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# SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

## FORM 11-K

**Annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934**

**For the fiscal year ended December 31, 2004**

**Commission File Number 1-5725**

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

**Quanex Corporation Employee Savings Plan**

B. Name of the issuer of the securities held pursuant to the plan and the address of its principal executive office:

**Quanex Corporation**

**1900 West Loop South, Suite 1500  
Houston, TX 77027**

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### REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Benefits Committee  
Quanex Corporation  
Houston, TX

RE: Quanex Corporation Employee Savings Plan

We have audited the accompanying statements of net assets available for benefits of the Quanex Corporation Employee Savings Plan (the "Plan") as of December 31, 2004 and 2003, and the related statements of changes in net assets available for benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Plan is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2004 and 2003, and the changes in net assets available for benefits for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets (held at end of year) as of December 31, 2004 is presented for the purpose of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This schedule is the responsibility of the Plan's management. Such schedule has been subjected to the auditing procedures applied in our audit of the basic 2004 financial statements and, in our opinion, is fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole.

/s/ DELOITTE & TOUCHE, LLP

DELOITTE & TOUCHE, LLP

Houston, Texas  
June 24, 2005

**QUANEX CORPORATION  
EMPLOYEE SAVINGS PLAN**

**STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS**

	DECEMBER 31,	
	2004	2003
<b>Assets:</b>		
Investments at fair value (see Note C)	\$ 47,426,190	\$ 39,733,499
Participants loans	30,035	—
Employee contributions receivable	457,689	342,945
Employer contributions receivable	130,963	101,004
	<u>588,652</u>	<u>443,949</u>
Net assets available for benefits	<u>\$ 48,044,877</u>	<u>\$ 40,177,448</u>

See notes to financial statements.

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**QUANEX CORPORATION  
EMPLOYEE SAVINGS PLAN**

**STATEMENTS OF CHANGES IN NET ASSETS AVAILABLE  
FOR BENEFITS**

	DECEMBER 31,	
	2004	2003
<b>Investment income:</b>		
Interest and dividends	\$ 1,011,953	\$ 535,886
Net appreciation in fair value of investments (see Note C)	3,900,787	6,528,652
	<u>4,912,740</u>	<u>7,064,538</u>
<b>Contributions:</b>		
Employer (net of forfeitures)	715,998	563,242
Employee	3,806,914	2,769,718
	<u>4,522,912</u>	<u>3,332,960</u>
<b>Interest on participant loans</b>	336	—
Total additions	<u>9,435,988</u>	<u>10,397,498</u>
<b>Benefit payments</b>	1,663,502	2,968,828
Administrative fees (see Note D)	83	80
Total deductions	<u>1,663,585</u>	<u>2,968,908</u>
<b>Transfers between plans (see Note G)</b>	95,026	221,172
Increase in net assets available for benefits	7,867,429	7,649,762
<b>Net assets available for benefits:</b>		
Beginning of year	40,177,448	32,527,686
End of year	<u>\$ 48,044,877</u>	<u>\$ 40,177,448</u>

See notes to financial statements.

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**QUANEX CORPORATION  
EMPLOYEE SAVINGS PLAN**

**EIN: 38-1872178; PN 012**

**Schedule H, Line 4i - Schedule of Assets (Held at End of Year)  
December 31, 2004**

(a)	(b) Identity of issue, borrower, lessor or similar party	(c) Description of investment including maturity date, rate of interest, collateral, par, or maturity value	(d) Cost	(e) Current Value
*	Fidelity	Puritan Fund	\$ 4,608,138	\$ 4,975,620
*	Fidelity	Magellan Fund	7,457,376	8,088,089
*	Fidelity	Contrafund	4,727,538	5,493,354
*	Fidelity	Growth & Income Fund	3,668,021	3,894,641
*	Fidelity	Independence Fund	2,391,153	2,207,000
*	Fidelity	Overseas Fund	1,566,242	1,805,835
*	Fidelity	Balanced Fund	1,257,407	1,433,298
*	Fidelity	Blue Chip Fund	2,306,939	2,260,983

*	Fidelity	Asset Manager Fund	352,101	358,029
*	Fidelity	Low-Priced Stock Fund	4,364,353	5,657,796
*	Fidelity	Government Money Market Fund	5,364,681	5,364,681
	Templeton	Foreign Fund	534,086	651,648
	Neuberger & Berman	Partners Trust Fund	318,610	368,594
		Total Mutual Fund Assets	38,916,645	42,559,568
*	Quanex Corporation	Unitized common stock	1,811,819	3,161,875
*	Fidelity	Common/Commingled trust	1,707,447	1,704,747
	Participant loans	Loan maturing within 5 years, bearing interest at 5.75%		30,035
		Total Investments	\$ 42,435,911	\$ 47,456,225

