Trac Software for fruit – 2009 report

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Fruit Processors, Storages and Wholesalers		
Motts Inc.,Cadbury Schwepp's	Ultimate Juice (Zeigler)	Carriage House Co., Inc.
Yonder Farms Fruit Distributors	Beech-Nut Nutrition Corp.	Growers Co-op. Grape Juice
Birds Eye Foods	Knouse Foods	Co.
Bucolo Cold Storage Inc.	Constellation Wines	Meier's Wine Cellars, Inc.
Champlain Valley Apple Storage	Cliffstar Corporation	Mogen David Wine Co.
Pavero Cold Storage	Westfield Maid	Red Tomato, EcoApple

Project location(s): This software is used on farms locations across New York, primarily tree fruit and grape growing regions. In 2009, Trac Software was downloaded for use in 30 other States, and in Canada and 17 other countries.

Abstract:
Trac software, Excel-based record-keeping and reporting programs, enable easy maintenance and reporting of accurate crop protection records that are, 1) vital to a farmer's market edge, when global markets demand pesticide traceability, and 2) fundamental to IPM practices. The 2009 versions of Trac software for fruit were again made available online for free. This year, 518 Trac software files were downloaded by 300 people. The 2009 upgrades included revisions to the pesticide ChemTable, the Trac Software Manual, creation of three new report forms, and improved automatic report entries. When asked, 98% of farmers using Trac say they will continue using it for their record-keeping and reporting needs.

Background and justification:
Farmers face increasing need to produce crop protection and production records on demand. Pesticide records are required by the Environmental Protection Agency Worker Protection Standard (EPA-WPS), the New York State Department of Environmental Conservation (DEC), processors, marketers, etc and each has a different reporting form, required either by law or to market the crop. This necessitates that farmers fill out several different forms when marketing their crop, making record-keeping an unnecessarily burdensome task. In an expanding and increasingly competitive global market, farmers with the ability to produce detailed crop production records, including pesticide spray records, will have a competitive edge.

As more consumers actively seek products with eco-labels, those grown without pesticides, those produced in an environmentally sound manner, or those produced under sustainable practices, the onus will be on the farmer, processor, and marketer to show auditors that such practices were used. Furthermore, accurate records are critically important to the farmer, particularly when pest or disease control failures or severe outbreaks occur. Computerized records allow farmers to easily review past IPM practices in light of pest control failures or severe pest pressure.

In 2003, we released the first version of Excel-based, TracApple record-keeping software which generates, at once, the several pesticide spray record forms required by processors, buyers, and brokers. Subsequent funding from several sources supported software development in Microsoft Excel for TracGrape development in 2004, and TracPear, TracCherry, TracStoneFruit, and TracBerry in 2005. Every year a revised version is released with updated pesticide registration information in the ChemTable.

Trac software is licensed and copyrighted by Cornell University through the Cornell Center for Technology Enterprise & Commercialization (CCTEC). Farmers using Trac software enter their data once and can send it to various report forms for processors, buyers, and government agencies. The user simply fills in the blanks on data entry worksheets. Trac software has drop-down lists for pesticides and pests, saving time and preventing errors. The software generates drop-down lists specific to the user's farm business. When a pesticide trade name is selected Trac automatically fills in the EPA registration number, restricted entry interval, pre-harvest interval, and calculates the earliest harvest date and the cost of the application. The software fills out an EPA-WPS Central Posting Form to inform farm workers about safe re-entry.

Objectives:
1. Upgrade, license and release Trac software for fruit.
2. Update supporting information for Trac software.
3. Conduct Trac workshops and presentations.
4. Facilitate development of Trac software for other crops.

Procedures:
1. UPGRADE TRAC SOFTWARE FOR FRUIT, LICENSE AND RELEASE THE 2009 VERSIONS.

The 2009 versions of TracApple, TracPear, TracStoneFruit, and TracCherry were available in March and TracGrape and TracBerry in April from the Trac Fruit Software downloads web page http://nysipm.cornell.edu/trac/downloads/. Trac software was disclosed for copyright and licensing at the CCTEC. Online availability was announced through Extension newsletters, trade magazines, Extension-sponsored grower meetings, the Fruit & Vegetable Expo, and via email to all 2008 Trac Software CD recipients.

The most important task in updating Trac software is the pesticide information for each crop. This effort is supported by the Cornell Pest Management Guidelines series and by faculty and staff involved in contributing to these publications (Agnello 2009, Pritts 2009, Weigle and Muza 2009.) The 2009 ChemTable revisions removed pesticides no longer registered for use on a particular crop in New York, added newly registered pesticides, and verified the accuracy of EPA registration numbers, restricted entry intervals, and pre-harvest intervals.

Grower suggestions for improvement of Trac Software serve as the basis for most yearly revisions. In addition to careful review of the ChemTable, the following improvements were made in 2009:
- Three new reports, based on work done on Trac software for turfgrass:
  1. NYS DEC Applicator/Technician Pesticide Annual Report (ApplicatorReport-26).

