fields typically costs $30 per acre. Research in that state showed smaller, more timely pesticide applications coupled with the use of cover crops cut chemical use by more than a quarter while maintaining adequate weed control.
- An epidemic of PVY was averted in Minnesota potatoes when it was found that aphids could only spread the virus by immediately moving from infected plants to healthy ones. So farmers planted other types of plants between fields so aphids could drop the virus before moving on. It reduced the spread of the virus by half.
- In Texas, Texas A&M University's promotion of the implementation of IPM programs helped 360 producers reduce insecticide use by a third while maintaining or increasing yields. This led to a $106 million increase in net income for these producers and a $340 million economic impact.
- On a golf course duckweed was infesting a million gallon irrigation tank. $50 dollars worth of goldfish were added that eat the weed = problem solved.
- At Purdue University researchers discovered that predator mites in apples would eat the bad mites if growers didn't spray as much. When growers cut the number of chemical applications from three to one they achieved better control of the pest and reduced average pesticide costs by 65 per cent.

- In Idaho it takes only 10 wild oat plants per square foot to slash the net income of a spring barley grower from $223 to $163 per acre. However, weed scientists have shown that increasing barley seeding rates by a third and applying a post-emergent herbicide can add more than $12 million to Idaho barley producers' incomes.

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