\* Party-in-Interest

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**QUANEX CORPORATION  
EMPLOYEE SAVINGS PLAN**

**NOTES TO FINANCIAL STATEMENTS  
YEARS ENDED DECEMBER 31, 2004 AND 2003**

A. DESCRIPTION OF THE PLAN

The following brief description of the Quanex Corporation Employee Savings Plan (the "Plan") provides only general information. Participants should refer to the Plan agreement for more complete information.

- (1) **General.** The Plan is a defined contribution plan which covers employees of the Company's MACSTEEL and Corporate office locations, excluding those employees who are covered by a collective bargaining agreement. The Plan is subject to the Employee Retirement Income Security Act of 1974 ("ERISA"). Fidelity Management Trust Company ("Fidelity" or the "Trustee") holds the assets of the Plan in trust. The Benefits Committee (the "Committee"), appointed by the Company's Board of Directors, serves as the Plan administrator.

Effective January 1, 2004, the salaried employees of MACSTEEL Monroe, Inc. became participants in the Plan.

- (2) **Contributions.** Participants may elect to contribute up to 50% of their compensation as defined by the Plan agreement on either a pre-tax or after-tax basis. The Company contributes 50% of the first 5% of compensation that a participant contributes to the Plan.
- (3) **Participants Account.** Each participant's account is credited with the participant's contribution; the Company's matching contribution, and an allocation of investment income, which is based on the participant's account balance as of the end of the period in which the income is earned.
- (4) **Vesting and Forfeitures.** Participants are immediately vested in their voluntary contributions and the related earnings. Vesting in the employer's matching contributions for employees is 20% for each year of credited service and fully vests after five years. Upon death, retirement or total and permanent disability, the participant or beneficiary becomes immediately fully vested in the employer's contribution. In the event of termination, nonvested portions of employer's contributions are immediately forfeited by participants and utilized to reduce future employer matching contributions. Amounts forfeited during 2004 and 2003 were \$12,701 and \$13,857, respectively. There were \$1,183 and \$0 available for use in the forfeiture account at December 31, 2004 and 2003, respectively.
- (5) **Payment of Benefits.** Upon termination of service, the participant may elect to receive a lump-sum amount equal to the amount of vested benefits in his or her account. Terminated employees with an account balance of less than \$1,000 will automatically receive a lump sum distribution (\$5,000 before March 28, 2005).
- (6) **Loans.** No loans shall be made to participants under the Plan. Employees of MACSTEEL Monroe, Inc. who had a loan outstanding under the Cargill Partnership Plan on December 31, 2003, shall be allowed to roll over the loan to the Plan. Loans mature within 5 years and bear interest at 5.75%.

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B. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

- (1) **Accounting Basis.** The financial statements of the Plan are prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America.
- (2) **Investment Valuation.** The Plan recognizes net appreciation or depreciation in the fair value of its investments. Investments are reflected at fair value in the financial statements. Fair value of mutual fund assets is determined using a quoted net asset value. Fair value for Quanex Corporation common stock, which is listed on the New York Stock Exchange, is determined using the last recorded sales price. The recorded value of the common/commingled trust is at face value, which is fair value.

Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

Management fees and operating expenses charged to the Plan for investments in the mutual funds are deducted from income earned on a daily basis and are not separately reflected. Consequently, management fees and operating expenses are reflected as a reduction of investment return for such investments.

- (3) Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and changes therein and disclosure of contingent assets and liabilities. Actual results could differ from these estimates.
- (4) Administrative Expenses. The Company pays the administrative expenses, except for loan set up and carrying fees and redemption fees imposed on certain Fidelity funds.
- (5) Payment of Benefits. Benefit payments are recorded when paid.
- (7) Risks and Uncertainties. The Plan utilizes various investment instruments, including mutual funds and common stock. Investment securities, in general, are exposed to various risks, such as interest rate, credit and overall market volatility. Due to the level of risk associated with certain investment securities it is reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the financial statements.

## C. INVESTMENTS

The following are investments that represent 5 percent or more of the Plan's investments.

