

PEST MANAGEMENT PRACTICES

For the complete report see <http://usda.mannlib.cornell.edu/reports/nassr/other/pest/>

Information presented here was based on data compiled from a survey conducted in February 2001. The producers were asked how many acres of a specific commodity they grew in 2000 and what pesticide management practices they used. The producers were asked a series of questions to which they responded yes or no. Pests were defined as weeds, insects, and diseases. If the respondent used a specific practice on a crop, it was assumed that the practice was used on all of the acres of that crop. Each question has been categorized into one of four pest management categories: prevention, avoidance, monitoring, and suppression.

Prevention was the practice of keeping a pest population from infesting a crop or field. It includes such tactics as using pest-free seeds and transplants, preventing weeds from reproducing, choosing cultivars with genetic resistance to insects or disease, irrigation scheduling to avoid situations conducive to disease development, cleaning tillage and harvesting equipment between fields or operations, using field sanitation procedures, and eliminating alternate hosts or sites for insect pests and disease organisms.

Avoidance may be practiced when pest populations exist in a field or site but the impact of the pest on the crop can be avoided through some cultural practice. Examples of avoidance tactics include crop rotation such that the crop of choice was not a host for the pest, choosing cultivars with genetic resistance to pests, using trap crops, choosing cultivars with maturity dates that may allow harvest before pest populations develop, fertilization programs to promote rapid crop development, and simply not planting certain areas of fields where pest populations were likely to cause crop failure. Some tactics for prevention and avoidance strategies may overlap.

Monitoring includes proper identification of pests through surveys or scouting programs, including trapping, weather monitoring, and soil testing where appropriate.

Suppression tactics include cultural practices such as narrow row spacings or optimized in-row plant populations, alternative tillage approaches such as no-till or strip-till systems, cover crops or mulches, or using crops with allelopathic potential in the rotation. Physical suppression tactics may include cultivation or mowing for weed control, baited or pheromone traps for certain insects, and temperature management or exclusion devices for insect and disease management. Biological controls, including mating disruption for insects, could be considered as alternatives to conventional pesticides, especially where long-term control of an especially troublesome pest species can be obtained. Chemical pesticides were important and some use will remain necessary. However, pesticides should be applied as a last resort in suppression systems.

The data were published in two tables for each crop: percent of acres receiving the specific pest management practice and percent of farms using the specific pest management practice. These percentages were published at the United States and regional level. For barley, corn, soybeans, wheat, fruits and nuts, vegetables, and all other crops and cropland pasture, the percentages refer only to farms and planted acres. For alfalfa hay and other hay, the percentages refer only to farms and harvested acres. A single asterisk in the table means there were too few reports to publish the percentage while a double asterisk means the percentage was less than one percent. A dash indicates there were no reports of the practice being used.

Pest Management Practices, Northeast ^{1/}, 2000

PRACTICE	Percent of Acres Receiving Practice						Percent of Farms Utilizing Practice					
	Barley	Field Corn	Alfalfa Hay	Other Hay	Fruits and Nuts	Vegetables	Barley	Field Corn	Alfalfa Hay	Other Hay	Fruits and Nuts	Vegetables
	Percent of Acres						Percent of Acres					
Prevention Practices:												
Tillage/etc. to manage pests	46	44	32	21	26	70	24	30	25	36	19	56
Remove or plow down crop residue	16	36	20	12	2/	23	13	27	20	11	2/	47
Clean implements after fieldwork	40	44	33	25	24	39	31	37	31	23	38	23
Water management practices	2/	9	2	2	2/	35	2/	3	3	3	2/	18
Avoidance Practices:												
Crop varieties genetically modified to be resistant to insects	--	11	--	--	--	--	--	17	--	--	--	--
Adjust planting/harvesting dates	6	13	14	3	2/	31	2/	12	5	3	2/	5
Rotate crops to control pests	46	70	40	15	2/	83	50	54	32	18	2/	73
Crop varieties genetically modified to be pathogen/nematode resistant	--	2	--	--	--	--	--	4	--	--	--	--
Alternate planting locations	12	25	17	4	2/	26	6	29	11	3	2/	41
Grow trap crop to control insect	--	2	2/	--	--	2/	--	2	2/	--	--	2/
Monitoring Practices:												
Scouted for pests	34	37	37	10	79	56	26	33	21	9	67	48
Records kept to track pests	31	19	12	2	34	36	18	10	8	3	13	5
Field mapping of weed problems	11	32	16	10	2/	24	15	27	13	4	2/	5
Soil analysis to detect pests	15	10	7	6	2/	28	8	11	5	6	2/	3
Pheromones to monitor pests	2/	3/	2/	2/	2/	41	2/	3/	2/	2/	2/	2
Weather monitoring	14	26	25	14	77	52	11	21	29	15	46	35
Suppression Practices:												
Crop varieties genetically modified to be herbicide resistant	--	4	--	--	--	2/	--	13	--	--	--	2/
Scouting used to make decisions	29	14	12	3	88	50	16	8	4	2	70	4
Biological pesticides	2/	7	2/	4	19	38	2/	13	2/	2	18	22
Beneficial organisms	--	3	2/	--	2/	3	--	2	2/	--	2/	15
Physical barriers	4	11	12	10	2/	53	2	12	13	10	2/	64
Adjust planting methods	2/	5	2	1	--	6	2/	5	3	5	--	44
Alternate pesticides	11	36	21	8	77	74	11	30	18	6	65	60
Pheromones to disrupt mating	2/	2/	--	2/	2/	2/	2/	2/	--	2/	2/	2/

^{1/} New England, New York, New Jersey, Pennsylvania, Maryland, and Delaware.
^{2/} Insufficient reports to publish data.
^{3/} Less than one percent.