2. List of Commercial Applicators and Technicians report (Applicators-26A).
3. Record Keeping Information (RecordKeeping-26).

- Applicators sheet uses "last name, first name" format.
- Spray equipment list is on the Applicators sheet.
- Site Lists sheet will send Block size automatically to the SprayData sheet
- SprayData has new column to indicate if the spray was a partial treatment to potentiate automatic entry of Block size.
- Good Agricultural Practices web link www.gaps.cornell.edu added on the Trac cover sheet to support food safety.

2. UPDATE SUPPORTING INFORMATION FOR TRAC SOFTWARE.

The Trac Software Manual was revised in 2009, reflecting the improvements made to the software. Carroll updated the Trac software, http://nysipm.cornell.edu/trac/, web pages rewriting those on Trac FAQ's, the Trac Bug Sheet, the Trac Bug Archives, and creating a webpage with step-by-step instructions on downloading the software. Trac brochures were distributed at Extension-sponsored grower meetings and the Empire State Fruit & Vegetable Expo.

3. CONDUCT TRAC WORKSHOPS AND PRESENTATIONS.

In 2009, a poster presentation on Trac Software (Table 1) was given at the 5th International IPM Symposium meeting in Portland, OR.

Table 1. TracApple presentations in 2009.

Date	Title	Location	Audience	#
3/25	Trac Software Improves Pesticide Record-Keeping for the Agricultural and Turfgrass Industries	International IPM Symposium, Portland, OR	Scientists	50

4. FACILITATE DEVELOPMENT OF TRAC SOFTWARE FOR OTHER CROPS.

Jennifer Grant, NYS IPM Program, lead development of Trac for turfgrass managers (Grant et al 2009). Eight licenses for TracTurf which includes TracSod, TracGolf, TracGrounds, and TracLawn CDs were issued by the Cornell Center for Technology Enterprise & Commercialization (CCTEC)in 2009. Licensing for this software was requested through CCTEC by a company in South Korea that works with turfgrass products.

Carroll is in discussions with Cliffstar Corporation, a juice processor, regarding development of TracCranberry software.

Results and discussion:

Software	Copies Downloaded
TracApple	143
TracGrape	163
TracCherry	46
TracPear	46
TracStoneFruit	63
TracBerry	57
Total	**518**

Three hundred people downloaded 518 copies of Trac software for fruit in 2009. Ninety-six were located in New York, 171 people in 30 other states. Internationally, nine were downloaded in Canada, two in Australia and one each in 17 other countries, including Austria, Brazil, Costa Rica, Egypt, France, Georgia, India, Japan, Kenya, Mexico, Pakistan, Portugal, Senegal, South Africa, Taiwan, and Turkey. The total number downloaded in 2009 of each software file is tabulated on the left.

The 96 people in NY downloaded 53 TracGrape, 41 TracApple, 13 TracBerry, 11 TracStoneFruit, 7 TracPear, and 6 TracCherry.

Carroll sent information to University of Massachusetts Extension on the number of growers using Trac Software for fruit in their state. There were a total of 13 MA contacts who

downloaded software in 2009, including 11 TracApple, 3 TracCherry 3 TracBerry, 3 TracPear and 2 TracStoneFruit. In Iowa, 38 people downloaded Trac software, including 38 TracGrape, 7 TracApple, 5 TracPear 5 TracStoneFruit, 4 TracCherry, and 3 TracBerry. In Michigan, 15 downloaded Trac software, primarily TracApple. Seven apple growers in Washington State downloaded TracApple.

The number of tech support calls (17) decreased in 2009 and represented only 6% of users and 3% of software files downloaded.

Carroll was honored as a Cornell Inventor by The Cornell Center for Technology Enterprise and Commercialization at their 2009 Technology Innovations Gala Reception.

Impact – Trac has effectively streamlined the burdensome task of record-keeping and reporting for fruit farmers. In 2009, 518 Trac Software files were downloaded by 300 farmers in NY, other states and countries. Trac Software has been successfully developed and deployed for 15 fruit crops, including: apple, pear, grape, tart cherry, sweet cherry, peach, nectarine, apricot, plum, strawberry, blueberry, raspberry, blackberry, currant, and gooseberry. Growers using the software state that it is easy to record and manage their crop production and spray information in Trac. Trac software has been made available for free; compared to other farm-related software that is purchased and is more complicated to learn, Trac software provides a simple answer to bringing more farmers into the computer age and digitizing New York's agricultural industry. Growers that are able to easily access computer records of pesticide and fertilizer applications and compare practices from year to year, tracking costs and harvests, will better manage their farm businesses, make more informed IPM decisions, and foster their farm's sustainability. Growers using Trac software said it has helped their bottom line (61%), improved their access to new markets (28%), improved their IPM record-keeping and reporting ability (79%), made record-keeping easier (70%), and 98% will continue using it (Carroll 2008).

Publications:

Carroll, J.E. 2009. Computer training modules. http://nysipm.cornell.edu/trac/nyfvi/default.asp, Cornell Univ, NYS IPM Program.