	December 31, 2004		December 31, 2003	
	Shares	Amount	Shares	Amount
Fidelity Magellan Fund	77,927	\$ 8,088,089	80,947	\$ 7,911,776
Fidelity Low-Priced Stock Fund	140,566	5,657,796	108,011	3,779,001
Fidelity Contrafund	96,806	5,493,354	84,502	4,170,182
Fidelity Government Money Market Fund	5,364,681	5,364,681	5,038,268	5,038,268
Fidelity Puritan Fund	262,566	4,975,620	226,046	4,175,069
Fidelity Growth & Income Fund	101,927	3,894,641	100,350	3,575,480
Quanex unitized common stock	100,091	3,161,875	* 74,804	* 1,599,317
Fidelity Blue Chip Fund	* 54,207	* 2,260,983	54,875	2,174,709
Fidelity Independence Fund	* 123,780	* 2,207,000	150,004	2,409,062

\* presented for comparative purposes only

During the years ended 2004 and 2003, the Plan's investments (including gains and losses on investments bought and sold, as well as held during the year) appreciated in value as follows:

	2004	2003
Mutual funds	\$ 2,981,032	\$ 6,042,912
Quanex unitized common stock	919,755	485,740
	<u>\$ 3,900,787</u>	<u>\$ 6,528,652</u>

## D. RELATED PARTY TRANSACTIONS

Certain Plan investments are shares of mutual funds managed by Fidelity. Fidelity is the trustee as defined by the Plan and, therefore, these transactions qualify as party-in-interest transactions. In addition, the Plan invests in shares of Quanex Corporation unitized common stock. Quanex Corporation is the Plan sponsor as defined by the Plan and, therefore, these transactions also qualify as party-in-interest transactions. As of December 31, 2004 and 2003, the value of Quanex Corporation common stock held by the Plan was \$3,161,875 and \$1,599,317, respectively.

## E. PLAN TERMINATION

Although it has not expressed any intention to do so, the Company has the right under the Plan to terminate the Plan at any time subject to the provisions set forth in ERISA. In the event of Plan termination, the assets held by the Trustee under the Plan will be valued and fully vested, and each participant will be entitled to distributions respecting his or her account.

## F. FEDERAL INCOME TAX STATUS

The Plan is subject to specific rules and regulations related to employee benefit plans under the Department of Labor and the Internal Revenue Service. The Plan has received a favorable letter of tax determination dated August 14, 2001. As such, the Plan is a qualified trust under Sections 401(a) and 401(k) of the Internal Revenue Code (the "Code") and, as a result, is exempt from federal income tax under Section 501(a) of the Code. Although the Plan has been amended since receiving the determination letter, the Company believes the Plan is currently designed and being operated in compliance with the applicable requirements of the Code. The Company believes the Plan was qualified and the related trust was tax-exempt as of the financial statement dates.

## G. TRANSFER OF ASSETS

Account balances of \$60,829 and \$221,172 were transferred between the Plan and the Quanex Corporation Hourly Bargaining Unit Employees Savings Plan in plan years 2004 and 2003, respectively.

Loan balances from employees of MACSTEEL Monroe, Inc. totaling \$34,197 were transferred into the Plan in 2004.

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#### SIGNATURES

The Plan. Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

Quanex Corporation Employee Savings Plan

Date: June 27, 2005

/s/ Terry M. Murphy

Terry M. Murphy, Benefits Committee

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#### INDEX TO EXHIBITS

23.1	Consent of Independent Registered Public Accounting Firm
99.1	Certification by chief executive officer and chief financial officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

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CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 33-38702 of Quanex Corporation on Form S-8 of our report dated June 24, 2005, appearing in this Annual Report on Form 11-K of the Quanex Corporation Employee Savings Plan for the year ended December 31, 2004.

/s/ DELOITTE & TOUCHE LLP

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DELOITTE & TOUCHE LLP

Houston, Texas

June 24, 2005

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CERTIFICATION PURSUANT TO SECTION 906  
OF THE SARBANES-OXLEY ACT OF 2002

We hereby certify that the accompanying Report of Quanex Corporation Employee Savings Plan (the "Plan") on Form 11-K for the year ended December 31, 2004 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Report fairly presents, in all material respects, the financial condition and results of operations of the Plan.

June 27, 2005

/s/ RAYMOND A. JEAN

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Raymond A. Jean  
*Chairman of the Board, President and  
Chief Executive Officer*

/s/ TERRY M. MURPHY

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Terry M. Murphy  
*Senior Vice President—Finance and  
Chief Financial Officer*

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