This site contains the following publications, developed for a workshop funded by the NYFVI:

Kellogg, J. and Carroll, J. 2006. Computers made easy with instructors notes. Cornell Univ, NYS IPM Program. 8 pp. http://nysipm.cornell.edu/trac/nyfvi/files/CompMadeEasyInst.pdf

Kellogg, J. and Carroll, J. 2006. Computers made easy. Cornell Univ, NYS IPM Program. 8 pp. http://nysipm.cornell.edu/trac/nyfvi/files/CompMadeEasySt.pdf.

Kellogg, J. and Carroll, J. 2006. Internet ease with instructors notes. Cornell Univ, NYS IPM Program. 8 pp. http://nysipm.cornell.edu/trac/nyfvi/files/InternetEaseInst.pdf

Kellogg, J. and Carroll, J. 2006. Internet ease. Cornell Univ, NYS IPM Program. 8 pp. http://nysipm.cornell.edu/trac/nyfvi/files/InternetEaseSt.pdf

Kellogg, J. and Carroll, J. 2006. Excel basics with instructors notes. Cornell Univ, NYS IPM Program. 10 pp. http://nysipm.cornell.edu/trac/nyfvi/files/ExcelBasicsInst.pdf

Kellogg, J. and Carroll, J. 2006. Excel basics. Cornell Univ, NYS IPM Program. 10 pp. http://nysipm.cornell.edu/trac/nyfvi/files/ExcelBasicsSt.pdf

Carroll, J. and Kellogg, J. 2006. Trac software basics with instructors notes. Cornell Univ, NYS IPM Program. 12 pp. http://nysipm.cornell.edu/trac/nyfvi/files/TracBasicsInst.pdf

Carroll, J. and Kellogg, J. 2006. Trac software basics. Cornell Univ, NYS IPM Program. 12 pp. http://nysipm.cornell.edu/trac/nyfvi/files/TracBasicsSt.pdf

Anonymous. 2006. A computer glossary. Cornell Univ, NYS IPM Program. 8 pp. http://nysipm.cornell.edu/trac/nyfvi/files/comp_gloss.pdf

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Carroll, J.E. 2009. TracBerry version 2009. http://nysipm.cornell.edu/trac/downloads/, Cornell Univ, NYS IPM Program.

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Carroll, J.E. 2009. Trac Bug Sheet. http://nysipm.cornell.edu/trac/bugs/default.asp, Cornell Univ, NYS IPM Program.

Carroll, J.E. 2009. TracCherry version 2009 software. NYS IPM Program, Cornell University. http://nysipm.cornell.edu/trac/downloads/default.asp

Carroll, J.E. 2009. Trac Frequently Asked Questions. http://nysipm.cornell.edu/trac/tracfaqs/default.asp, Cornell Univ, NYS IPM Program.

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Carroll, J.E. 2009. TracPear version 2009 software. NYS IPM Program, Cornell University. http://nysipm.cornell.edu/trac/downloads/default.asp

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Grant, J., Carroll, J., and Marvin, D. 2009. Trac Software for turfgrass: TracGolf, TracGrounds, TracSod and TracLawn 2008 report. Cornell Univ., NYS IPM Program Project Reports 2008-2009, NYS IPM Pub No. 509. pp. 22-24. http://nysipm.cornell.edu/grantspgm/projects/proj08/comm/grant2.asp

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Agnello, A.M., Helms, M., Smith, W., Landers, A.J., Rosenberger, D.A., Cox, K., Carroll, J.E., Robinson, T.L., Breth, D.I., Stiles, W., Curtis, P.D., Cheng, L., and Hoying, S.A. 2009. Pest Management Guidelines for Commercial Tree-Fruit Production 2009. Cornell Cooperative Extension, Ithaca. 235 pp.

Carroll, J.E. 2008. Impact of NYS IPM Program's Trac Software for spray record-keeping and reporting. NYS IPM Program Project Reports 2007-2008, NYS IPM Pub 506: 85-90. http://nysipm.cornell.edu/grantspgm/projects/proj07/fruit/carroll4.asp

Grant, J., Carroll, J., and Marvin, D. 2009. Trac Software for turfgrass: TracGolf, TracGrounds, TracSod and TracLawn 2008 report. Cornell Univ., NYS IPM Program Project Reports 2008-2009, NYS IPM Pub No. 509. pp. 22-24. http://nysipm.cornell.edu/grantspgm/projects/proj08/comm/grant2.asp

Pritts, M., Heidenreich, C., Helms, M., Smith, W., Loeb, G., Weber, C., McKay, S., Carroll, J.E., and Cox, K. 2009. Pest Management Guidelines for Berry Crops 2009. Cornell Cooperative Extension, Ithaca. 102 pp.

Weigle, T.H. and A.J. Muza (ed.). 2009. New York and Pennsylvania Pest Management Guidelines for Grapes: 2009. Cornell Cooperative Extension, Ithaca. 102 pp.